City Studies Project Meta-Analysis by CREDO of Stanford University

Cohort 2 Cities

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1 About City Studies Project

1.1 Purpose

The City Studies Project aims to provide the public with periodic reports of academic performance for public K-12 schools in selected cities across the United States. We hope that the findings provide a solid foundation for informed evaluations of and constructive discussion on the performance of the schools in these cities by stakeholders invested in public education.

1.2 Study Approach

The City Studies Project compares the academic performance of various student groups in the city to average statewide academic performance, while accounting for differences in student demographic characteristics based on statistical analysis.[1] In addition, we compare the performance of charter school students (and magnet or innovation school students, where applicable) to the performance of similar district students within the city. By focusing on academic growth, we can best isolate a school's impact on student learning from the impact of other factors in students' lives. Analyses for the project consider the performance of students grouped in a variety of ways. We examine student performance for:[2]

- The city as a whole
- Students in district schools and charter schools
- Students in innovation schools or magnet schools, where applicable
- Black students and Hispanic students, by sector
- Students living in poverty, by sector
- Students with English Language Learner (ELL) status, by sector
- Students receiving special education services, by sector

1.3 Meta-Analysis for Cohort 2 of City Studies Project

The meta-analysis presented in this report shows performance growth trends in four selected U.S. cities:

- The graphs in sections 2-5 show the trajectory of performance growth in a selected city between the 2014-15 and 2018-19 growth periods. The trend for the city of interest is highlighted in red (reading) and orange (math), while the rest of the four cities included in the study are shown in gray as a reference point.
- The graphs in section 6 compare the level of achievement between the students entering the charter school for the first time and those who have been enrolled in the charter school in the previous year(s). It tests the hypothesis that charter schools selectively enroll students with already strong academic achievement (cream skimming).

1.4 Benchmark for Effect Size Interpretation

For the general audience unfamiliar with statistical concepts, the effect size metric is translated to the days of learning metric in the city-specific reports. The description of the conversion is available on CREDO's website (link to the page).[3]

[1] We benchmark the growth of Washington DC students in each sector against the city average growth.

[2] Please see further details about our study approach at https://credo.stanford.edu/city-studies/.

[3] Although the objective interpretation and comparison of the effect size across the cities is difficult due to differences in macro- and micro-level city- and state-specific factors that might influence the size of effect sizes, we provide a benchmark that readers can use to interpret the results. The benchmark in effect size range is proposed by Kraft

1.5 Student Characteristics by City, Sector, and Subgroup, Based on 2018-19 Test Takers

To provide the context of the cities examined in the study, the snapshot of student characteristics by city, sector, and subgroup using the latest data in the study window is presented in Table 1.[4]

Table 1: Subgroup Composition by City and Sector, Based on 2018-19 Test Takers

		Percent					
Sector	Total N	Sector	Black	Hispanic	Poverty	ELL	SPED
Austin							
Overall	67,726	100	6.9	47.2	44.2	19.4	6.2
Charter	10,216	15.1	8.9	75.8	75	38.7	4.2
District	57,510	84.9	6.5	42.2	38.7	16	6.5
Forth Worth							
Overall	66,733	100	20.8	53.5	70.7	21.9	5.2
Charter	4,342	6.5	28.4	45.4	56.7	17.5	3.1
TPS	62,391	93.5	20.2	54.1	71.7	22.2	5.4
Houston							
Overall	246,691	100	22.5	63	77.2	24.1	4.3
Magnet	6,366	2.6	22.9	54.5	68.3	8.7	2.1
Charter	33,255	13.5	19	69.5	77.2	27.4	2.9
TPS	207,070	83.9	23	62.2	77.4	24.1	4.6
Newark							
Overall	25,232	100	56.2	36.6	82	7.1	14
Magnet	2,078	8.2	50.3	39.7	76.4	1.2	8
Charter	8,965	35.5	82.4	15.2	84.3	1.1	11.7
TPS	14,189	56.2	40.5	49.7	81.4	11.8	16.3

Note: Counts by Sector Denominator is Citywide Total Denominator is Sector Total

(2020), which is also approximately consistent with the categorization suggested by the U.S. Department of Education (2022). The categorization is Large impact (Greater than |0.2|) Medium impact (Between |0.05| and |0.2|) Small impact (Less than |0.05|).

[4]Note: The statistical method used for the performance growth estimation controls for the differences in the student characteristics between the city and the state average.

2 Trends in Overall School Performance Growth, by City

2.1 Summary

The overall performance growth trends for each city are presented in section 2.2. The trends by city suggest that each city has its own distinct growth trajectory compared to the corresponding state averages. Austin, Houston and Newark show consistently higher or similar performance growth than their state average. Fort Worth exhibited lower performance growth than the state average in the first year of the study window in both subjects, and growth pattern has been fluctuating over the recent years.

Based on the benchmark proposed in Section 1.4, all statistically significant performance growth shown in the overall city-level trends fall under the medium effect size category. This means that the impacts shown in these trends are non-trivial and, for a number of cities, there are consistent performance growth during the study window.

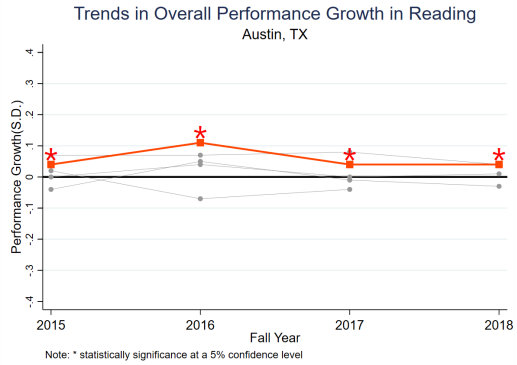
In sections 2.3 to 2.7, we present trends in performance growth of specific subgroups relative to the state average of each subgroup. Growth trajectories for Black, Hispanic, and students living in poverty tend to closely mirror the citywide trends because these groups comprise the majority of students in the cities studied. Growth trajectories for ELL students and students receiving special education services tend to show larger variation in the estimates due to a smaller number of students belonging to these groups. However, the general trends align with the overall citywide trend for each city.

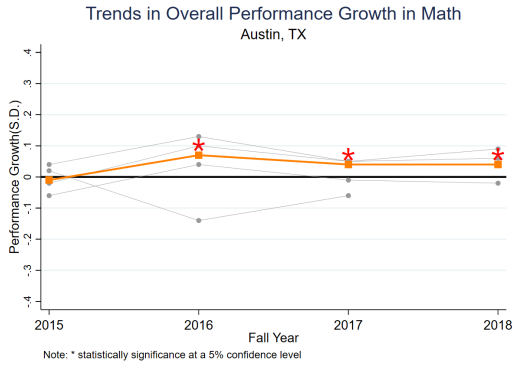
The variety of patterns shown in these comparisons suggests that it is vital to understand the city-specific contexts and which sector or subgroup contributes to the city's overall growth:

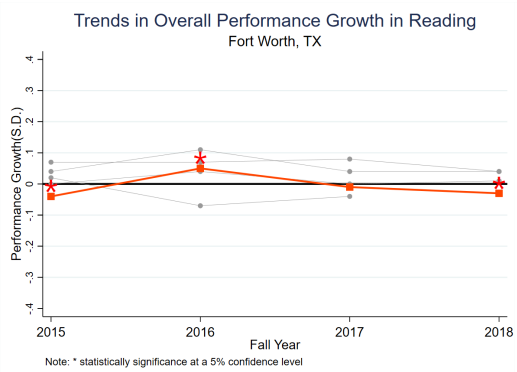
- Austin: In reading, positive performance growth observed in all years of the study window. Similar overall positive pattern is observed in math and the differences are statistically significant in the last three years of study window. The positive growth stems from the charter schools in the city of Austin. Charter students make up about 15% of the total test-taking student body in the city (Table 1). Hispanic students are the majority of the student population (76% in charter, 42% in TPS), and the positive trends in the performance growth for the subgroup suggest the charter schools positively contribute to the learning of Hispanic students and students with poverty in the city.
- Fort Worth: The overall trend line is below or on par with the state average in both reading and math. There is no consistent pattern to be observed during the study window when examined by school sector. About 94% of Fort Worth students are enrolled in TPS schools, and 71% of students in the city are categorized as students with poverty.
- Houston: Charter sector contributed to the consistent and strong positive performance growth of students in the city compared to the state average. All subgroups are positively impacted by the charter schools. Seventy percent of student body in the charter schools are Hispanic students, while 77% of charter students are categorizes as students with poverty. Students enrolled in Houston district schools also show positive impact on students' performance growth in math during the last three years of the study window, although the impact on reading is not as obvious.

