

## **Disparities in charter school resources—the influence of state policy and community**

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Recent findings show that students attending charter schools in the United States achieve at comparable or lower levels to those enrolled in regular public schools, perhaps due to uneven quality and disparities in the levels of resources acquired by charter schools. But little is known as to what state and local factors contribute to disparate levels of resources in the charter school sector. This article examines how local context, the charter school's organizational form, and state policies may influence material and human resources obtained by charter schools and their capacity to innovate. We find marked differences among charter schools situated in different US states in terms of teacher qualities, student–staff ratios, length of the school day, and the propensity to unionize, drawing on data from the US Schools and Staffing Survey for the 1999/2000 school year. Charter schools rely less on uncredentialed teachers in states that more tightly regulate the sector, and state spending is associated with more equal teacher salaries among charter schools within states. But the lion's share of variance in charter school resources is attributable to highly variable local contexts, not to state-level factors, especially the kinds of students served and the school's organizational form. Charter schools serving predominately black students rely on less experienced teachers who are more likely to be uncredentialed; their teachers also report more demanding working conditions and lower levels of efficacy, compared with charter teachers working in white schools. Conversion charter schools pay staff over \$5100 more annually and rely much less on uncredentialed and part-time teachers than do start-up schools. We examine implications for the reproduction of unequal student achievement within the charter school sector.

### **Introduction**

Recent studies reveal that students attending charter schools in the United States display achievement levels that are similar to, or lower than, comparable students enrolled in regular public schools (Finnigan et al. 2004; Ladd and Bifulco 2004; Nelson et al. 2004). Empirical studies to date are mixed in their methodologies, some tracking growth, others offering cross-sectional snapshots. True experimental data have yet to emerge. But few investigators when assessing growth have found that charter students are outperforming regular public school students (Miron and Nelson 2004). Why have these achievement results been so disappointing?

One possible explanation is that charter schools have yet to acquire comparable levels of resources vis-à-vis regular public schools. An alternative account is that charter schools serve children from lower income families, yet demographic differences are small relative to regular schools, as we showed in an earlier article (Fuller et al. 2004). Evidence has emerged that backs the resource-disparity argument. For example, one recent study found that charter schools receive about \$1800 less per pupil than average spending for all youngsters in their host school district (Finn et al. 2005). Other researchers have found that specific quality indicators lag behind in

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charter schools, such as teacher credential levels, lower mean salaries, and less capacity to draw categorical school aid, such as Title I for special reading programs or special education funding (Burian-Fitzgerald et al. 2004; Zimmer et al. 2003).

A closely related concern is whether disparities in resources among charter schools inadvertently reproduce the same unequal results that beset regular public schools. We know that teacher qualities, pupil–teacher staffing ratios, average salaries, and other resources vary dramatically across charter schools, and that these disparities are associated with the attributes of students served locally and organizational level and type (e.g., elementary versus high school charter schools, and start-up versus conversion charters; Fuller et al. 2004).

But what factors drive these resource disparities among charter schools, and can state policies help to equalize quality levels in such a decentralized sector? Two theoretical frames are helpful in understanding how policy or local economic and demographic conditions may be driving resource disparities among schools. Under active-state conceptions of how to remedy disparities within the public sector, advocates and policy makers would look to government for ameliorative measures. In contrast, proponents of charter schools argue that a largely unregulated market of competitive organizations will be more responsive to diverse parents and collectively move toward greater efficiency, compared with the near-monopoly of public schools. But if charter schools arise and prosper when local economic, institutional and demographic conditions are favorable, would we expect to see much effect of state policies on the overriding influence of local circumstances? Like regular public schools, for example, charter schools situated in more affluent communities may be able to attract stronger teachers, more resourceful parents and foundation dollars.

A counter hypothesis is that charter school advocates have fought strenuously for favorable state policies, from start-up funding and elimination of caps on expansion, to direct financing from the state capital which avoids district-level impediments.<sup>1</sup> Both the supply of charter schools and their resource levels, under this theoretical account, should be sensitive to variation in the regulatory environments found across the states.

The second question we address is whether the relative influence of state and local forces varies for different kinds of school resources. We estimate levels of material flows, human resources and innovative forms of school organization across a national sample of charter schools. Each type of resource may be differentially sensitive to variability in state policy versus local conditions. Third, the local institutional position and history of a charter school may contribute to its resource level, for example, the earlier descriptive finding that charters that are converted public schools, rather than start-ups, are more adequately resourced. This suggests how the institutional categories that characterize the charter school lock in certain resource inequities.

We sketch alternative accounts of how local schools acquire resources, moving from active-state, market and institutional theories. Then we describe and estimate resources levels observed across the 1010 (weighted) charter schools that participated in the 1999–2000 Schools and Staffing Survey (SASS) directed by the National Center for Educational Statistics (NCES). In addition, we collected in-depth qualitative data from educators working in eight California schools to better understand how principals and teachers define various resources, their fungibility, and how they are acquired.

### **How do charter schools acquire resources in decentralized environments?**

Charter schools, according to some proponents, operate as autonomous organizations in local markets, held directly accountable by the families they serve and sometimes by local school boards. Under this idealized light of market dynamics charter schools acquire resources from their consumers. Yet while charter schools may operate with greater autonomy than regular public

schools, they are embedded in a particular institutional environment. Earlier research details how charter school founders are often focused on building coherent, small-scale communities of teachers and families, advancing their local legitimacy and gaining political support, then negotiating stable resource flows with local district officials or state capitals (Hassel 1999; Rhim et al. 2004). That is, charter schools acquire resources within regulated mixed markets which remain filled with institutional forms to which they must conform to enhance their legitimacy. Two theoretical accounts help to clarify how organizations in decentralized environs, like charter schools, acquire monetary and human resources.

### ***Active central states***

The financing of public schools is typically situated within a government that attempts to support a system of common schools which ideally display similar levels of resources and quality. This goes back to the common school movement in the North American context, and the aims of the liberal-democratic state more broadly. Schooling is viewed as a public good that should be paid for progressively to benefit the entire society (Tyack 1974; Carnoy 1984). Resources have generally flowed into communities which are growing and where more children are enrolling. Yet within and among school districts certain social classes often push politically to ensure more favorable resource flows, which becomes reflected in patterns of school finance (Henig et al. 1999; Rury 2005).

National and state governments often employ bureaucratic means of exercising quality control or rules for exercising accountability. Historically, government has acted to incorporate religious or independent schools into a rationalized public system. This pattern still holds relevance for how some states and districts attempt to make charter schools look more like regular schools (Huerta 2002). The centralization of school finance and accountability standards over the past two decades (in most states) means that public resources are tied to the ability of local schools—including charter schools—to conform to mandates requiring more frequent student testing, central prescription of learning objectives and curricula, and public reporting of change in student performance. At the same time that pro-market school reformers push for expansion of charter schools, Washington's No Child Left Behind (NCLB) Act pulls charters into a highly centralized regulatory regime. This is similar to the formalization and uniformity that Weberian-like governments press onto other sectors, from the rationalization of the post office to the standardization of health care or preschool education (Powell and DiMaggio 1991).

### ***Organizations in markets***

According to neoclassical market theory, firms compete by turning out products or services of a given quality while charging competitive prices. Pure markets are impossible to find in sectors like education or health care, assuming they are to be found anywhere (Whitty et al. 1998). But charter schools do compete for clients, often projecting a distinct image to fill a market niche—from back-to-basics, to serving Mormon families, to advancing African nationalism, to the bicultural upbringing of Latino children. And charter schools seek a market advantage relative to regular public and private schools, depending on the local community (Fuller 2000).

One persisting worry with educational markets is that selectivity and disparities result, both in terms of which parents display the wherewithal to shop effectively and how local communities may yield unequal levels of resources and organizing capacities. One analysis of the 1010 (weighted) charter schools included in the national SASS data found that 56% of all teachers in central city charters reported holding an emergency, probationary or provisional teaching

credential, compared with 39% in suburban charters. Three-fourths of all black charter students were enrolled in just over one-quarter of all charters, where about 60% of all teachers were not fully credentialed in 1999–2000, compared with 44% in predominately white charter schools. Principals in mainly black charters report lower shares of students moving through the individualized education planning process under special education law, compared with the share assessed in predominately white charter schools.

These findings hold implications for theorizing about the likely efficacy of state policies in equalizing resources among charter schools. As features of local communities shape variation in charter quality—including attributes of families being served, the organizing capacities of charter leaders, and the comparative wealth of the locales in which charter schools are located—the comparative influence of state policy may be severely constrained. In fact, market theory argues that more effective charter schools will thrive and ineffective ones will die off under conditions of minimal state involvement (a position modified by charter advocates who now lobby state governments to acquire more resources).

### ***Organizations in decentralized environments***

As sectors are formed, either by government or via mixed markets, the institutionalization of more stable resource flows is often observed. The major policy breakthrough for charter schools, for instance, occurred in the early 1990s when state governments began to set specific finance mechanisms for schools that were granted charters to operate independently of local school boards. This departed dramatically from the alternative school movement in the 1970s when free-spirited educators tried to sustain their novel organizations in the absence of a ‘licensing’ mechanism that signaled legitimacy or real change in the school finance system (Wells 1993).

Charter schools also offer a case of how organizations compete for clients within a regulated institutional environment, advancing a bundle of novel practical and theoretical challenges when it comes to explaining uneven resource flows (Powell and DiMaggio 1991; Scott et al. 2000). Acquiring resources—from government, private funders or customers—requires that the organization look legitimate and effective. The surface features and symbols projected by a charter school, to advance resources flows, must signal that this is a real school with distinct aims, reputable teachers, and situated in a facility that looks like a school. Many states now require charters to follow state curricular guidelines, and they must meet the testing requirements of NCLB. At the school level, charter schools which are converted regular public schools may benefit from more legitimacy and firmly established institutional relationships that are resourceful (e.g., a personnel and staff benefits system).

The necessity of establishing legitimacy can lead to what neo-institutional theorists call ‘organizational isomorphism’. This dynamic is illustrated by how, over time, once-inventive charter schools begin to conform to the structure and normative contours of what a ‘real school’ is supposed to look like, how a legitimate school behaves (Huerta 2002; Lubienski 2004). Yet local dynamics may condition the extent to which some charter school directors can negotiate with resourceful actors within their institutional environment, including officials situated in district offices and state capitals. Conversion charter schools, for instance, often have well-worn channels of resources that flow from the district office, made possible by long-running relationships which are not commonly enjoyed by start-up charters. Another simple example is the frequency with which the word ‘academy’ is now attached to the names of charter schools.

These neo-institutional accounts of how charter schools take shape also inform how charters acquire and mobilize social resources. Rather than relying on bureaucratic controls over the school workplace, for example, charter schools are portrayed as smaller, human-scale communities in which like-minded families and teachers are motivated by particular educational missions or

pedagogical ideals (Finn et al. 2000; Fuller 2000). This relates to a broader line of research on how shared norms and trust, simpler curricular structures, closer social relationship between teachers and students are predictive of higher achievement (Bryk et al. 1993). But the ability of schools to nurture these stronger norms is not distributed randomly across schools; it often depends upon the stability of teaching staff and parents, social class features of families being served, and the organizing capacities of activists inside the community (Bryk and Schneider 2002).

