Data Appendix

Purposive Sampling

Campus-level counts of post-secondary attainment as of 2023 for 9th through 12th grade students who were continuously enrolled in a public high school from 2011 to 2014 was obtained through data from the University of Houston Education Research Center (ERC). Creating a matched set of charter and traditional public schools for comparison helps improve covariate balance between the two groups. Education research shows that several covariates —population characteristics that influence outcomes— are strongly linked to post-secondary attainment (Aitkin & Longford, 1986; Hill & Rowe, 1996; McCaffrey et al., 2004). For this analysis, ensuring strong covariate balance between the charter and traditional public school groups is essential (Greevy et al., 2004; Raudenbush & Willms, 1995). The process used to create the matched sample is described below.

Sampling Frame

First, all campuses identified as dropout recovery (AEA) accountability schools, residential treatment facilities (RTFs), juvenile justice alternative education programs (JJAEPs), and disciplinary alternative education programs (DAEPs) were excluded from the analysis. RTFs were excluded because the unique student populations served in instructional settings are far different from other schools. JJAEPs and DAEPs were excluded because the performance of their student populations is attributed back to the students' home campuses. Ultimately, only standard accountability campuses were included in the sampling frame.

Covariate Balancing

Campus-level annual high school dropout rates were used as a proxy for post-secondary attainment. Important covariates of high school dropout rates and supporting academic literature are displayed in Table A.1. Beginning with the sampling frame of only standard accountability campuses, a correlational test was used to determine which covariates were significantly correlated to annual high school dropout rates for the class of 2011. Covariates were then balanced using t-tests to determine if there were significant differences between the charter and the traditional public school groups. If the t-test revealed no significant difference in the distributions of the variable among the charter and the traditional public school group, the variable was considered balanced. If the t-test yielded a significant difference, outliers in the traditional public school data were trimmed (Ghosh & Vogt, 2012). An outlier was trimmed from the data if the standard deviation from the mean exceeded the standard deviation of the 5th and 95th percentile means. After data were trimmed, t-tests were conducted to evaluate differences between the two groups. The specific order of the covariate balancing was selected based upon the degree of difference in group means. The covariates with the largest differences were trimmed first. T-tests were conducted again, and the process was repeated. In total, six distinct covariates were balanced:

- Percentage of Black students enrolled
- Percentage of Hispanic students enrolled
- Percentage of enrolled students identified as economically disadvantaged
- Percentage of English learners enrolled
- Percentage of enrolled students receiving special education services
- Percentage of Asian students enrolled

Table 2 shows demographic characteristics of charter and traditional public school groups before and after balancing significant covariates.

Table 1: Characteristics Included in Matching

Characteristic	Literature	Texas Campus Covariate
Concentration of Economically Disadvantaged Students	Heck, 2000; Fowler & Walberg, 1991	Percent economically disadvantaged students enrolled
Proportion of Special Education Students served	Heck, 2000; McCaffrey et al., 2004	Percent special education students enrolled
Proportion of Historically Marginalized Student Enrollment	Darling-Hammond, 2004	Percent African American students enrolled, percent Asian students enrolled, percent Hispanic students enrolled
Proportion of English Learners	Abedi & Gándara, 2006	Percent English Learners enrolled

Table 2: Demographic Characteristics of Charter School Campuses and Matched Traditional Public School Campuses That Were Included in Post-Secondary Attainment Analysis, 2011 to 2014 9-12th Grade Cohort

	Before Covariate Balancing		After Covariate Balancing	
	Public Charter School Campuses	Traditional Public School Campuses	Public Charter School Campuses	Traditional Public School Campuses
Race/ Ethnicity				
African American	16%	13%	16%	14%
American Indian or Alaska Native	<1%	<1%	<1%	<1%
Asian	5%	3%	5%	3%
Hispanic	55%	46%	55%	48%
Native Hawaiian or Pacific Islander	<1%	<1%	<1%	<1%
Two or more races	1%	2%	1%	2%
White	21%	35%	21%	32%
Other Student Characteristics				
At-Risk	38%	46%	38%	43%
Economically Disadvantaged	60%	50%	60%	53%
English Learner	10%	6%	10%	7%
Special Programs				
Special Education	6%	10%	6%	8%
Total Students	49,434	1,336,008	49,434	1,309,803
Number of Schools	121	1,752	121	1,446

Source. Merged Texas Academic Performance Reports, Texas Education Agency, 2011-12 to 2011 to 2014 9-12th grade cohort post-secondary data obtained from the University of Houston Education Research Center. Only campuses that had a Texas Academic Performance Report were included in the analysis.

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