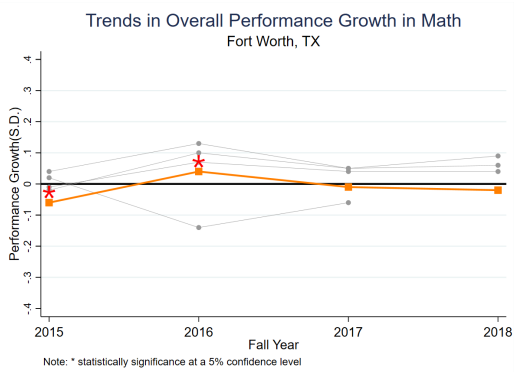
- Newark: About 82% of the students they serve are black students, significantly higher proportion compared to the Newark District schools where 41% are black student. Share of students with poverty status is higher than the other cohort 2 cities at 82 percent. Overall, Newark shows positive performance growth compared to the state average. In terms of the magnitude of the growth, the charter sector shows the largest performance growth, but district schools also show positive or at least on par growth compared to the state average.

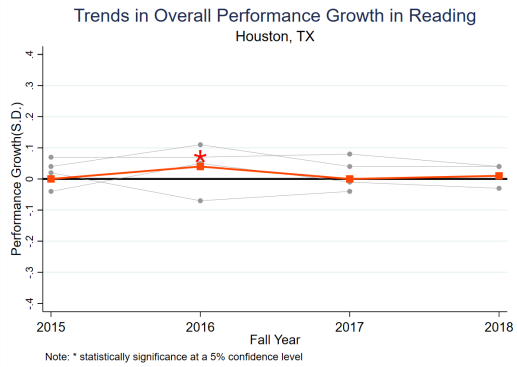
2.2 Overall School Performance Growth

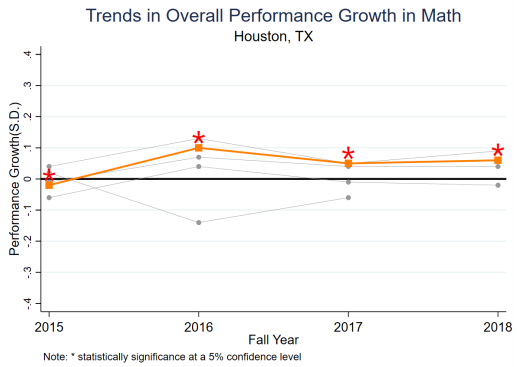


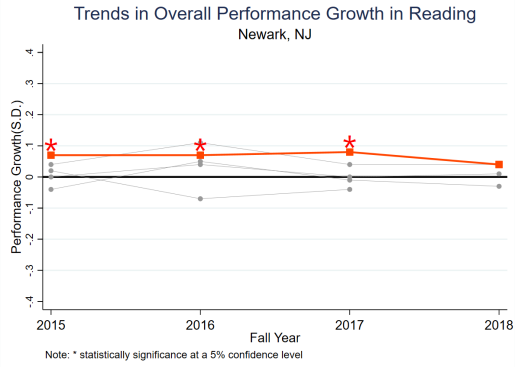


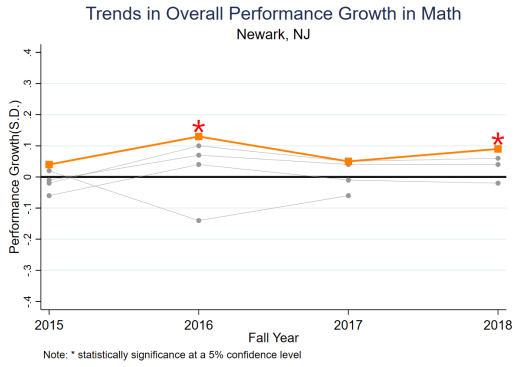






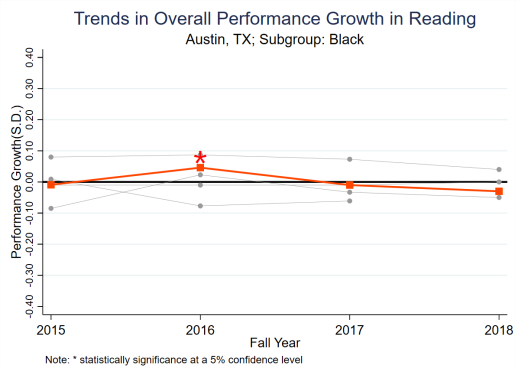


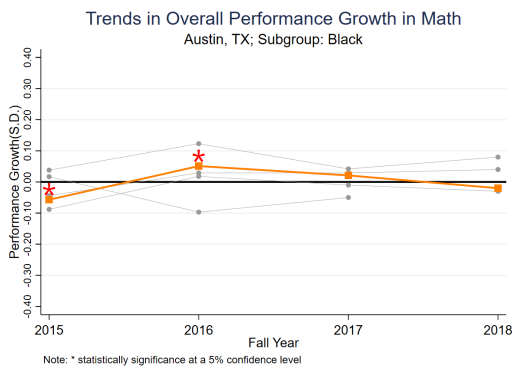


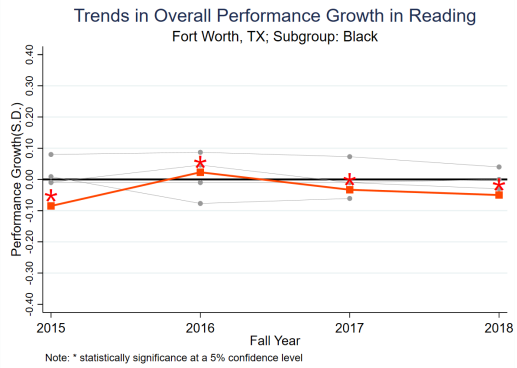


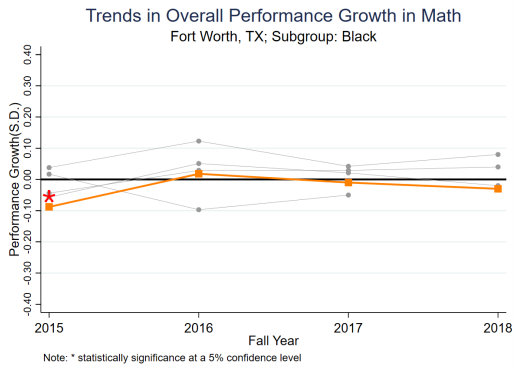
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

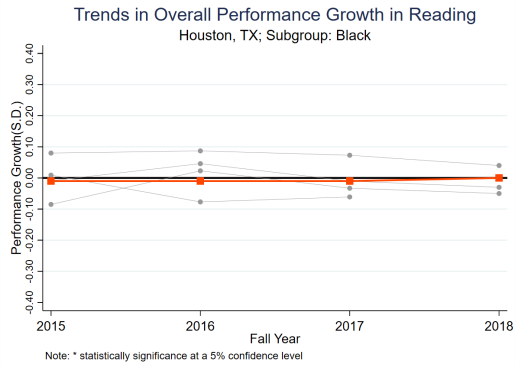
2.3 Overall School Performance Growth among Black Students