### **Resource disparities among charter schools**

While we know little about how these causal accounts actually play out, we do know that charter schools often lag behind regular public schools when it comes to acquiring resources and along certain indicators of quality. Focusing on variation among California charter schools, researchers at the RAND Corporation found that charter schools overall participate in categorical aid programs at lower rates than a matched sample of conventional public schools. Start-up charter schools drew down less categorical aid than conversion charter schools. Teachers and principals in start-up charter schools were less likely to have a full credential and were less experienced than staff found in conversion charters. Yet when considering less traditional measures of resources, one research group found that principals in charter schools felt a greater sense of autonomy and control, and that start-up charter schools on average received more private funding per pupil than regular public schools and conversion charter schools (Zimmer et al. 2003).

One recent finance study conducted in the 16 states and District of Columbia which host 83% of all charter students, found that per pupil spending was \$1801 (or 22%) lower, compared with spending for students in their respective school districts (Finn et al. 2005). This analysis did not take into account differing mixes of schools, for example, elementary versus more costly high schools. Yet the resource gap appears to be significant between the charter and regular public schools within the same district. Spending per pupil also can be wide among charter schools distributed across different districts, mirroring overall inequities in state school finance systems (Nelson et al. 2000).

National data reveal a similar picture. Drawing from the SASS survey of charter schools, we found that 43% of charter school students nationwide were eligible for lunch subsidies, compared with 39% in regular public schools. Charter schools serve a higher proportion of black students (27%), compared with regular public schools (16%). Staffing ratios (the number of pupils per full-time teacher) are higher in charter schools, and the share of teachers with a full credential is considerably lower in charter schools (52%, against 91% in regular public schools). The mean salary paid to a charter school principal equals 81% of the average salary for a regular public school principal (Fuller et al. 2004).

### **Research questions—which local and state factors explain resource disparities?**

This article builds from these earlier descriptive findings to assess which local and state factors help to explain variation in the resources acquired by charter schools nationwide. Our quantitative analysis speaks to three specific questions, additionally informed by qualitative interviews with charter educators in California.

First, to what extent is the variation in resources acquired by charter schools attributable to differences among states versus differences among the local communities in which schools are situated? If state policy or state-level conditions were driving charter school resources, we would see systematic variation among states and differences across communities would make little difference. Second, which local or state factors help to explain the availability of different types of resources, including material versus human resources, and innovative forms of social

organization? Third, do state charter school policies help to explain variation in charter schools' average resource levels among the states, after taking into account state-level demographics, overall school funding levels, and the intensity of school accountability regimes? And do state charter policies help to explain the size of the subsector, that is, the total count of charter schools operating within a state?

## **Methods**

### *Analytic overview and data*

We advance the notion that schools are variably effective based on their capacity to acquire and mobilize at least three types of resources: material flows that allow for the hiring and compensation of staff, rich or poor staffing ratios of children per teacher, and funding for particular types of students (e.g., special education or Title I support); human resources, including teachers with varying levels of preservice training and classroom experience, teachers' reported engagement in the school and perceived influence, and participation of parents in school activities and governance; and organizational innovations aimed at shaking free of conventional bureaucratic constraints or supporting students and their families. This was operationally measured in terms of a school's avoidance of labor contracts with a teachers union, incentives for individual teachers linked to their apparent performance, length of the school day, and providing before- or after-school child care. These varieties of resources share the aim of supporting a stronger instructional program, freeing up individual staff to innovate while avoiding regulatory controls, and supporting family involvement.

We drew quantitative measures of these resources from the charter principals and teachers who participated in the SASS survey conducted by NCES during the 1999–2000 school year. This was the first (and only) time that the 1010 charter schools operating in that year, and in the prior year, were included in the SASS survey, conducted periodically and including tens of thousands of staff working in regular public schools as well. Eighty-six percent of this known universe of charter schools operating in one of 32 states fully participated in the study ( $n = 870$  schools), and NCES then calculated sample weights allowing us to generalize to all charter schools operating in 1999–2000 (Gruber et al. 2002). The Bush Administration has since discontinued the charter school portion of the SASS.

To measure local community conditions we compiled data on the wealth and demographic characteristics of the zip codes in which each participating charter school was located. We drew counts and staffing levels of nonprofit organizations for each zip code, as measures of community infrastructure and volunteer activity that may account for levels of charter organizing and resources (US Census Bureau 1999). Finally, we compiled data on state demographics, school spending levels, the intensity of state-led educational accountability reforms, and state policies pertaining to the funding and regulation of charters (Carnoy and Loeb 2002; Education Commission of the States 2003; US Census Bureau 2000).

The descriptive analysis reported below reveals wide variability in charter school resources among schools and states. We first estimated resource levels with ordinary least squares (OLS) regression at the school level, with and without aggregate fixed effects stemming from state membership. Of the original resource measures listed below, we report OLS findings for those 12 for which at least 10% of the total variance could be explained. Then we use hierarchical linear modeling (HLM) techniques to identify which state factors help to explain average levels of charter resources among the states and which help to explain a more equitable distribution of resources among charters within states (where random effects are detectable). We report HLM estimation models for the five resource measures for which state-level factors held statistically significant explanatory power. Little of the total variance in the other seven resource measures



could be attributed to between-state factors; local factors were overwhelmingly associated with between-school differences in resources.

Finally, we briefly report on how these quantitative findings match how charter educators think and talk about resources within their schools. Interviews were conducted in eight California charter schools, varying by type and history, to better understand how principals and teachers conceive of these varying kinds of material, human and organizational resources. These findings are meant to further illuminate key findings from the statistical modeling; this section will not be an exhaustive report from our qualitative substudy, which will appear in a separate article.

### ***Measures of charter school resources***

Our dependent measures of resources were split into the three categories: material, human resources and organizational innovations. Five indicators of material resources were originally drawn from the SASS data set, including the principal's annual salary, the median salary paid to the current teaching staff, an index of three possible fringe benefits provided by the school (housing, meals, transportation) the ratio of students enrolled to part-time teachers employed, and the same ratio but including full-time teachers in the denominator. The latter indicator, however, proved to be unrelated to either local or state predictors and was dropped from the analysis.

Human resources were measured in terms of the average years of experience among teachers employed at each school, the percentage with an emergency, provisional or probationary teaching credential, and index of teachers' reported influence (setting student performance standards, establishing curriculum, determining content of in-service professional development programs, evaluating teachers, hiring new full-time teachers, setting disciplinary policy, deciding how the school budget will be allocated), and an index of parent participation (an additive index, including eight different ways in which parents were involved in the school, as reported by principals).<sup>2</sup>

Organizational innovations included the length of the school day in hours, whether the school operated under a union contract, an index of teacher incentives (recognition from National Board for Professional Teaching Standards certification, excellence in teaching, completion of in-service professional development, pay incentives to recruit or retain teachers to teach in fields of shortage; additive index), and the presence of a before- and/or after-school child care program (a three-point additive index).

### ***Institutional features***

Turning to the local predictors of resource levels, certain organizational features of charter schools may be associated with their capacity to acquire more resources, including whether the school was formerly a regular public school (a conversion public charter), formerly a private school (allowed in some states, a conversion private charter), or a start-up school.

### ***Local community factors***

In order to analyze how school-level resources are linked to the community context of the school, we drew on demographic data for the students being served, including their race and ethnicity, eligibility for free or reduced-price lunch, and identified as having limited English proficiency. We also included US Census Bureau (2000) data for the local community, observed for each zip code in which a sampled charter school was located, including percentages of the population belonging to standard racial and ethnic groups, share of population speaking English or another language at home, median family income, and percentage living below the federal poverty line.

### ***State demographics and policy activism***

Moving to state-level forces that may help to explain charter school resources, we compiled data on the wealth and demographic features for the 32 states in which charter schools were operating, the intensity of education accountability policies that may indicate state activism when it comes to school reform (or regulatory action that might constrain the number and resources of charter schools), and two indices of charter school policies. We also analyzed whether student performance levels were predictive of charter school resources, based on each state's scores on the National Assessment of Educational Progress (NAEP) in 1994 and 1998, as a proxy for demands on the state to improve the public schools. But neither the cross-sectional NAEP scores, nor change between the two data panels, were associated with charter school resource levels.

Demographic features of each state included median household income in 1999, percentage of families living below the federal poverty line, ethnic composition, and total counts of community-based organizations standardized by population (US Census Bureau 1999). We also used the index of the intensity with which states advanced school accountability reforms, as constructed by Carnoy and Loeb (2002). Their 5-point scale accounts for the number of grade levels in which children are tested, the presence of sanctions or rewards for schools and districts, the strength of those repercussions, and the presence of a high school exit exam. Eight charter school policies were drawn from the compendium maintained by the Education Commission of the States (2003). Based on principal components analyses and a simple correlation matrix (given that some policies are dichotomous, present or not present), two charter policy indices were created. The first, which we call Charter Policy 1 (tighter state regulation), combines whether a cap limited the number of charters that could be granted statewide, whether charter schools were exempt from collective bargaining rules, granted full authority over their budgets, or exempt from following a state or district salary schedule for their teachers (5-point additive index). The second index, dubbed Charter Policy 2 (stronger financial support), combines indicators of whether the state provided funding for start-up charters (in addition to federal funding) and whether charter schools were eligible to draw revenues from capital construction bonds (4-point additive index).

## **Quantitative findings**

### ***Descriptive differences between states***

Table 1 provides descriptive statistics for principal variables and all participating charter schools, along with breakdowns for states hosting the most charter schools in the 1999–2000 school year. The mean salary paid to charter principals in that year equaled \$55,248, yet fell to \$46,706 in Arizona charter schools, compared with \$66,642 in California. Staffing ratios vary dramatically among these three states. California charters averaged just under 30 students per full-time teacher employed, compared with 20 students per full-time teacher within Michigan charters. This is not attributable to varying concentrations of elementary versus secondary schools, as seen further down in Table 1. Less than 1% of students received support through federal Title I compensatory education funding, ranging up to 7.3% of children enrolled in Arizona and Michigan charters.

Teacher attributes also varied across these states. Charter teachers in California were more likely to hold a full teaching credential, with about one-third reporting an emergency, probationary or provisional credential, while just over 55% of all charter teachers in Michigan did not hold a full credential. California teachers reported more years of classroom experience and more influence over classroom and school-wide issues. The school day was over 30 minutes longer in Michigan charters on average, compared with charter schools in Arizona and California. Forty-two percent of California's charter schools operated under a labor union contract, compared with just 2% of Arizona charters and 7% in Michigan.



Table 1. Descriptive statistics for charter school resources and organizational innovations for the national school sample, Arizona, California and Michigan (weighted means and *SDs*).

|  | National charter school sample |                    |                    | Between-state differences ( <i>F</i> statistic) |            |           |
|--|--------------------------------|--------------------|--------------------|---|------------|-----------|
|  | Arizona                        | California         | Michigan           | Arizona   | California | Michigan  |
| <b>Dependent variables</b>                       |                                |                    |                    |   |            |           |
| <i>Material resources</i>                        |                                |                    |                    |   |            |           |
| Principal's salary (\$)¹                         | 46,706<br>(13,581)             | 66,642<br>(17,450) | 59,228<br>(12,873) |   |            | 71.65***  |
| Teachers' salary midpoint (\$)                   | 30,588<br>(5,646)              | 42,162<br>(6,837)  | 33,530<br>(5,748)  |   |            | 152.45*** |
| Ratio: students per full-time teachers²          | 22.6<br>(22.6)                 | 29.7<br>(44.0)     | 20.1<br>(10.7)     |   |            | 4.22*     |
| Ratio: students per part-time teachers³          | 76.7<br>(95.9)                 | 230.1<br>(324.7)   | 126.9<br>(110.2)   |   |            | 16.32***  |
| Teacher benefits index (0–3)                     | 2.3<br>(.80)                   | 2.5<br>(.70)       | 2.6<br>(.70)       |   |            | 3.10*     |
| Ratio: students per classroom computer⁴          | 7.6<br>(7.5)                   | 7.8<br>(6.7)       | 7.5<br>(5.4)       |   |            | 0.06      |
| Students receiving Title I services (%)          | 7.3<br>(17.7)                  | 2.6<br>(9.7)       | 7.3<br>(19.1)      |   |            | 4.00*     |
| <i>Attributes of human resources</i>             |                                |                    |                    |   |            |           |
| Teachers' experience teaching full time (years)⁵ | 6.1<br>(5.6)                   | 7.9<br>(7.3)       | 5.2<br>(4.0)       |   |            | 9.18***   |
| Teachers without credential (%)⁵                 | 49.8<br>(37.1)                 | 32.8<br>(36.6)     | 55.7<br>(31.9)     |   |            | 14.11***  |
| Principals' reported influence (1–5)⁶            | 4.6<br>(.57)                   | 4.4<br>(.61)       | 4.7<br>(.42)       |   |            | 7.90***   |
| Teachers' reported influence (1–5)⁵              | 3.0<br>(0.80)                  | 3.3<br>(.78)       | 3.0<br>(.75)       |   |            | 6.17**    |
| Avenues for parent participation (0–9)           | 6.43<br>(2.08)                 | 7.5<br>(1.7)       | 6.1<br>(1.7)       |   |            | 39.56***  |

Table 1. (Continued).

|   | National charter school sample |                    |                    |  | Between-state differences ( <i>F</i> statistic) |          |
|---|--------------------------------|--------------------|--------------------|--|---|----------|
|   | Arizona                        | California         | Michigan           |  |   |          |
| <i>Organizational innovations</i>                                   |                                |                    |                    |  |   |          |
| Length of normal school day (hours)                                 | 6.3<br>(1.04)                  | 5.9<br>(1.15)      | 6.6<br>(0.73)      |  |   | 17.13*** |
| Teacher incentives scale (0-4)                                      | 1.05<br>(1.01)                 | 0.60<br>(0.88)     | 1.09<br>(1.06)     |  |   | 9.81***  |
| Union agreement (% of schools, yes)                                 | 2<br>(10)                      | 42<br>(.50)        | 7<br>(.25)         |  |   | 75.30*** |
| Child care program scale (0-2)                                      | 1.1<br>(0.82)                  | 1.1<br>(.79)       | 1.1<br>(.85)       |  |   | 0.52     |
| <b>Predictors</b>   |                                |                    |                    |  |   |          |
| <i>Community attributes</i>   |                                |                    |                    |  |   |          |
| Population of zip code <sup>7</sup>                                 | 28,483<br>(18,729)             | 35,057<br>(23,699) | 30,523<br>(15,213) |  |   | 3.52*    |
| Median family income (\$)⁸  | 48,156<br>(20,411)             | 54,136<br>(27,112) | 45,567<br>(14,949) |  |   | 11.61*** |
| <i>Community-based organizations (in zips with charter schools)</i> |                                |                    |                    |  |   |          |
| Count of organizations  | 19.2<br>(15.7)                 | 16.4<br>(10.0)     | 23.4<br>(14.3)     |  |   | 28.28*** |
| Count of employees  | 247<br>(275)                   | 209<br>(221)       | 281<br>(237)       |  |   | 9.90***  |
| Religious organizations in zip code (per 10,000 residents)          | 6.2<br>(15.3)                  | 3.6<br>(2.9)       | 6.3<br>(4.1)       |  |   | 29.59*** |
| <i>Student ethnicity (%)</i>  |                                |                    |                    |  |   |          |
| Asian   | 2.2<br>(0.6)                   | 5.4<br>(.8)        | 0.4<br>(.01)       |  |   | 43.23*** |

Table 1. (Continued).

|   | National charter school sample | Arizona        | California     | Michigan       | Between-state differences ( <i>F</i> statistic) |
|---|--------------------------------|----------------|----------------|----------------|---|
| Black   | 27.1<br>(34.6)                 | 7.9<br>(14.6)  | 10.5<br>(16.8) | 43.4<br>(43.0) | 82.84***  |
| Latino  | 17.5<br>(24.4)                 | 25.0<br>(24.8) | 27.9<br>(26.2) | 5.0<br>(12.9)  | 43.19***  |
| <i>Organizational attributes</i> (% of schools in sample) |                                |                |                |                |   |
| Elementary schools  | 58.0<br>(49.4)                 | 42.3<br>(49.5) | 63.0<br>(48.5) | 61.5<br>(48.9) | 9.66***   |
| Secondary schools   | 23.2<br>(42.3)                 | 35.3<br>(47.9) | 21.5<br>(41.3) | 23.6<br>(42.6) | 4.84**  |
| Combined grade levels                                     | 18.8<br>(39.1)                 | 22.4<br>(41.8) | 15.5<br>(36.3) | 14.9<br>(35.8) | 2.01  |
| Start-up charter school                                   | 73.6<br>(44.1)                 | 78.3<br>(41.2) | 55.7<br>(49.9) | 76.4<br>(42.6) | 11.76***  |
| Public conversion charter school                          | 16.5<br>(37.1)                 | 5.3<br>(22.4)  | 43.3<br>(49.7) | 6.5<br>(24.7)  | 62.61***  |
| Private conversion charter school                         | 9.9<br>(29.8)                  | 16.4<br>(37.1) | 1.0<br>(1.0)   | 17.2<br>(37.8) | 11.56***  |
| Privately managed   | 31<br>(46)                     | 42<br>(49)     | 16<br>(37)     | 58<br>(50)     | 27.73***  |
| Total enrollment (count)                                  | 264<br>(297)                   | 193<br>(194)   | 482<br>(525)   | 267<br>(200)   | 33.17***  |
| Charter school sample ( <i>N</i> )                        | 1,010                          | 207            | 133            | 135            |   |
| Total charter schools per 10,000 residents <sup>7</sup>   |                                | 4.3            | 0.6            | 1.5            |   |

Notes: 1. Useable *N* for this variable equals 906 cases. 2. *N* = 1,001. 3. *N* = 591. 4. *N* = 1,005. 5. *N* = 847. 6. *N* = 928. 7. For 1999–2000 school year. \**p* < .05, \*\**p* < .01, \*\*\**p* < .001.

Turning to possible predictors of charter school resources, we see several between-state differences. The median income among zip codes in which California charters were situated was about \$5000 higher than zip codes hosting charters in Arizona and Michigan without adjusting for between-state differences in prices (cost of living). Michigan zip codes displayed more community-based organizations (CBOs), suggesting stronger neighborhood infrastructure, compared with the other two states, including a higher count of churches.

Michigan charter schools served a much higher share of black students (averaging 43% African American enrollments), compared with Arizona and California charters (8 and 10%, black enrollments, respectively). The latter two states served higher proportions of Latino students, each over one-quarter of all students were Latino on average. And the organizational mix of charters also varied among states. Sixty-three percent of all California charters were elementary schools, similar to 61% in Michigan but in contrast to 42% in Arizona. California charters showed a distinct mix in that 43% were public conversion charter schools. But in Arizona and Michigan just 5 and 6% were public conversions, respectively.

Just 16% of California charter schools were managed by private firms, compared with 42 and 58% privately managed in Arizona and Michigan, respectively. Charter schools in California were much larger in terms of student enrollments (averaging 482 students), compared with the other two states, perhaps due to the higher proportion of public conversion charter schools.

#### ***Attributing variance to state and local levels***

HLM techniques provide a convenient method for apportioning the variance in each resource outcome to between-state or between-school sources (Bryk and Raudenbush 1992). Small to modest shares of the total variance were attributable to aggregate differences among states. Given the variance in the share of charter schools' teachers working without a full credential, for example, fully 82% was attributable to between-school differences and just 18% to between-state factors. This apportioning was similar for years of teaching experience.<sup>3</sup> State factors were a bit more influential in explaining staffing levels: 27% of the total variance in students enrolled per part-time teacher was explained by between-state differences, yet just 3% of variance in the ratio of students per full-time teacher was linked to state-level factors. The likelihood of operating under a union contract (a dichotomous dependent variable) was sensitive to state membership. But for the remaining resource measures not more than 15% of the variance in this probability was attributable to between-state factors.

#### ***School attributes and local factors that account for resource levels***

We report OLS estimations for each of 12 resource variables for which at least 10% of the variance could be explained, whether by local or state-level factors. For each resource measure we first include school or zip code (demographic) attributes as predictors. Then we add dummy variables for state membership to estimate the total fixed effect and school size (which was collinear with being a public conversion or secondary school).

Table 2, for instance, reports OLS results for estimating principal salary levels across the 861 (weighted) charter schools for which complete data were available. Salary levels were higher within charter schools situated in zip codes with larger populations and higher median income, representing more urban settings with higher price structures. Principal salaries were higher in public conversion charters (compared with start-ups, the base), and in schools serving greater proportions of black students. When we entered dummy variables for all states (excluding Arizona, the base) and enrollment size, the share of variance explained (adjusted  $r^2$ ) rose from

8 to 37%, confirming that state differences do sometimes matter in explaining salary levels for principals.

Results for estimating the median teacher's salary among charters differ a bit. Teacher salaries were higher where charter schools were situated in zip codes with higher income (before taking into account state income structure). Schools serving higher shares of Asian, black and Latino children all paid higher salaries, compared with those serving more white students. Public conversion charters paid much higher salaries (\$5167 higher per year), compared with start-ups. Privately managed charters paid teachers \$1829 less than publicly managed ones. Here too, when we entered dummy variables for state membership and enrollment size, the share of variance explained rose from 19 to 40%. Still, just over one-fifth of all variance in teacher salaries can be explained by state factors.