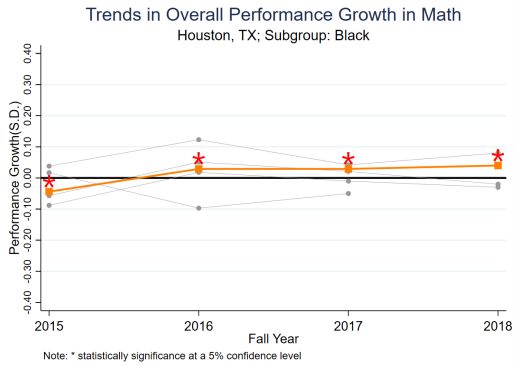


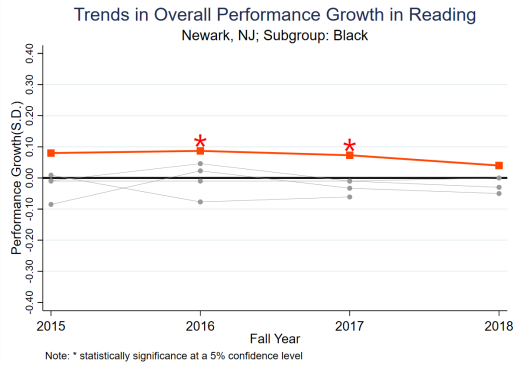


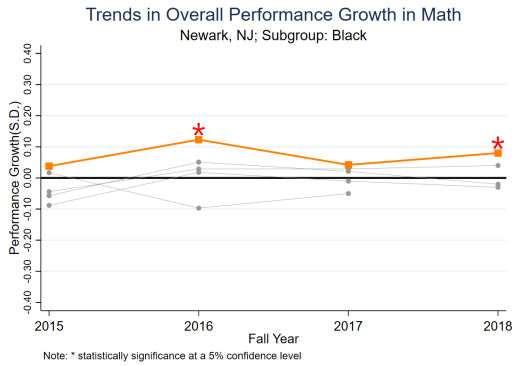






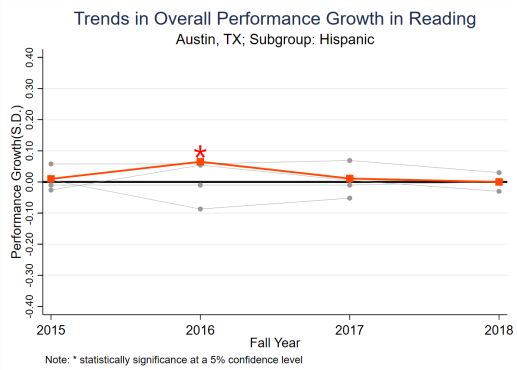


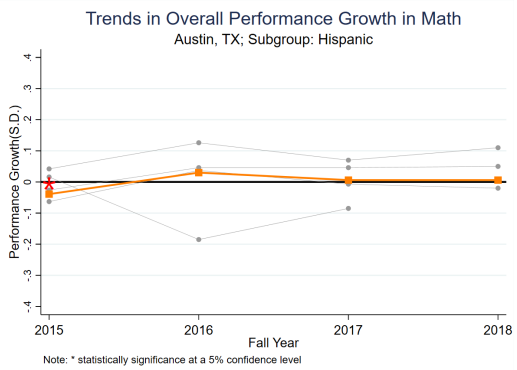


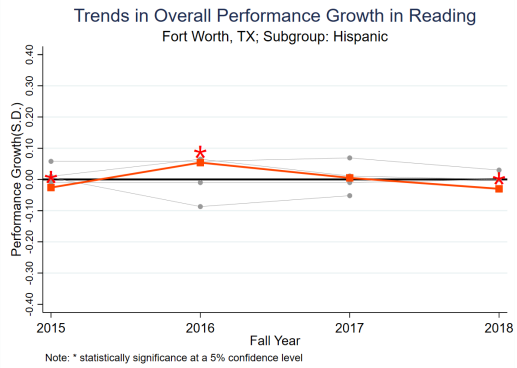


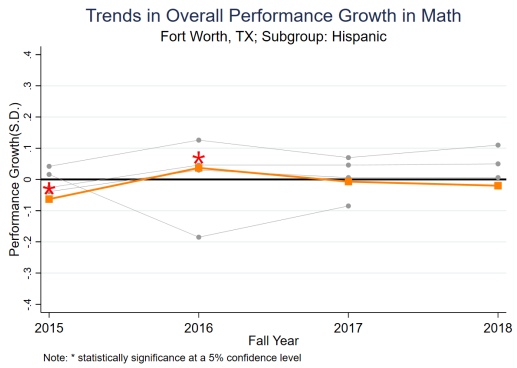
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

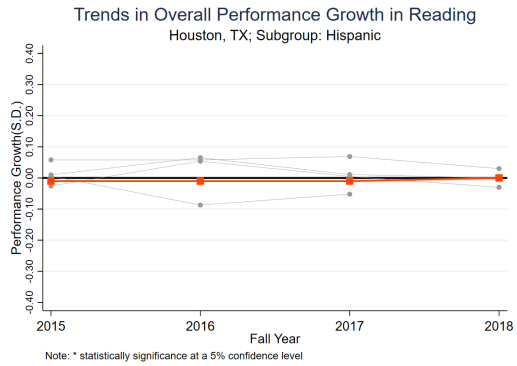
2.4 Overall School Performance Growth among Hispanic Students

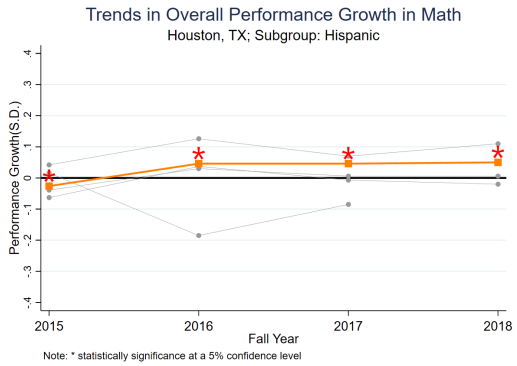


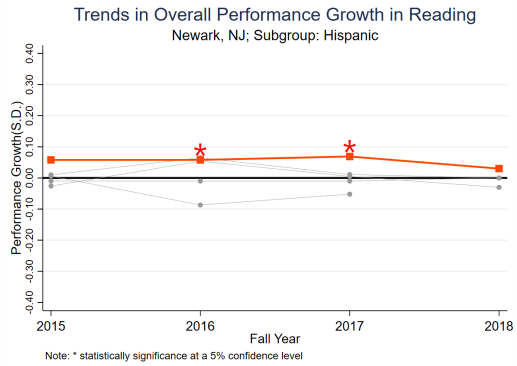


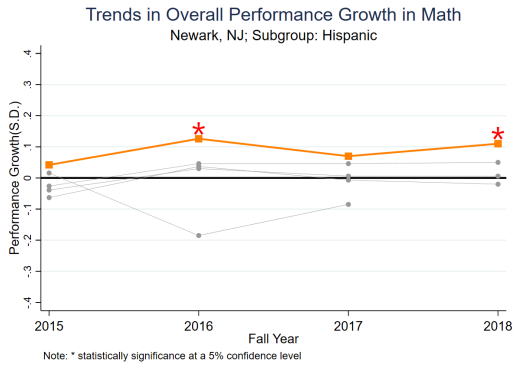






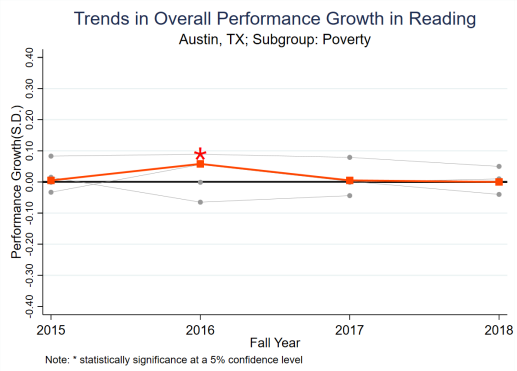


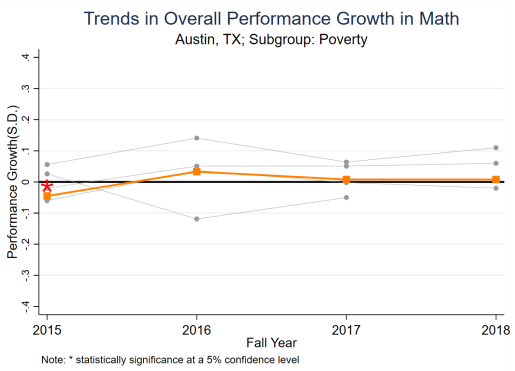


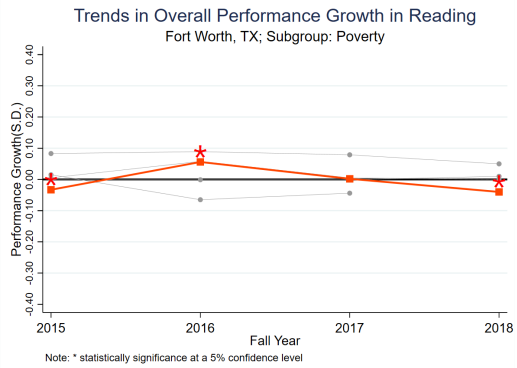


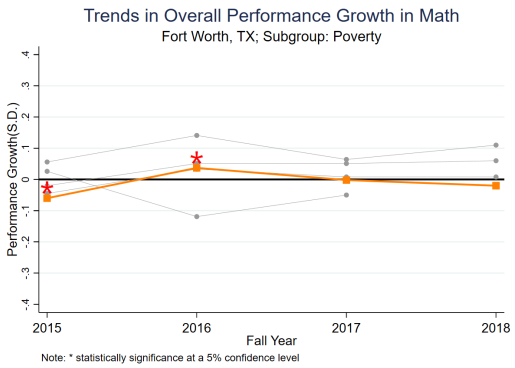
Note: The asterisk indicates statistically significant difference from state averages at $p<0.05$.