Certain charter schools tend to rely less on part-time teachers, including public conversions and those serving more black or Latino students, as do privately managed charters after we take into account state fixed effects.<sup>4</sup> We could not explain more than 12% of the variance in the teacher benefits index. Schools serving Latino students tended to provide richer benefits, as did larger schools and privately managed charters.

Turning to specific human resources, our ability to estimate the share of teachers working without a full credential is stronger than estimating years of classroom experience (Table 3). Less credentialed teachers are more concentrated in zip codes with larger populations and in schools serving higher concentrations of black students (as well as charters serving more Latino students when we take into account state fixed effects and school size). Secondary schools rely more on less credentialed teachers, while public conversion charters rely on them less. State fixed effects add less to the total variance explained, with the  $r^2$  rising from 11 to 17%.

Importantly, teachers working in schools serving higher proportions of Asian students reported stronger perceived influence over classroom and school issues, while those teaching in predominately black schools reported less influence, as did teachers working in larger charter schools. Remember that less credentialed teachers tend to be concentrated in urban and predominately black charter schools, so the negative effect on perceived influence could stem from more challenging working conditions and less experience in tackling classroom and school issues.

More numerous avenues of parent participation were structured by charter schools situated in more populated zip codes and in communities hosting more churches, perhaps indicating stronger neighborhood organizing. Secondary school principals report fewer structured avenues of parent participation, compared with elementary principals. Those principals heading public conversion charters also report more avenues for parent participation, compared with start-up charters. Principals in privately managed charters report fewer avenues, compared with publicly managed charter schools. Adding the fixed effects of state membership and enrollment size raises the share of variance explained from 18 to 26%.

Turning to organizational innovations, we first estimate the length of the school day (Table 4), finding that charter schools serving higher shares of black children had significantly longer school days, while secondary schools had shorter days. Adding state fixed effects added just 4% to the variance explained, while enrollment size is positively related to longer school days. Charters serving higher proportions of black or Latino students provided more individual incentives for teachers (after taking into account state fixed effects), as did larger schools. Privately managed charters also reported more teacher incentives prior to entering state fixed effects, which suggests that these charters are concentrated in particular states.

When estimating the absence of a union contract with teachers (in a logistic regression) we found that secondary schools and public conversions are more likely to have a contract than elementary schools (indicated by negative coefficients), while privately managed charters are significantly less likely to operate under a union agreement. State membership does boost the

Table 2. OLS estimation of material resources from school-level predictors and aggregate state fixed effects ( $\beta$  coefficients and SEs reported).

| Predictors  | Material resources (dependent variables): |                   |                         |                    |  |                    |                        |                     |
|---|---|-------------------|-------------------------|--------------------|--|--------------------|------------------------|---------------------|
|   | Principal's salary                        |                   | Teacher salary midpoint |                    | Ratio: students per part-time teachers |                    | Teacher benefits index |                     |
|   | w/o states                                | with states       | w/o states              | with states        | w/o states                             | with states        | w/o states             | with states         |
| <i>Community attributes</i>                       |   |                   |                         |                    |  |                    |                        |                     |
| Population of zip code                            | 8.1e-02*<br>(.03)                         | 2.7e-02<br>(.03)  | 2.2e-021<br>(.01)       | .139e-02<br>(.01)  | 4.0e-04<br>(.0001)                     | 1.9e-04<br>(.0001) | 1.4e-06<br>(.00001)    | 1.5e-07<br>(.00001) |
| Median family income                              | 7.7e-02*<br>(.03)                         | -3.1e-02<br>(.02) | 3.9e02***<br>(.01)      | 8.9e-03<br>(.01)   | 8.7e-04*<br>(.0003)                    | 6.4e-04<br>(.0004) | 2.1e-06<br>(.00001)    | 7.7e-07<br>(.00001) |
| Religious organizations<br>(per 10,000 residents) | -12.6<br>(47.5)                           | 30.1<br>(40.3)    | 6.9<br>(14.31)          | -12.4<br>(12.90)   | -66.3<br>(4855)                        | 343.3<br>(4875)    | 15.3<br>(16.1)         | 4.6<br>(16.1)       |
| <i>Student ethnicity (%)</i>                      |   |                   |                         |                    |  |                    |                        |                     |
| Asian   | 20283<br>(10795)                          | 17641<br>(10322)  | 20397***<br>(3951)      | 15701***<br>(3901) | 21.2<br>(116.7)                        | 63.6<br>(132.3)    | -54<br>(.44)           | -60<br>(.48)        |
| Black   | 8329***<br>(1966)                         | 1886<br>(1916)    | 3062***<br>(699)        | 1625*<br>(720)     | 63.5*<br>(25.0)                        | 64.0*<br>(28.8)    | .11<br>(.08)           | .20*<br>(.09)       |
| Latino  | 4585<br>(2661)                            | 948<br>(2508)     | 3040**<br>(962)         | 2117*<br>(947)     | 118.7**<br>(37.7)                      | 127.1**<br>(40.4)  | .24*<br>(.11)          | .34**<br>(.12)      |
| <i>Organizational attributes</i>                  |   |                   |                         |                    |  |                    |                        |                     |
| Secondary school                                  | -754<br>(1527)                            | 1032<br>(1327)    | 396<br>(544)            | 765<br>(494)       | -21.2<br>(18.2)                        | -29<br>(18.8)      | -2.8e-02<br>(.06)      | -4.5e-02<br>(.06)   |
| Combined grade levels                             | (-2853)<br>(1632)                         | -551<br>(1388)    | -1815**<br>(589)        | -984<br>(524)      | -19.7<br>(20.3)                        | -11.6<br>(20.4)    | -19**<br>(.07)         | -16*<br>(.06)       |
| Public conversion                                 | 6361***<br>(1680)                         | -1295<br>(1651)   | 5167***<br>(612)        | 2905***<br>(623)   | 149.9***<br>(20.7)                     | 92.1***<br>(24.5)  | 7.1e-02<br>(.07)       | -2.4e-02<br>(.08)   |
| Private conversion                                | -8704***<br>(2050)                        | -5406**<br>(1758) | -3216***<br>(740)       | -1720**<br>(664)   | -28.7<br>(25.5)                        | -22.4<br>(25.8)    | -34***<br>(.08)        | -28***<br>(.08)     |



Table 2. (Continued).

| Predictors                   | Material resources (dependent variables): |                   |                         |                  |  |                 |                        |                       |
|------------------------------|---|-------------------|-------------------------|------------------|--|-----------------|------------------------|-----------------------|
|                              | Principal's salary                        |                   | Teacher salary midpoint |                  | Ratio: students per part-time teachers |                 | Teacher benefits index |                       |
|                              | w/o states                                | with states       | w/o states              | with states      | w/o states                             | with states     | w/o states             | with states           |
| Privately managed            | -2462<br>(1351)                           | -1951<br>(1196)   | -1829***<br>(480)       | -603<br>(444)    | 30.8<br>(17.0)                         | 36.0*<br>(17.6) | .13*<br>(.05)          | .14**<br>(.05)        |
| Total enrollment             | -   | 22.4***<br>(2.01) | -                       | 2.28**<br>(0.75) | -                                      | -               | -                      | 4.6e-04***<br>(.0001) |
| <i>Statistics for model:</i> |   |                   |                         |                  |  |                 |                        |                       |
| F-statistic                  | 7.89***                                   | 14.03***          | 21.72***                | 17.09***         | 7.06***                                | 4.31***         | 4.35***                | 4.21***               |
| DF                           | 11,849                                    | 39,821            | 11,946                  | 39,918           | 11,554                                 | 34,531          | 11,946                 | 39,918                |
| Adjusted r <sup>2</sup>      | .08                                       | .37               | .19                     | .40              | .11                                    | .17             | .04                    | .12                   |

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Table 3. OLS estimation of qualities of human resources from school-level predictors and aggregate state fixed effects ( $\beta$  coefficients and SEs reported).

| Predictors  | Material resources (dependent variables): |                      |   |                       |                              |                      |                                  |                        |
|---|---|----------------------|---|-----------------------|------------------------------|----------------------|----------------------------------|------------------------|
|   | Teachers' years of experience             |                      | Percentage, teachers without credential |                       | Teachers' reported influence |                      | Avenues for parent participation |                        |
|   | w/o states                                | with states          | w/o states                              | with states           | w/o states                   | with states          | w/o states                       | with states            |
| <i>Community attributes</i>                       |   |                      |   |                       |                              |                      |                                  |                        |
| Population of zip code                            | -1.8e-05<br>(.00001)                      | -1.4e-05<br>(.00002) | .42***<br>(.05)                         | 9.2e-07<br>(.000005)  | -5.6e-07<br>(.000007)        | 2.8e-07<br>(.000009) | 1.0e-05**<br>(.00002)            | 7.5e-06*<br>(.000003)  |
| Median family income                              | -6.4e-06<br>(.00001)                      | -9.3e-06<br>(.00002) | -9.1e-07<br>(.000001)                   | -9.5e-07<br>(.000001) | 1.7e-06<br>(.000003)         | 2.2e-06<br>(.000007) | 4.7e-06<br>(.000003)             | -2.31e-06<br>(.000008) |
| Religious organizations<br>(per 10,000 residents) | 332**<br>(115)                            | 376**<br>(121)       | -10.29<br>(7.62)                        | -4.9<br>(7.98)        | 22.2<br>(16.4)               | 4.64<br>(17.3)       | 92.2*<br>(39.7)                  | 85.7*<br>(39.3)        |
| <i>Student ethnicity (%)</i>                      |   |                      |   |                       |                              |                      |                                  |                        |
| Asian   | -.60<br>(3.34)                            | 3.9e-02<br>(3.81)    | -3.3e-02<br>(.22)                       | .30<br>(.25)          | 1.73***<br>(.48)             | 1.85***<br>(.54)     | 1.81<br>(1.09)                   | -.11<br>(1.19)         |
| Black   | -.97<br>(.61)                             | -1.18<br>(.72)       | .17***<br>(.04)                         | .18***<br>(.05)       | -.48***<br>(.09)             | -.49***<br>(.10)     | .36*<br>(.19)                    | .32<br>(.22)           |
| Latino  | .53<br>(.86)                              | .18<br>(.97)         | .14*<br>(.06)                           | .18**<br>(.06)        | -.21<br>(.12)                | -4.3e-02<br>(.14)    | .18<br>(.27)                     | -.29*<br>(.29)         |
| <i>Organizational attributes</i>                  |   |                      |   |                       |                              |                      |                                  |                        |
| Secondary school                                  | -4.0<br>(.47)                             | -3.5e-02<br>(.49)    | .09**<br>(.03)                          | .09**<br>(.03)        | .10<br>(.07)                 | .08<br>(.07)         | -1.89***<br>(.15)                | -1.74***<br>(.15)      |
| Combined grade levels                             | -.32<br>(.52)                             | -.40<br>(.52)        | .07*<br>(.03)                           | .06<br>(.03)          | -3.3e-04<br>(.07)            | .03<br>(.07)         | -.91***<br>(.16)                 | -.78***<br>(.16)       |
| Public conversion                                 | 2.9***<br>(.52)                           | 2.0***<br>(.62)      | -.20***<br>(.04)                        | -.11**<br>(.04)       | -.005<br>(.07)               | .09<br>(.09)         | .45**<br>(.17)                   | -.02<br>(.19)          |
| Private conversion                                | .13<br>(.64)                              | -5.3e-02<br>(.65)    | .10*<br>(.04)                           | .09*<br>(.04)         | -.17<br>(.09)                | -.17<br>(.09)        | -.24<br>(.21)                    | .08<br>(.20)           |

Table 3. (Continued).

|                              |                               | Material resources (dependent variables): |   |                      |                              |                         |                                  |                    |
|------------------------------|-------------------------------|---|---|----------------------|------------------------------|-------------------------|----------------------------------|--------------------|
| Predictors                   | Teachers' years of experience |   | Percentage, teachers without credential |                      | Teachers' reported influence |                         | Avenues for parent participation |                    |
|                              | w/o states                    | with states                               | w/o states                              | with states          | w/o states                   | with states             | w/o states                       | with states        |
| Privately managed            | -.81<br>(.64)                 | -.73<br>(.45)                             | .04<br>(.03)                            | .01<br>(.03)         | -.09<br>(.06)                | -.07<br>(.06)           | -.41**<br>(.13)                  | -.25<br>(.13)      |
| Total enrollment             | -                             | 6.3e-05<br>(.001)                         | -                                       | -5.9e-05<br>(.00006) | -                            | -5.2e-04***<br>(.00004) | -                                | .001***<br>(.0002) |
| <i>Statistics for model:</i> |                               |   |   |                      |                              |                         |                                  |                    |
| F-statistic                  | 5.80***                       | 3.27***                                   | 9.71***                                 | 5.15***              | 7.13***                      | 3.82***                 | 20.49***                         | 9.71***            |
| DF                           | 11,790                        | 39,762                                    | 11,790                                  | 39,762               | 11,790                       | 39,762                  | 11,946                           | 39,918             |
| Adjusted r <sup>2</sup>      | .06                           | .10                                       | .11                                     | .17                  | .08                          | .12                     | .18                              | .26                |

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Table 4. OLS estimation of organizational innovations from school-level predictors and aggregate state fixed effects ( $\beta$  coefficients and SEs reported)<sup>1</sup>.

| Predictors                                     | Material resources (dependent variables): |                    |                         |                   |                                |                 |                                   |                  |
|--|---|--------------------|-------------------------|-------------------|--------------------------------|-----------------|-----------------------------------|------------------|
|  | Length of school day (hours)              |                    | Teacher incentive index |                   | No union contract <sup>2</sup> |                 | Before/After-school program index |                  |
|  | w/o states                                | with states        | w/o states              | with states       | w/o states                     | with states     | w/o states                        | with states      |
| <i>Community attributes</i>                    |   |                    |                         |                   |                                |                 |                                   |                  |
| Population of zip code                         | 1.5e-07<br>(.00)                          | 2.2e-07<br>(.00)   | 6.9e-06***<br>(.00)     | 6.1e-06<br>(.00)  | .00<br>(.00)                   | .00<br>(.00)    | 2.2e-06<br>(.00)                  | 2.0e-06<br>(.00) |
| Median family income                           | -1.2e-06<br>(.00)                         | -3.3e-06+<br>(.00) | -4.7e-07<br>(.00)       | -3.5e-07<br>(.00) | .00<br>(.00)                   | .00<br>(.00)    | 1.8e-06<br>(.00)                  | 2.1e-07<br>(.00) |
| Religious organizations (per 10,000 residents) | -6.3<br>(21.0)                            | -15.5<br>(21.3)    | 29.2<br>(20.7)          | 35.4<br>(21.1)    | -64.0<br>(45.7)                | -22.3<br>(64.6) | -21.5<br>(16.2)                   | -12.7<br>(16.6)  |
| <i>Student ethnicity (%)</i>                   |   |                    |                         |                   |                                |                 |                                   |                  |
| Asian  | 7.0e-02<br>(.58)                          | .22<br>(0.64)      | -.84<br>(.58)           | -.78<br>(.64)     | -2.69<br>(1.40)                | .80<br>(2.09)   | 1.9*<br>(.45)                     | 1.2*<br>(.50)    |
| Black  | 0.35***<br>(.10)                          | .13<br>(0.12)      | .16<br>(.10)            | .27*<br>(.12)     | .39<br>(.36)                   | -.38<br>(.47)   | .52***<br>(.08)                   | .49***<br>(.09)  |
| Latino   | -6.9e-02<br>(.14)                         | -.12<br>(.16)      | .30*<br>(.14)           | .41**<br>(.15)    | -.85*<br>(.40)                 | -.87<br>(.54)   | .47***<br>(.11)                   | .40***<br>(.12)  |
| <i>Organizational attributes</i>               |   |                    |                         |                   |                                |                 |                                   |                  |
| Secondary school                               | -.59***<br>(.08)                          | -.61***<br>(.09)   | .04<br>(.08)            | .04<br>(.08)      | -.47*<br>(.22)                 | -.70*<br>(.27)  | -.54***<br>(.06)                  | -.54***<br>(.06) |
| Combined grade levels                          | -.17*<br>(.08)                            | -.22*<br>(.09)     | .07<br>(.09)            | .05<br>(.09)      | .49<br>(.32)                   | .17<br>(.35)    | -.22***<br>(.07)                  | -.22***<br>(.07) |
| Public conversion                              | -.15<br>(.09)                             | -.14<br>(.10)      | -.04<br>(.09)           | -.05<br>(.10)     | -1.06***<br>(.22)              | -.81**<br>(.29) | .09<br>(.07)                      | .05<br>(.08)     |
| Private conversion                             | .04<br>(.11)                              | .08<br>(.11)       | .04<br>(.11)            | -.04<br>(.11)     | .87<br>(.50)                   | .58<br>(.56)    | .23**<br>(.08)                    | .28***<br>(.08)  |

Table 4. (Continued).

| Predictors                   | Material resources (dependent variables): |                     |                         |                     |                                |                       |                                   |                    |
|------------------------------|---|---------------------|-------------------------|---------------------|--------------------------------|-----------------------|-----------------------------------|--------------------|
|                              | Length of school day (hours)              |                     | Teacher incentive index |                     | No union contract <sup>2</sup> |                       | Before/After-school program index |                    |
|                              | w/o states                                | with states         | w/o states              | with states         | w/o states                     | with states           | w/o states                        | with states        |
| Privately managed            | .03<br>(.07)                              | .02<br>(.07)        | .28***<br>(.07)         | .14<br>(.07)        | 1.22***<br>(.29)               | .92**<br>(.32)        | -.02<br>(.05)                     | -.04<br>(.06)      |
| Total enrollment             | —   | 4.2e-04***<br>(.00) | —                       | 5.4e-04***<br>(.00) | —                              | .00<br>(.00)          | —                                 | 3.0e-04**<br>(.00) |
| <i>Statistics for model:</i> |   |                     |                         |                     |                                |                       |                                   |                    |
| F-statistic                  | 8.04***                                   | 4.84***             | 5.08***                 | 3.98***             | 104.1*** <sup>3</sup>          | 255.1*** <sup>3</sup> | 15.62***                          | 6.13***            |
| DF                           | 11, 946                                   | 39, 918             | 11, 946                 | 39, 918             | 11                             | 39                    | 11, 946                           | 39, 918            |
| Adjusted r <sup>2</sup>      | .08                                       | .12                 | .05                     | .10                 | .10 <sup>4</sup>               | .23 <sup>4</sup>      | .14                               | .17                |

<sup>†</sup> $p < .05$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

1. Standard errors abbreviated at 0.00 when value equals less than 0.00001.

2. Logistic regression reported. In first model, 86% of cases predicted correctly, rising to 88% in the second model.

3. Chi-square statistic.

4. Cox and Snell r<sup>2</sup> statistic.

share of variance explained from 10 to 23% (pseudo- $r^2$ ). Finally, we found that charters serving larger shares of Asian, black or Latino students were more likely to offer before- and/or after-school child care programs, as were elementary schools, larger schools and private conversions.

### *Explaining the charter sector's size among states*

As we move to examine the influence of state-level factors on charter resources, one related issue comes into focus. What state factors account for wide variability in the mere count of charter schools operating across the states? Fully 222 charter schools were operating in Arizona in the 1999–2000 school year, ranging down to just one charter school in Mississippi and Nevada. California hosted 210 charters that year; Texas, 168; Michigan, 146; Florida, 109 (US Department of Education, 2000). Remember that not all charter schools participated in the SASS study. We built two state-level models that help to account for the wide variation in the charter sector's size across the states (Table 5).

Model 1 estimates the count of charters operating among states from demographic features of the 32 participating states. Only the share of state population which is Latino was significantly associated with a higher count of charter schools, likely an artifact stemming from the high counts of charter schools in Arizona, California and Texas.

Table 5. OLS estimation of total number of charter schools operating in 1999–2000 among states ( $\beta$  coefficients and *SDs* reported,  $n = 32$  states).

|  | Regressing count of charter schools on two sets of predictors: |                               |
|--|--|-------------------------------|
|  | MODEL 1  | MODEL 2                       |
|  | <i>State demographics</i>                                      | <i>Regulatory environment</i> |
| <b>State demographic predictors</b>                                      |  |                               |
| Total state population (control)   | 2.66<br>(3.02)   | -1.77<br>(2.87)               |
| Median household income (\$)   | 1.3e-03<br>(2.1e-03)   | -                             |
| Ethnicity of state residents (%)   |  |                               |
| Black  | .11<br>(.89)   | -                             |
| Latino   | 2.98**<br>(1.05)   | -                             |
| <b>Regulatory environment predictors</b>                                 |  |                               |
| Intensity of accountability policies (index)                             | -  | 10.40<br>(6.59)               |
| Charter Policy Index 1 – cap on number, controls on personnel and budget | -  | -16.2*<br>(7.7)               |
| Charter Policy Index 2 – state resources for charter schools             | -  | 25.6**<br>(9.2)               |
| F-value  | 2.28+  | 3.97*                         |
| DF   | 4, 27  | 4, 26                         |
| Adjusted $r^2$   | .14  | .28                           |

+ $p < .09$ , \* $p < .05$ , \*\* $p < .01$ .



In Model 2 we removed all but the state population size, given the modest number of degrees of freedom, and examined relationships with state policies. The intensity of state accountability policies is positively related with a higher count of charter schools but fails to reach statistical significance. Both charter policy indices are significantly predictive. Charter Policy 1 is negatively related to the count of operating charter schools, as we expected, given that one element of this index is the presence of a state cap on the number of charters that is allowable. The Charter Policy 2 index (financial support) is also positively associated with the count of operating charter schools.