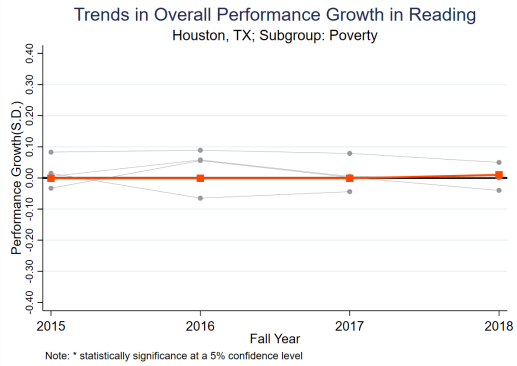
2.5 Overall School Performance Growth among Poverty Students

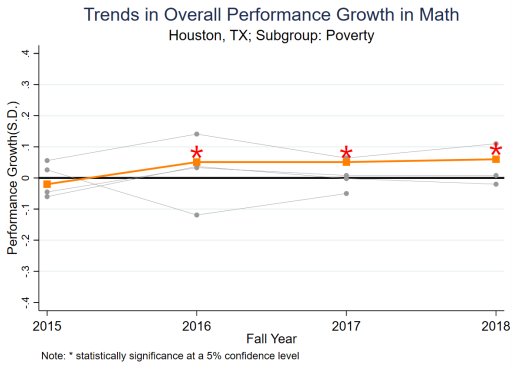


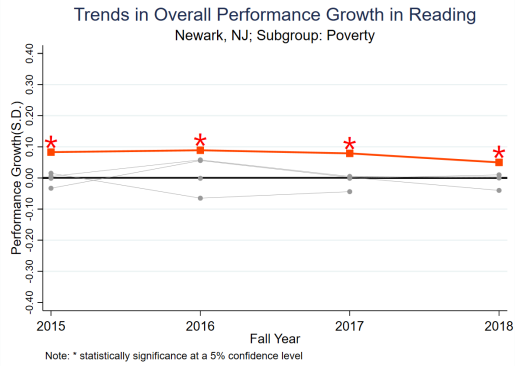


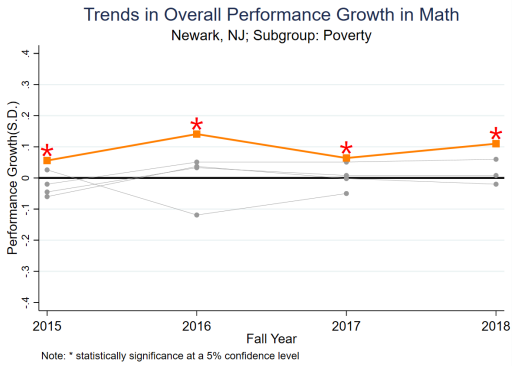






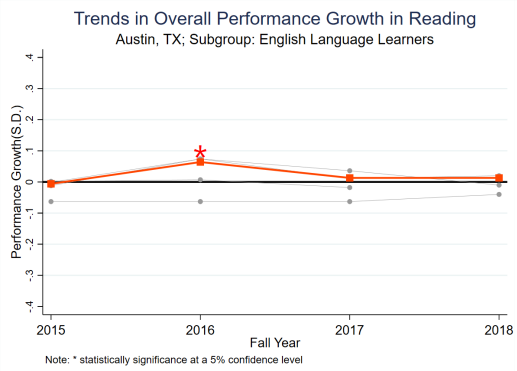


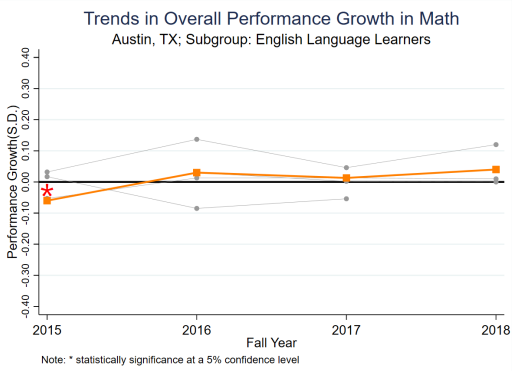


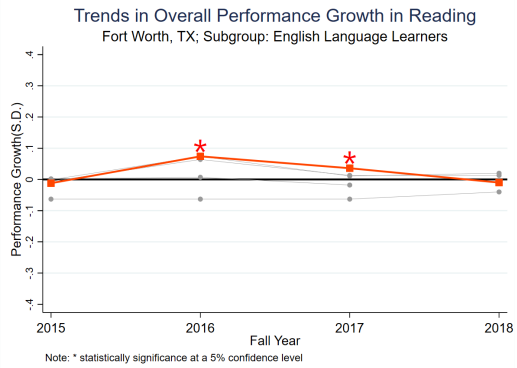


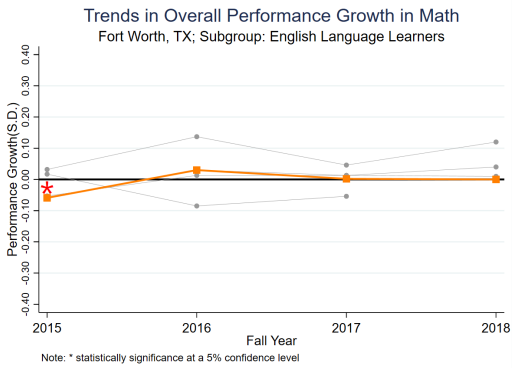
Note: The asterisk indicates statistically significant difference from state averages at $p<0.05$.

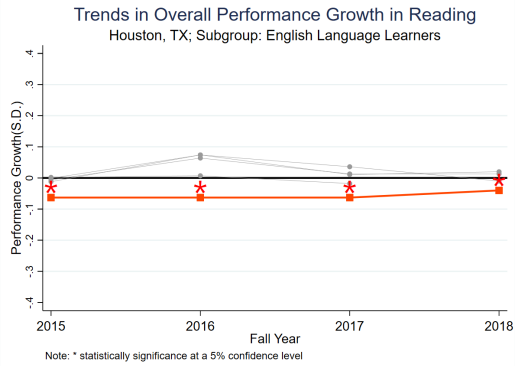
2.6 Overall School Performance Growth among ELL Students