### *State factors that account for resource levels*

Next, we examined which specific state-level factors might be associated with higher or lower resource levels. With just 27 states having complete data for multilevel analyses, we built HLM models focusing on possible fixed effects in a parsimonious fashion. Our procedure for these multilevel estimation models aimed to identify between-state factors—observed as significant across models—that further account for resource differences among charter schools. Less weight should be given to state factors that display inconsistent associations with the different measures of resources and organizational innovation.

We employed a consistent procedure for testing for possible state-level effects pertaining to each resource outcome. First, we ran a random-intercept model to determine which school-level predictors (at level<sub>1</sub>) remained statistically significant. Those that were not significantly related were dropped from the model. Second, a random-slope model was run to see whether the regression slopes that associated a school-level predictor to resource levels were significantly different across states (at level<sub>2</sub>). For example, if the magnitude of the association between community-level (zip code) wealth and charter teacher salary levels varies among schools, then state-level predictors may condition the influence of community wealth (and suggests an equalizing effect of charter school or other educational policies). Only those slopes that showed significant random effects were retained. Third, state-level predictors were entered and retained if statistically significant. We always retained the state's median family income (and zip code level median family income) in all models to control on wealth and price differences among states. To be consistent, predictors that were statistically significant (at  $p < .10$ ) at any step were retained in the final reduced model even though they were no longer significant in the presence of other predictors (as you see in Tables 6 and 7). We report final HLM models for the six resource outcomes for which state-level predictors contributed explanatory power.

Table 6 reports on the resulting HLM models when estimating material resources. In estimating principal salary levels we see (in column A) that mean salaries are higher in states with higher median income and those with a higher percentage of non-English speakers (although the latter coefficient falls short of significance in this final model). Salaries remain lower in rural schools (suburban charters being the base) and in private conversions. Principal salaries remain higher in charters serving a higher proportion of black students, but this relationship is much weaker among charters situated in wealthier and predominately white states, and in states that spend more on education. This suggests that larger urban states with more active state governments host charters that have more similar salary levels across communities.

This pattern is somewhat similar to the median charter teacher's salary, as seen in column B. This salary level is higher in wealthier states that spend more on the education sector in general. Yet central city charters pay the median teacher more, and this relationship is stronger in wealthier states. On the other hand states with stronger financial support for charters (Charter Policy 2) display more equal salary structures between charter teachers in central city and suburban schools (again, the base). Salaries remain higher in conversion charters and lower in

Table 6. State and local factors that account for material resources among charter schools (HLM intercepts and slope estimations from 27 states with sufficient data).

|  | Principal's salary     |     | Teacher's salary      |     | Benefits index        |     |
|--|------------------------|-----|-----------------------|-----|-----------------------|-----|
|  | Coefficient<br>(SE)    | DF  | Coefficient<br>(SE)   | DF  | Coefficient<br>(SE)   | DF  |
| For between-state intercepts ( $\beta_0$ )     |                        |     |                       |     |                       |     |
| Intercept ( $\gamma_{00}$ )                    | 54344.4***<br>(1775.7) | 24  | 36083.9***<br>(683.1) | 23  | 2.42***<br>(0.08)     | 22  |
| State's median family income ( $\gamma_{01}$ ) | 0.89***<br>(0.24)      | 24  | 0.14*<br>(0.06)       | 23  | -.001<br>(.0001)      | 22  |
| Percentage pop., non-English ( $\gamma_{02}$ ) | 213.9<br>(132.7)       | 24  | 73.0<br>(60.9)        | 23  | -.01+<br>(0.005)      | 22  |
| Ed. spending per capita                        | -                      |     | 5.16*<br>(2.09)       | 23  | 0.001*<br>(0.0003)    | 22  |
| Charter Policy 1 (tight regulation)            | -                      |     | -                     |     | -0.15***<br>(0.04)    | 22  |
| For zip median family income ( $\beta_1$ )     |                        |     |                       |     |                       |     |
| Intercept ( $\gamma_{10}$ )                    | -0.03+<br>(0.02)       | 834 | 0.01<br>(0.01)        | 836 | .000002*<br>(.000001) | 836 |
| For churches in zip per capita ( $\beta_1$ )   |                        |     |                       |     |                       |     |
| Intercept ( $\gamma_{20}$ )                    | 186453.6<br>(120825.3) | 834 | -                     |     | 10.8*<br>(5.1)        | 836 |
| For central city charter, dummy ( $\beta_3$ )  |                        |     |                       |     |                       |     |
| Intercept ( $\gamma_{30}$ )                    | 612.2<br>(881.9)       | 834 | 1522.9*<br>(664.5)    | 23  | -.09<br>(.06)         | 836 |
| State's median family income                   | -                      |     | 0.26*<br>(0.09)       | 23  | -                     |     |
| Percentage pop., non-English speaking          | -                      |     | -46.2<br>(31.9)       | 23  | -                     |     |

Table 6. (Continued).

|   | Principal's salary     |     | Teacher's salary      |     | Benefits index       |     |
|---|------------------------|-----|-----------------------|-----|----------------------|-----|
|   | Coefficient<br>(SE)    | DF  | Coefficient<br>(SE)   | DF  | Coefficient<br>(SE)  | DF  |
| Charter Policy 2 (financial support)      | -                      |     | -1256*<br>(512.9)     | 23  | -                    |     |
| For rural charter, dummy ( $\beta_4$ )    |                        |     |                       |     |                      |     |
| Intercept ( $\gamma_{40}$ )               | -8015.6***<br>(1286.6) | 834 | -1499.1*<br>(637.2)   | 836 | -                    |     |
| For school enroll. % black ( $\beta_5$ )  |                        |     |                       |     |                      |     |
| Intercept ( $\gamma_{50}$ )               | 9505.0*<br>(3426.7)    | 20  | -                     |     | -11<br>(.16)         | 22  |
| % state pop., white                       | -1734.1**<br>(552.7)   | 20  | -                     |     | -                    |     |
| % pop., non-English speaking              | -643.9<br>(481.0)      | 20  | -                     |     | -01<br>(.009)        | 22  |
| State median income                       | -0.72+<br>(0.38)       | 20  | -                     |     | .00006**<br>(.00002) | 22  |
| State ed. spending per capita             | -14.5<br>(9.21)        | 20  | -                     |     | -002**<br>(.0005)    | 22  |
| Charter Policy 2 (financial support)      | -1285.7<br>(2425.1)    | 20  | -                     |     | .37***<br>(.09)      | 22  |
| For school enroll. % Asian ( $\beta_6$ )  |                        |     |                       |     |                      |     |
| Intercept ( $\gamma_{60}$ )               | 16015.6*<br>(6280.9)   | 834 | 12297.0**<br>(4606.8) | 836 | -                    |     |
| For school enroll. % Latino ( $\beta_7$ ) |                        |     |                       |     |                      |     |
| Intercept ( $\gamma_{70}$ )               | -                      |     | -                     |     | .49**<br>(.15)       | 836 |

Table 6. (Continued).

|  | Principal's salary     |     | Teacher's salary      |     | Benefits index      |     |
|--|------------------------|-----|-----------------------|-----|---------------------|-----|
|  | Coefficient<br>(SE)    | DF  | Coefficient<br>(SE)   | DF  | Coefficient<br>(SE) | DF  |
| For public conversion, dummy ( $\beta_8$ )         |                        |     |                       |     |                     |     |
| Intercept ( $\gamma_{80}$ )                        | -1204<br>(2281.1)      | 23  | 3211.1***<br>(644.9)  | 836 | -                   |     |
| State median income                                | 0.17<br>(0.43)         | 23  | -                     |     | -                   |     |
| % pop., non-English speaking                       | 377.1*<br>(163.0)      | 23  | -                     |     | -                   |     |
| Charter Policy 1 (tight regulation)                | -2433.6+<br>(1446.2)   | 23  | -                     |     | -                   |     |
| For private conversion, dummy ( $\beta_9$ )        |                        |     |                       |     |                     |     |
| Intercept ( $\gamma_{90}$ )                        | -5152.7***<br>(1248.9) | 834 | -1698.3<br>(1335.4)   | 24  | -                   |     |
| Charter Policy 1 – (tight regulation)              | -                      |     | 2671**<br>(877.2)     | 24  | -                   |     |
| Charter Policy 2 – (financial support)             | -                      |     | 1341*<br>(582.8)      | 24  | -                   |     |
| For privately managed, dummy ( $\beta_{10}$ )      |                        |     |                       |     |                     |     |
| Intercept ( $\gamma_{100}$ )                       | -                      |     | -953.2<br>(704.1)     | 26  | .14*<br>(.06)       | 836 |
| For elementary school, dummy ( $\beta_{11}$ )      |                        |     |                       |     |                     |     |
| Intercept ( $\gamma_{110}$ )                       | -                      |     | -1135.2*<br>(533.2)   | 836 | -                   |     |
| For combined-grades school, dummy ( $\beta_{12}$ ) |                        |     |                       |     |                     |     |
| Intercept ( $\gamma_{120}$ )                       | -                      |     | -1984.1***<br>(453.6) | 836 | -.11*<br>(.04)      | 836 |

+ $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

elementary schools. Similarly, we see in column C that the teacher benefits index ranges higher for charters located in states that spend more on education and less in states that have more restrictive charter regulations (Charter Policy 1). Benefits are no longer significantly higher in schools serving higher proportions of black students, yet this relationship is significantly stronger in higher income states and those with stronger financial support for charters (Charter Policy 2). Benefit levels remain higher in privately managed charters and weaker in private conversions.

Table 7 reports final HLM models for human resources, starting with years of teaching experience, which ranges higher in states that spend more on education (column A). State school spending also reduces the overall relationship between a community's count of churches (perhaps capturing social infrastructure) and years of experience. Teacher experience remains lower in predominately black charters and those managed by private firms.

State spending holds little effect on the share of teachers working without a full credential (column B). Importantly, states with a more restrictive regulatory environment host charter schools that rely less on uncredentialed teachers (Charter Policy 1). Charter schools located in central cities and those privately managed rely more on uncredentialed teachers.

The final HLM estimation of avenues for parent participation added just one new finding and was otherwise consistent with the OLS models. States with larger proportional shares of white residents hosted charter schools that reported fewer structured forms of parent participation.

The HLM estimation models also contribute to our understanding of organizational innovations in one instance—estimating the length of the school day, as reported in column C. Charter schools offer a longer instructional day when located in states with higher family income, and shorter days in states with more non-English speakers (each coefficient falling just short of significance). Instructional days do remain longer in predominately black charter schools. The instructional day also remains longer in elementary, compared with secondary, charter schools.

### **Qualitative findings—how charter educators view resources**

Our in-depth work inside eight schools helps illuminate the varying local contexts in which charter educators both acquire and deploy resources. We also discovered how each charter school's institutional position and organizational form bears on resource flows, as well as how school directors and teachers define monetary and human resources. And these educators are most immediately embedded in a local environment, largely defined by the kinds of families served, immediate facilities and daily working conditions, and their relationships with the host school district and other funders. Again, our intent in this section is not to provide an exhaustive report based on qualitative data, but to sketch how principals themselves understand resource acquisition and disparities.