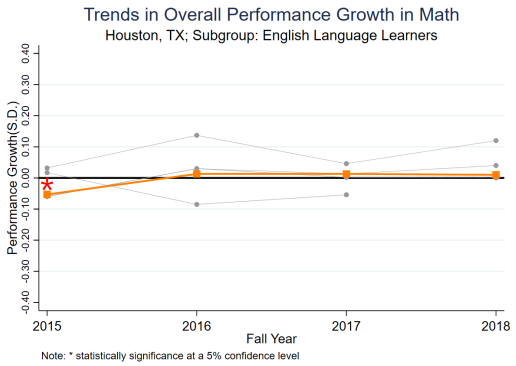


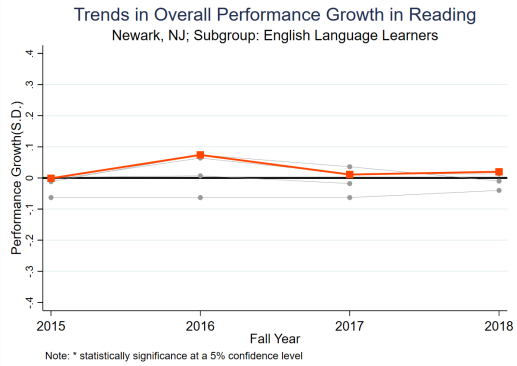


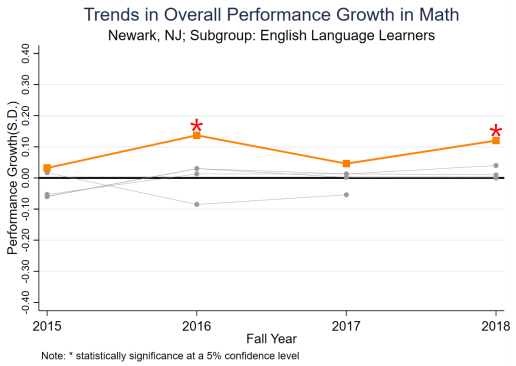






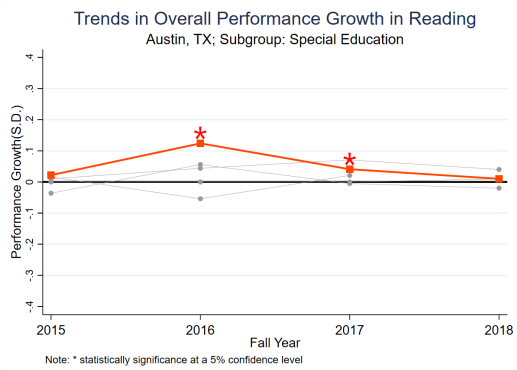


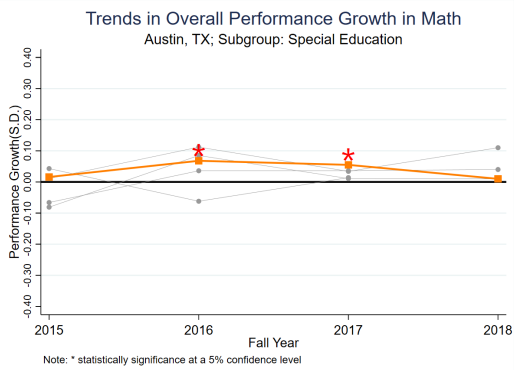


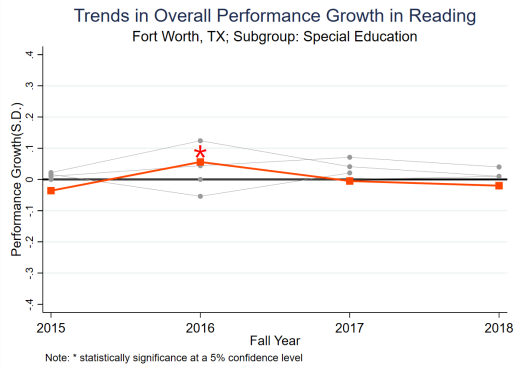


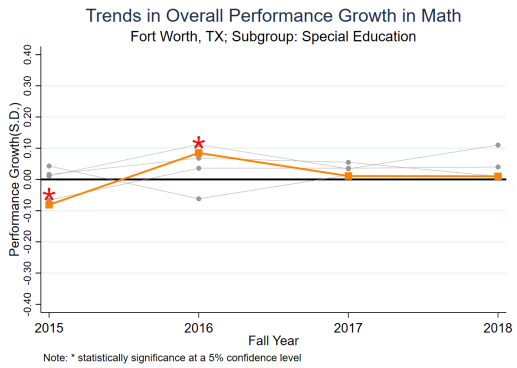
Note: The asterisk indicates statistically significant difference from state averages at $p<0.05$.

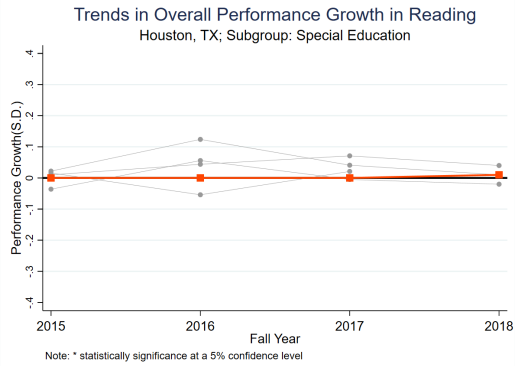
2.7 Overall School Performance Growth among Special Education Students

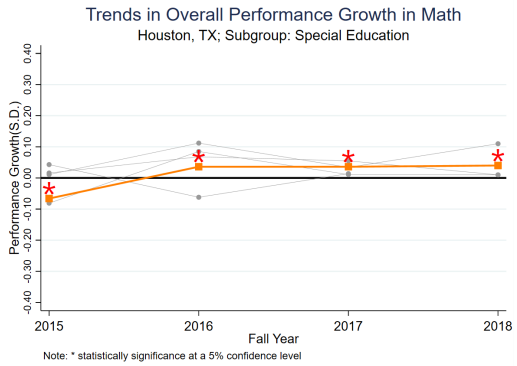


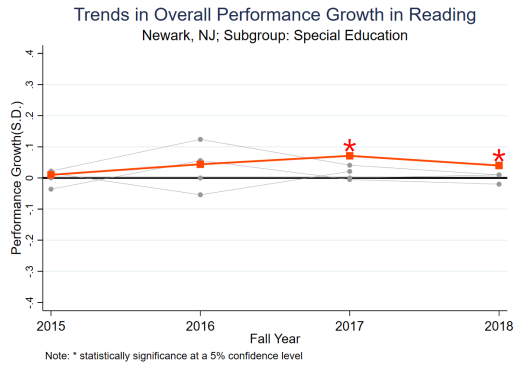


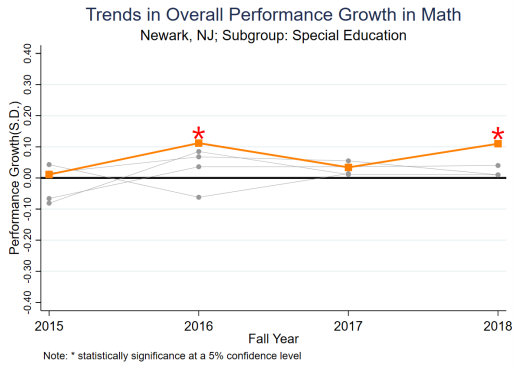












Note: The asterisk indicates statistically significant difference from state averages at $p<0.05$.

3 Trends in Charter School Performance Growth, by City

3.1 Summary

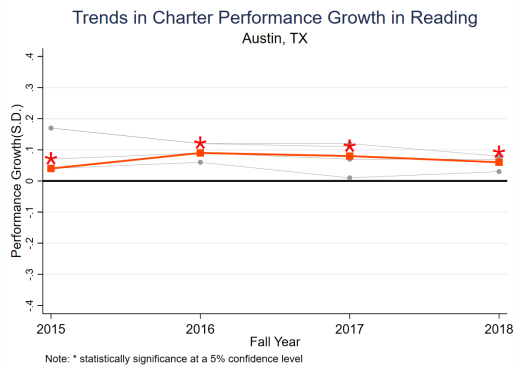
The overall performance growth trends for charter school students are presented in section 3.2. Charter schools in four cohort 2 cities show have shown consistently higher growth relative to the state average. The only city that doesn't show strong charter school performance is Fort Worth, but the charter sector still performs on par with state average.

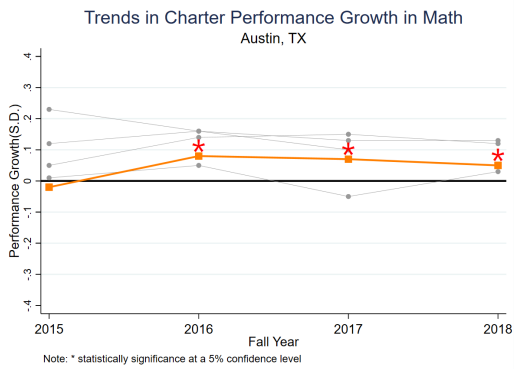
For most cities, Hispanic students enrolled in charter schools perform better than the Hispanic students in the state and show more robust performance growth than the Hispanic students enrolled in the TPS. The story is similar for black students attending charter schools in the cohort 2 cities.

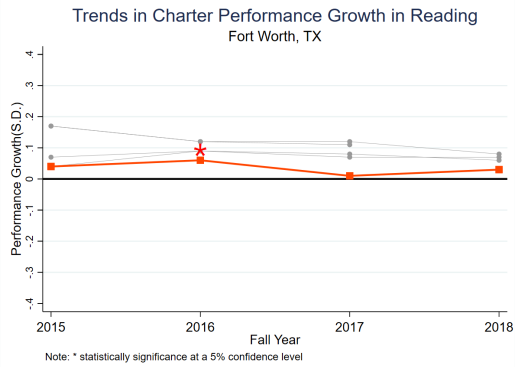
Economically disadvantaged students in charter schools also tend to perform better than average economically disadvantaged students in the state.