### ***Institutional dynamics and resources***

Charter schools do display unique histories and particular relations with their local districts. Still, the charter school sector has adopted some standard organizational forms. The differing resource patterns we saw earlier between elementary versus secondary schools, for instance, or between start-ups versus conversion schools, frequently arose in our qualitative investigation. These categories reflect differing institutional positions, between the charter school and the district, as well as sources of social legitimacy, from their earlier history as a public school to alliance with long-running curricular traditions. The quantitative substudy found that conversion charters benefit from higher salaries, in part because they remain on district payroll systems and under union

Table 7. State and local factors that account for teacher resources and school day length among charter schools (HLM intercepts and slope estimations from 27 states with sufficient data).

|  | Teacher experience      |     | Uncredentialed teachers  |     | Length of the school day |     |
|--|-------------------------|-----|--------------------------|-----|--------------------------|-----|
|  | Coefficient<br>(SE)     | DF  | Coefficient<br>(SE)      | DF  | Coefficient<br>(SE)      | DF  |
| For between-state intercepts ( $\beta_0$ )     |                         |     |                          |     |                          |     |
| Intercept ( $\gamma_{00}$ )                    | 6.54***<br>(0.47)       | 24  | 0.38***<br>(0.02)        | 24  | 5.81***<br>(0.08)        | 24  |
| State's median family income ( $\gamma_{01}$ ) | -0.00002<br>(0.00003)   | 24  | -0.000001<br>(0.000003)  | 24  | 0.00002+<br>(.0001)      | 24  |
| Percentage pop., non-English ( $\gamma_{02}$ ) | -                       |     | -                        |     | -0.01+<br>(0.006)        | 24  |
| Ed. spending per capita                        | .002+<br>(.001)         | 24  | -                        |     | -                        |     |
| Charter Policy 1 (tight regulation)            | -                       |     | -0.04*<br>(0.02)         | 24  | -                        |     |
| For zip median family income ( $\beta_1$ )     |                         |     |                          |     |                          |     |
| Intercept ( $\gamma_{10}$ )                    | -0.0000003<br>(0.00001) | 841 | 0.0000002<br>(0.0000005) | 839 | -0.000002<br>(0.000003)  | 840 |
| For churches in zip per capita ( $\beta_2$ )   |                         |     |                          |     |                          |     |
| Intercept ( $\gamma_{20}$ )                    | -34.8<br>(210.7)        | 841 | -9.26+<br>(4.84)         | 839 | -                        |     |
| State median income                            | .09+<br>(.05)           | 841 | -                        |     | -                        |     |
| Percentage pop., non-English                   | -70.1***<br>(15.5)      | 841 | -                        |     | -                        |     |
| Ed. spending per capita                        | -1.21**<br>(0.38)       | 841 | -                        |     | -                        |     |



Table 7. (Continued).

|   | Teacher experience     |     | Uncredentialed teachers |     | Length of the school day |     |
|---|------------------------|-----|-------------------------|-----|--------------------------|-----|
|   | Coefficient<br>(SE)    | DF  | Coefficient<br>(SE)     | DF  | Coefficient<br>(SE)      | DF  |
| For central city charter, dummy ( $\beta_3$ ) |                        |     |                         |     |                          |     |
| Intercept ( $\gamma_{30}$ )                   | -0.16<br>(0.33)        | 841 | 0.06+<br>(0.03)         | 839 | -0.02<br>(0.08)          | 840 |
| For school enroll. % black ( $\beta_4$ )      |                        |     |                         |     |                          |     |
| Intercept ( $\gamma_{40}$ )                   | -1.0*<br>(3426.7)      | 841 | 0.11*<br>(0.05)         | 839 | 0.24*<br>(0.11)          | 840 |
| For school enroll. % Latino ( $\beta_5$ )     |                        |     |                         |     |                          |     |
| Intercept ( $\gamma_{50}$ )                   | -                      |     | 0.02<br>(0.09)          | 24  | 0.30<br>(0.23)           | 25  |
| % pop., non-English speaking                  | -                      |     | 0.009*<br>(0.004)       | 24  | -                        | -   |
| State median income                           | -                      |     | 0.000002<br>(0.000013)  | 24  | 0.00002<br>(0.000003)    | 25  |
| For public conversion, dummy ( $\beta_6$ )    |                        |     |                         |     |                          |     |
| Intercept ( $\gamma_{60}$ )                   | 1.61*<br>(0.60)        | 841 | -0.12***<br>(0.02)      | 839 | -                        |     |
| State median income                           | -0.000005<br>(0.00001) | 841 | -                       |     | -                        |     |
| For private conversion, dummy ( $\beta_7$ )   |                        |     |                         |     |                          |     |
| Intercept ( $\gamma_{70}$ )                   | -                      |     | -                       |     | 0.15<br>(0.17)           | 23  |
| State median income                           | -                      |     | -                       |     | -0.000003<br>(0.00003)   | 23  |

Table 7. (Continued).

|  | Teacher experience  |     | Uncredentialed teachers |     | Length of the school day |     |
|--|---------------------|-----|-------------------------|-----|--------------------------|-----|
|  | Coefficient<br>(SE) | DF  | Coefficient<br>(SE)     | DF  | Coefficient<br>(SE)      | DF  |
| Percentage pop., non-English                       | -                   |     | -                       |     | 0.08**<br>(0.02)         | 23  |
| Ed. spending per capita                            | -                   |     | -                       |     | 0.002***<br>(0.0004)     | 23  |
| For privately managed, dummy ( $\beta_8$ )         |                     |     |                         |     |                          |     |
| Intercept ( $\gamma_{80}$ )                        | -0.68*<br>(0.32)    | 841 | 0.11***<br>(0.02)       | 839 | -                        |     |
| State median income                                | -                   |     | -0.000004<br>(0.000003) | 24  | -                        |     |
| Charter Policy 1 (financial support)               | -                   |     | 0.08*<br>(0.03)         | 24  | -                        |     |
| Elementary school, dummy ( $\beta_9$ )             |                     |     |                         |     |                          |     |
| Intercept ( $\gamma_{90}$ )                        | -                   |     | -0.05*<br>(0.02)        | 839 | 0.59***<br>(0.14)        | 840 |
| For combined-grades school, dummy ( $\beta_{10}$ ) |                     |     |                         |     |                          |     |
| Intercept ( $\gamma_{10}$ )                        | -                   |     | -                       |     | 0.42*<br>(0.20)          | 840 |

+ $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

contracts, as our interviews also revealed. In contrast, start-up directors complained of uncertain and weak linkages to district offices. As one start-up director reported:

We are kind of a stepchild out here, because our relationship is different. We don't get a lot of notification ... or they don't really know we are here.

Weak links to districts often result in more scarce resource flows. The cost of leased facilities is frequently mentioned by charter school directors, be they in urban or suburban settings. Another director said:

There's an elementary school that's closing, but charter schools are still seen as people from the outside coming in. They [district officials] just don't want to talk about anything.

In sharp contrast, the two conversion charter schools in our qualitative sample reported much greater success in acquiring (or simply keeping) their facility, liability insurance coverage, food services, accounting support, testing operations and teacher development workshops.

School directors talk much about their 'autonomy' from local and state oversight and regulations, especially when it comes to hiring teachers and setting curricular policies and pedagogical practices. One school director said:

The more autonomous we are, the better. Even though we have less money, there are fewer headaches.

One charter teacher reported that her director discouraged staff from working through the district for materials or staff development:

I think she's afraid that they're somehow going to be able to get a tentacle in and say, 'because we're in and you bought into this, now you are just going to become us'.

Still, one agile director protected his school's freedom over the instructional program while developing close relationships with key staff inside the downtown city schools office to obtain resources.

### ***Positioning within diverse communities***

Charter directors talk much about how they try to situate their school within their neighborhood or among client families. This may involve a particular mission, for example, providing a bilingual learning environment, emphasizing learning through the arts, or moving from a Montessori or Rudolph Steiner philosophy. And the terms established for parent members of charter communities hold direct resource implications. Several schools essentially required monetary and/or labor contributions to be a full-fledged member ('a suggested monthly fee'). One school budgeted \$140,000 in annual parent contributions.

In this way the character of children served affects resource flows, from monetary contributions of parents to the quality of daily life inside the classroom. The (uneven) flow of categorical aid dollars is also tied to the count of students qualifying for Title I reading assistance, special education services, even subsidized lunches. One school serving children, 97% of whom were eligible for Title I, could not ask for cash contributions from parents, but did hire parents part-time to supervise the lunchroom, to serve as the librarian or a classroom aide.

### ***Organizational identity and teacher commitment***

We found that the school's internal structure—especially size, start-up status and curricular mission—often supports certain ideals or social priorities expressed by charter educators or parents. In turn, these dynamics bear on the structure of costs and the flow of available resources. One start-up director expects strong, time-consuming contributions from parents:

If you're looking for a school where you can drive your child up, drop them off at 8:30 and pick them up at 3:00, you will not be happy here. This is a parent-run school ... at different levels, including funding ... we ask for help from parents.

At our sampled conversion schools, parent participation was limited to the PTA or, in one case, serving on a curriculum committee with teachers. Another school, run by a charter management organization, required that parents be trained to attend some Saturday school sessions and adjust their home practices to complement the teachers' early learning agenda.

The conventional attributes of teachers, such as experience in the classroom or credential level, may be less important than their social or curricular ideals. One director told us:

We have to find teachers that support the mission ... we have to have complete buy-in.

Teachers at five of our sampled schools reported that collaboration with other staff, as well as richer professional development opportunities, were pivotal benefits of working within a charter school. One director of a conversion school, in sharp contrast, said:

The biggest resource is the human resource, and we don't have complete control over that ... the contract has been negotiated between the district and the union.

Finally, school size was tied to autonomy and flexibility in the minds of several charter school directors. One told us:

Small schools are always beneficial because of the personal contact and so forth. But it's not the amount of students we have, it is that we are in control of offering subject matter as it is needed and [for the] time it is needed.

At one conversion school, a caucus of teachers, concerned about how large the school had become, were talking about breaking off to form a second school.

Size does bring cost problems, including the transaction costs of acquiring categorical aid dollars. One California charter director—in a state that's consolidated categorical into a single block grant for charter schools—told us:

We don't go after [it] because you need to hire people to do the applications and the compliance reports ... which is why charter schools are so much [more] underfunded than other schools.

One parent spoke to the lack of economies of scale in small start-ups:

At some point we may have to get bigger just to survive. The more kids you have, the more funds you have.