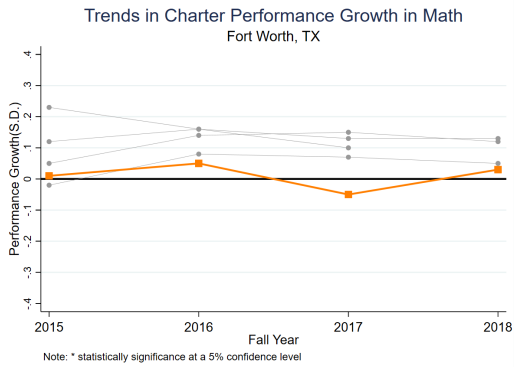
The pattern observed for groups examined above also applies to English language learner students and students receiving special education in charter schools in each city. However, ELL students and students with special education tend to show larger variation in the estimates due to a smaller number of students belonging to the group.

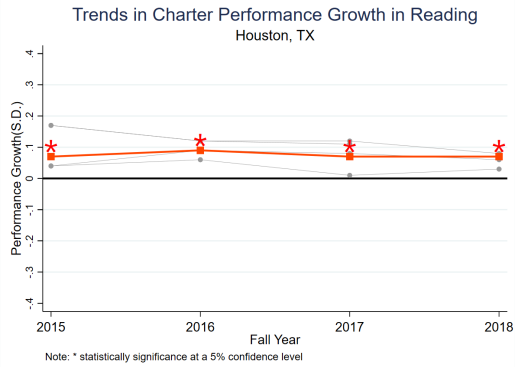
3.2 Charter School Performance Growth, Overall

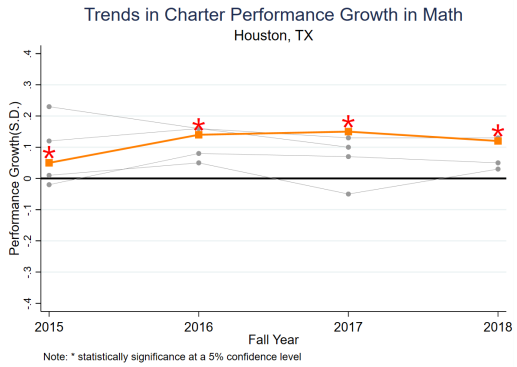


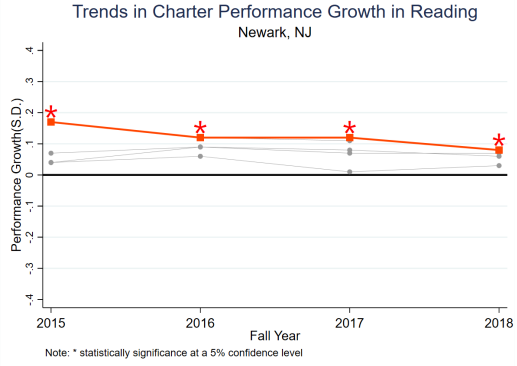


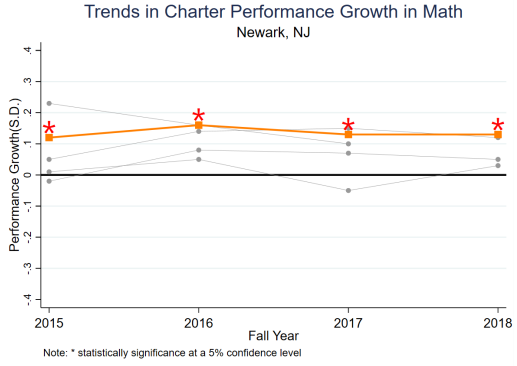






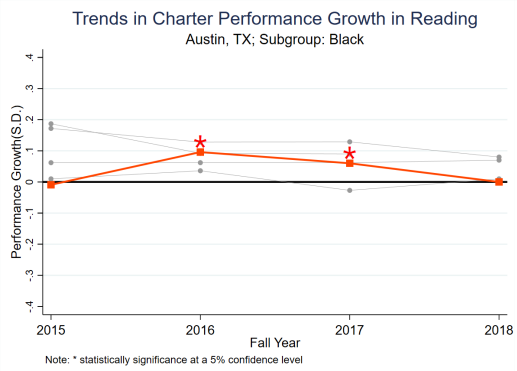


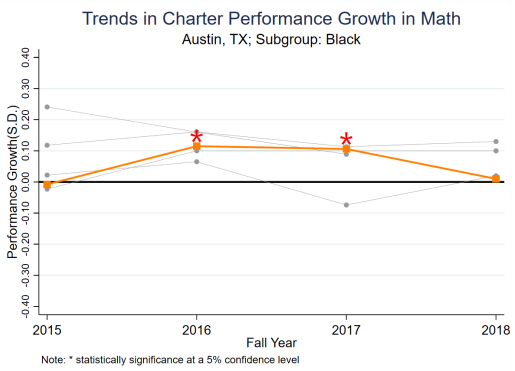


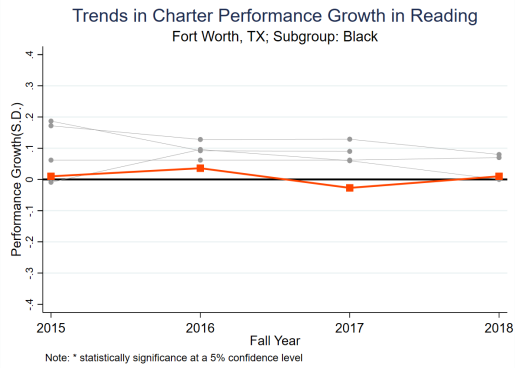


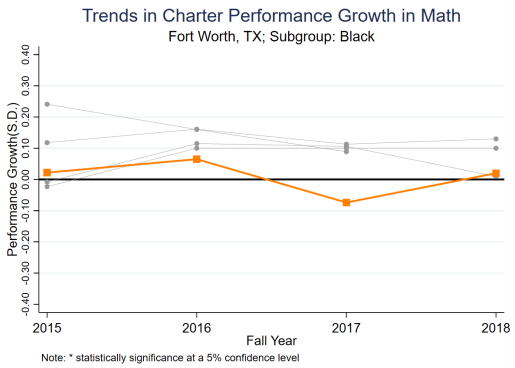
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

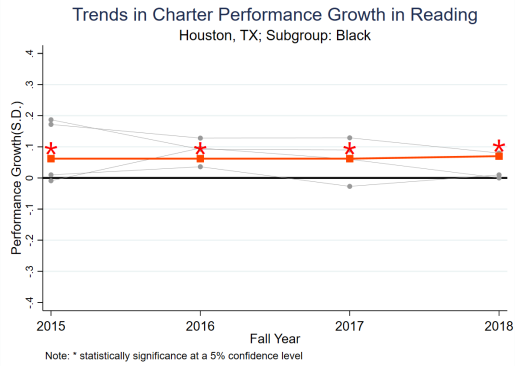
3.3 Charter School Performance Growth among Black Students

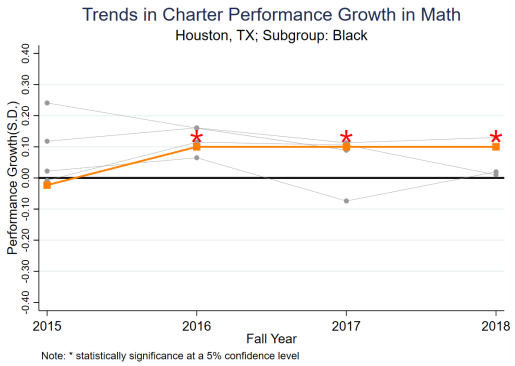


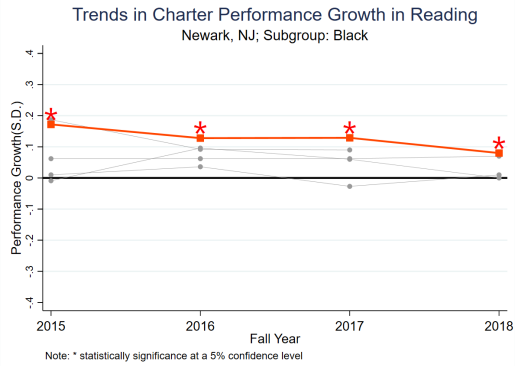


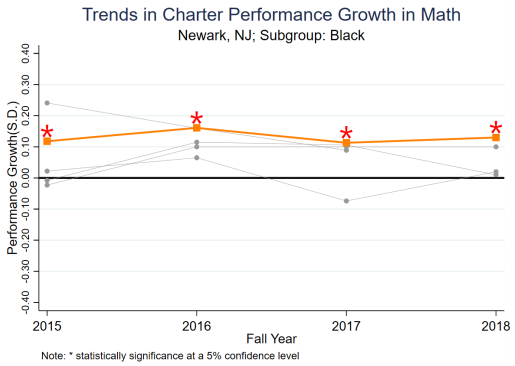






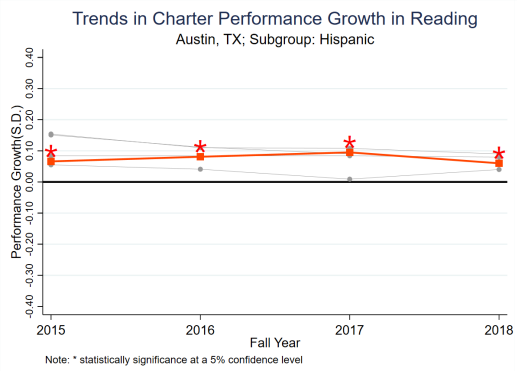


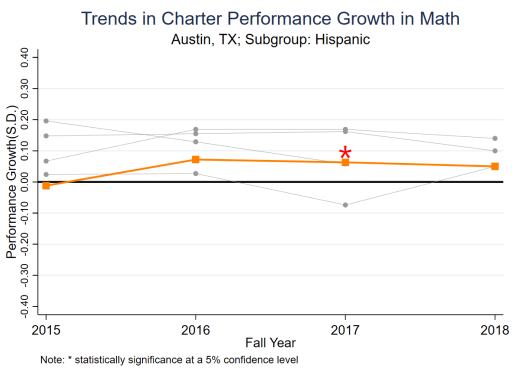


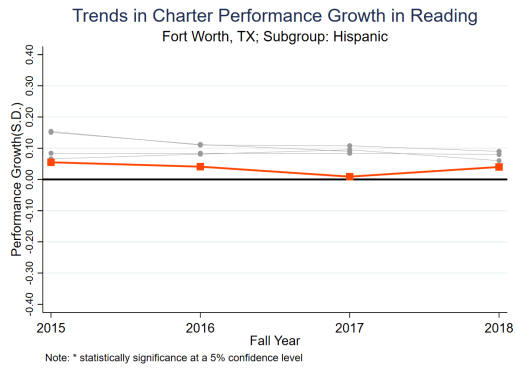


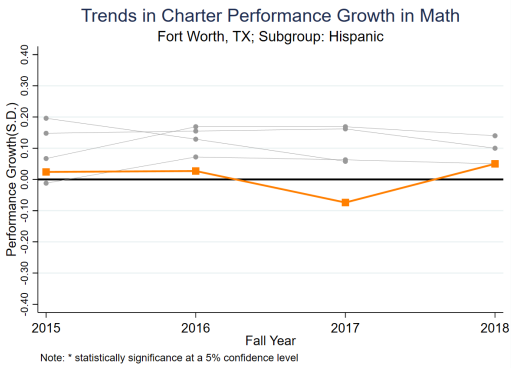
Note: The asterisk indicates statistically significant difference from state averages at $p<0.05$.

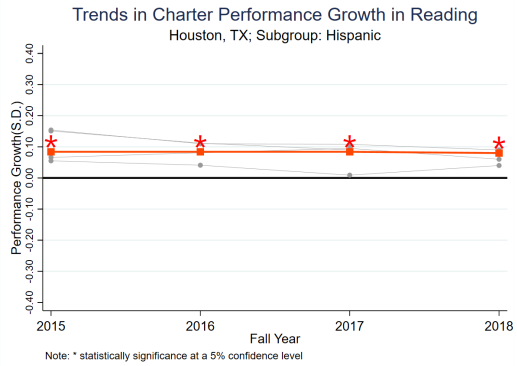
3.4 Charter School Performance Growth among Hispanic Students

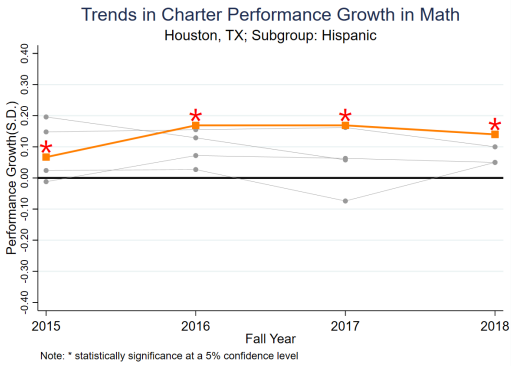


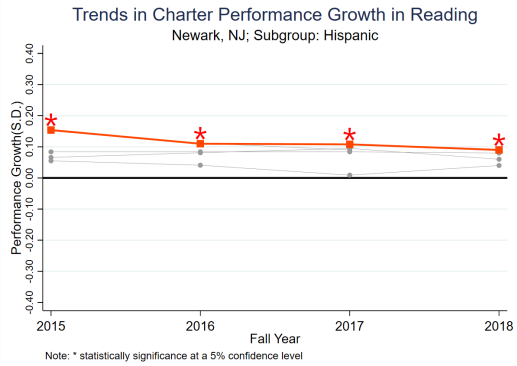


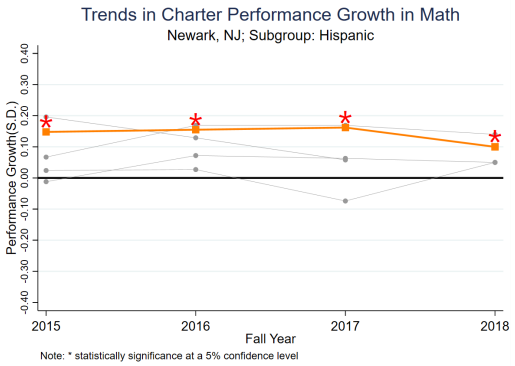






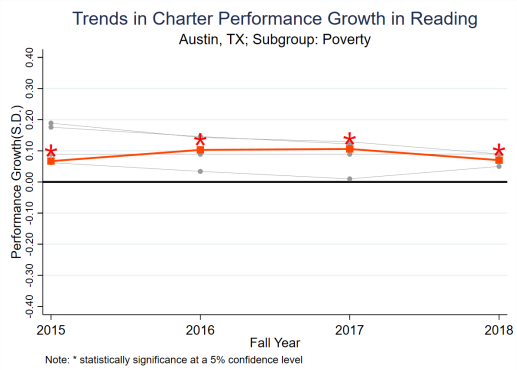


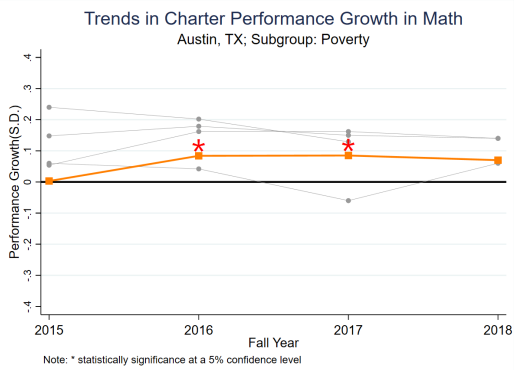


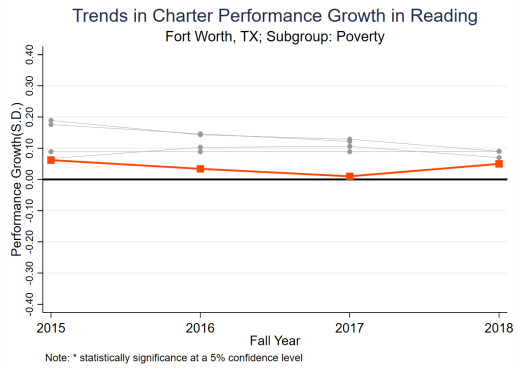


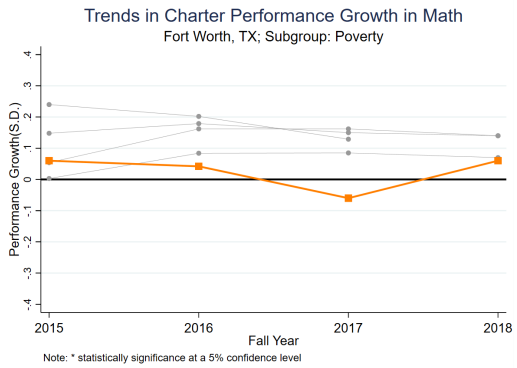
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