### **Conclusions—can policy levers moderate resource disparities?**

These qualitative findings help to clarify how charter schools take on distinct organizational forms—whether being a start-up or conversion school, elementary or secondary school—and these types of organization hold implications for the acquisition of certain resources. How schools are then positioned—vis-à-vis their host district and within particular communities that vary dramatically in family wealth, ethnic composition and infrastructure—further contributes to costs and resources flows. In short, the search for material and human resources is conditioned by the charter school's organizational form and the institutional posture it stakes out in relation to funders and families.

The state and its policy makers represent another institutional actor that exerts selective influence over resources enjoyed by charter schools. Those situated in states with tighter regulation rely less on uncredentialed teachers, compared with those in states with more liberal regulation. When we split states along the median value of the state-regulation index we found that 23% of teachers are not fully credentialed in those states with tighter controls (including

Connecticut, Ohio and Rhode Island), compared with 44% in states with more liberal regulatory policies ( $p < .06$ , including Arizona, California and Massachusetts). Charters employ more experienced teachers in states with tighter state regulation and higher overall education spending per capita. States with more generous fiscal support of their charter sectors display more equal teacher salaries across charter schools. Many more charter schools operate in states with weak regulation, in part given the impact of state caps on the number of charters that can be granted.

Some measures of resources and organizational features vary sharply across individual states, as we saw in Table 1. Just under one-third of charter teachers in California worked without a full credential in 1999–2000, compared with 55% of charter teachers in Michigan. Two percent of all charter schools in Arizona ran under a union contract, compared with 42% in California. The ratio of students per full-time teacher was about one-third higher in California charter schools, over 29:1, compared with those in Michigan, where the ratio was 20:1 (despite equal proportions of elementary and secondary schools).

But the most influential antecedents of resource levels are operating locally, not at the state level. The composition of students being served, for example, holds telling effects. Charter schools with predominately black enrollments pay higher salaries to less experienced teachers who are less likely to be fully credentialed, compared with schools serving white children more often situated in suburban areas. Working conditions in largely African American schools may be more challenging, including our findings that the school day is longer and teachers feel less influence in their daily work, on average, compared to staff in other charter schools. Similarly, schools located in zip codes that host more community organizations (perhaps a stronger social organization in general) rely less on uncredentialed teachers and offer stronger benefit packages. In stark contrast to predominately black charter schools, those serving more Asian American students pay higher salaries to their teachers, compared with predominately white charter schools.

The school's organizational form also appears to drive resource levels. Conversion charters pay principals over \$6300 more per year than those working in start-ups, and the median teacher earns over \$5100 more, even after taking into account the income and price structures of their surrounding community. Conversions rely much less on uncredentialed and part-time teachers, compared with start-ups. Privately managed charters rely somewhat less on experienced teachers and pay them about \$1830 less, on average, than publicly managed start-ups, again after taking into account the economic features of their local communities. Teachers in privately managed schools report the availability of more individual incentives tied to their involvement or performance at their school. Charter high schools were more likely to rely on uncredentialed teachers, operate under a union contract, and provide fewer avenues of parent participation, compared with elementary schools.

Overall, the lion's share of variance in our resource measures is attributable to between-school or community factors, not to between-state differences. As reported above, fully 82% of the variation in the percentage of teachers not fully credentialed is linked to local, not state differences. The share of variance explained by between-state factors reached 73% for the ratio of students per part-time teacher. Within the OLS environment, the total fixed effect of state membership appeared to be more impressive. But this is due, in part, to how local factors are nested within states. For example, private management firms have migrated to particular states, so state membership is collinear with the incidence of private management. As we entered the state fixed effects into the OLS regressions, the coefficients associated with local factors became smaller, indicating a substitution effect.

The weak influence of state policy on the level and distribution of charter schools—beyond the size of the sector—is worrisome. Earlier work shows that charter schools are not more effective

than regular public schools on average. These new findings confirm that charters vary dramatically in their monetary and human resource levels, and the extent to which they innovate. Charter schools reflect the same kinds of inequalities that all public schools have long displayed.

Under NCLB, schools that fail to raise student achievement for several years are required to become charter schools or placed under private management. But what happens if state policy makers continue to exert only a slight effect on the quality and distributed impact of charter schools across diverse children and their communities? Converting thousands of ‘failing schools’ into charter schools may simply reproduce the stark inequalities that mark regular public schools.

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### Notes

1. For example, the California Charter School Association recently reviewed the 12 bills they sponsored in the state legislature to obtain more funding, ease the re-chartering process, allow one county to create charter schools for students older than 19, and gain greater access to state bond funds for capital improvements (Jones and Miller 2004).
2. The eight items pertained to structured ways in which parents could participate in, or communicate with staff at, the charter school, including volunteering, substantively contribute to school events (e.g., concerts, curricular activities, science fairs), come to scheduled parent–teacher conferences, execute a written contract with the school staff regarding the parent’s or child’s responsibilities, attend parent education workshops or courses, participate in running the school, making budget decisions, and shape pedagogical and curricular policies at the school.
3. Twenty percent of the total variance is attributable to between-state differences for years of teaching experience, 80% to between-school differences.
4. School enrollment was not entered with state membership, given its tautological relationship with the enrollment-to-teacher ratio.

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### References

- Burian-Fitzgerald, M., M. Luekens, and G. Strizek. 2004. Less red tape or more green teachers: Charter school autonomy and teacher qualifications, In *Taking account of charter schools*, ed. K. Bulkley and P. Wohlstetter, 11–31. New York: Teachers College Press.
- Bryk, A., V. Lee, and P. Holland. 1993. *Catholic schools and the common good*. Cambridge, MA: Harvard University Press.
- Bryk, A., and S. Raudenbush. 1992. *Hierarchical linear models: Applications and data analysis*. Newbury Park, CA: Sage.
- Bryk, A., and B. Schneider. 2002. *Trust in schools: A core resource for improvement*. New York: Russell Sage Foundation.
- Carnoy, M. 1984. *Political theory and the democratic state*. Princeton, NJ: Princeton University Press.
- Carnoy, M., and S. Loeb. 2002. Does external accountability affect students outcomes? A cross-state analysis. *Educational Evaluation and Policy Analysis* 24, no. 4.
- Education Commission of the States. 2003. *State comparisons—state policies for charter schools*. <http://www.ecs.org/> (accessed October 30, 2003).
- Finn, C., B. Manno, and G. Vanourek. 2000. *Charter schools in action: Renewing public education*. Princeton, NJ: Princeton University Press.

- Finn, C., E. Osberg, S. Speakman, and B. Hassel. 2005. *Charter school funding: Inequity's next frontier*. Washington, DC: Thomas B. Fordham Institute.
- Finnigan, K., N. Adelman, L. Anderson, L. Cotton, M.B. Donnelly, and T. Price. 2004. *Evaluation of the Public Charter Schools Program: Final evaluation report*. Washington, DC: US Department of Education.
- Fuller, B., ed. 2000. *Inside charter schools: The paradox of radical decentralization*. Cambridge, MA: Harvard University Press.
- Fuller, B., M. Gawlik, E. Kuboyama-Gonzales, and S. Park. 2004. Localized ideas of fairness: Inequality among charter schools. In *Taking account of charter schools*, ed. K. Bulkeley and P. Wohlstetter, 93–120. New York: Teachers College Press.
- Gawlik, M. 2005. *Cutting loose: Autonomy and education in charter schools*. Doctoral dissertation, University of California, Berkeley.
- Gruber, K., S. Wiley, S., Broughman, G. Strizek, and M. Burian-Fitzgerald. 2002. *Schools and staffing survey, 1999–2000: Overview of the data for public, private, public charter, and Bureau of Indian Affairs elementary and secondary schools*. Washington, DC: US Government Printing Office.
- Hassel, B. 1999. *The charter school challenge: Avoiding the pitfalls, fulfilling the promise*. Washington, DC: Brookings Institution.
- Henig, J., R. Hula, M. Orr, and D. Pedescleaux. 1999. *The color of school reform: Race, politics, and the challenge of urban education*. Princeton, NJ: Princeton University Press.
- Huerta, L. 2002. *The organizational evolution of two California charter schools: Innovation or isomorphism?* Doctoral dissertation, University of California, Berkeley.
- Jones, B., and C. Miller. 2004. Capitol update: Charter schools play defense once again, yet make positive gains. *The Charter Journal* December: 3–4.
- Ladd, H.F., and R.P. Bifulco. 2004. *The impacts of charter schools on student achievement: Evidence from North Carolina*. Working Paper SAN04-01. Durham, NC: Terry Sanford Institute of Public Policy, Duke University.
- Lubienski, C. 2004. Charter school innovation in theory and practice: Autonomy, R&D, and curricular conformity. In *Taking account of charter schools*, ed. K. Bulkeley and P. Wohlstetter, 72–92. New York: Teachers College Press.
- Miron, G., and C. Nelson. 2004. Student achievement in charter schools. In *Taking account of charter schools*, ed. K. Bulkeley and P. Wohlstetter, 161–175. New York: Teachers College Press.
- Nelson, F.H., E. Muir, and R. Drown. 2000. *Venturesome capital: State charter school finance systems*. Washington, DC: Office of Educational Research and Improvement, US Department of Education.
- Nelson, F.H., B. Rosenberg, and N. Van Meter. 2004. *Charter school achievement on the 2003 National Assessment of Educational Progress*. Washington, DC: American Federation of Teachers.
- Powell, W., and P. DiMaggio, ed. 1991. *The new institutionalism in organizational analysis*. Chicago, IL: University of Chicago Press.
- Rhim, L., E. Ahearn, C. Lange, and M. McLaughlin. 2004. Balancing disparate visions: An analysis of special education in charter schools. In *Taking account of charter schools*, ed. K. Bulkeley and P. Wohlstetter, 142–157. New York: Teachers College Press.
- Rury, J., ed. 2005. *Urban education in the United States: A historical reader*. New York: Palgrave Macmillan.
- Scott, W.R., M. Ruef, J. Mendel, and C. Caronna. 2000. *Institutional change and healthcare organizations: From professional dominance to managed care*. Chicago, IL: University of Chicago Press.
- Tyack, D. 1974. *The one best system: A history of American urban education*. Cambridge, MA: Harvard University Press.
- US Census Bureau. 1999. *Business zip code patterns*. Washington, DC: US Department of Commerce. CD-ROM.
- US Census Bureau. 2000. *Decennial census of population and housing, Summary files 1 and 3 (SF1 and SF 3 for race, ethnicity, education, and income variables)*. <http://factfinder.census.gov> (accessed November 15, 2003).
- US Department of Education. 2000. *The state of charter schools, 2000: National study of charter schools*. Washington, DC: Office of Educational Research and Improvement.
- Wells, A. 1993. *Time to choose: America at the crossroads of school choice policy*. New York: Hill & Wang.
- Whitty, G., S. Powers, and D. Halpin. 1998. *Devolution and choice in education: The school, the state, and the market*. Bristol: Open University Press.
- Zimmer, R., R. Buddin, D. Chau, G. Daley, B. Gill, C. Guarino, et al. 2003. *Charter school operations and performance: Evidence from California*. Santa Monica, CA: RAND.