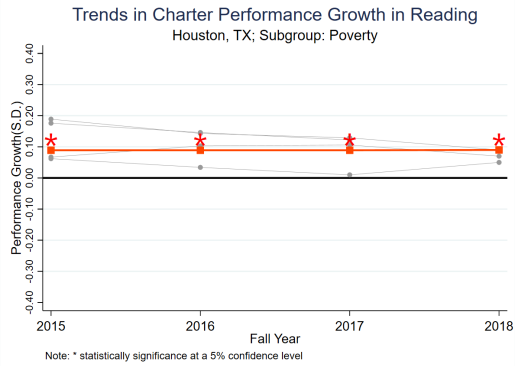
3.5 Charter School Performance Growth among Poverty Students

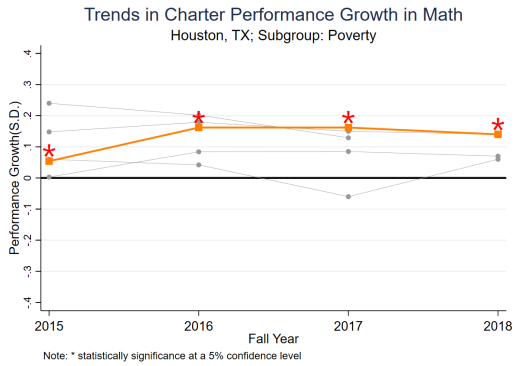


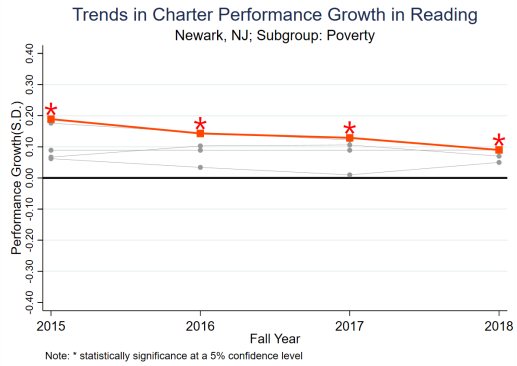


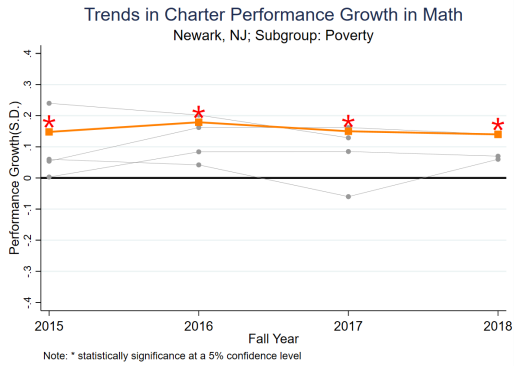






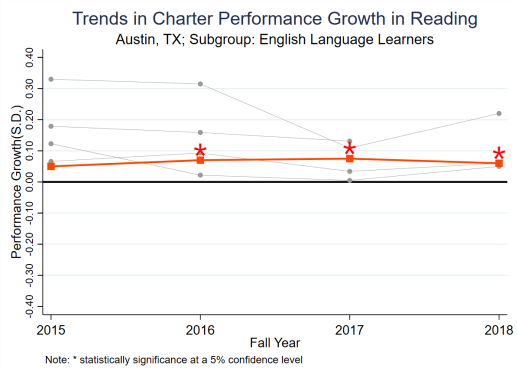


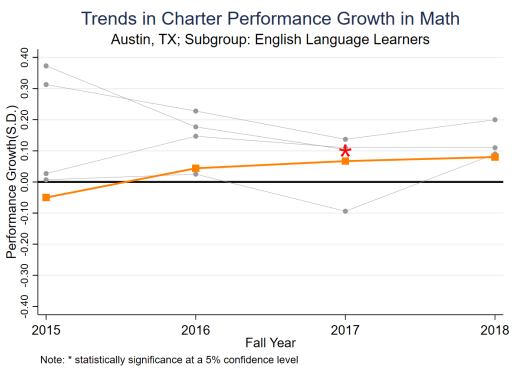


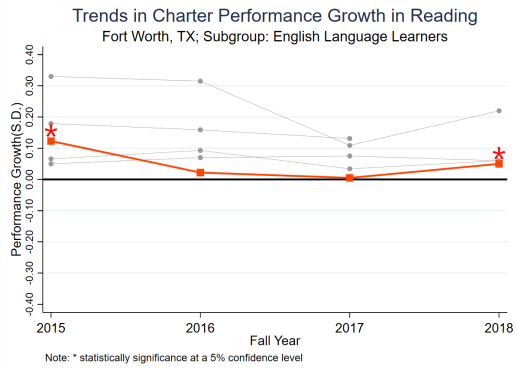


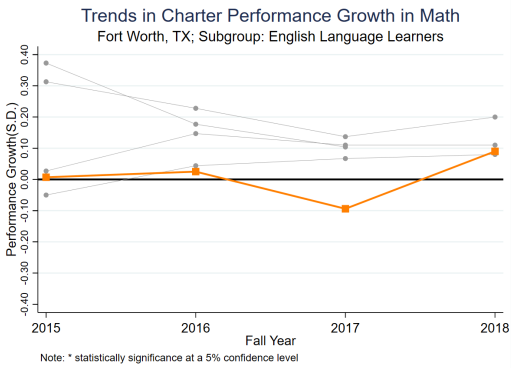
Note: The asterisk indicates statistically significant difference from state averages at $p<0.05$.

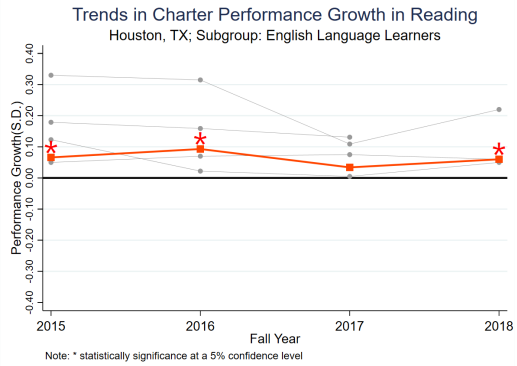
3.6 Charter School Performance Growth among ELL Students

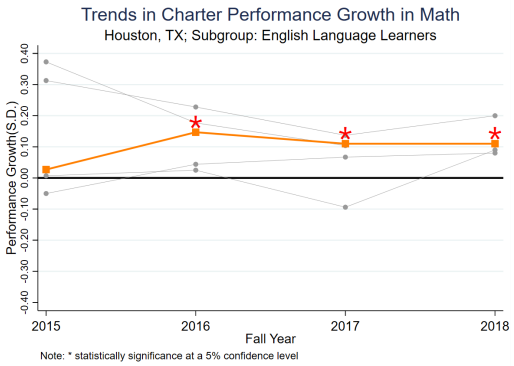


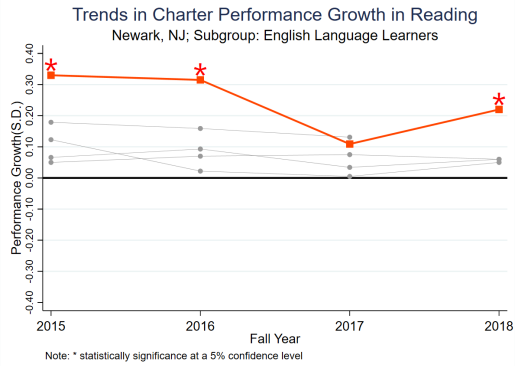


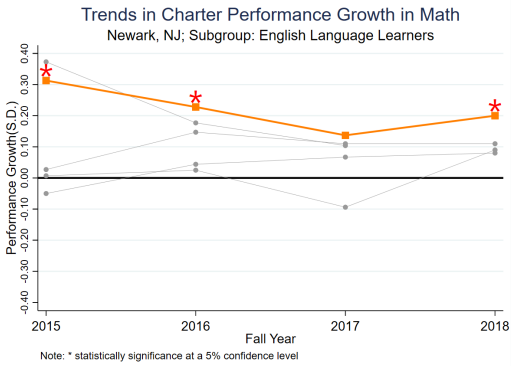






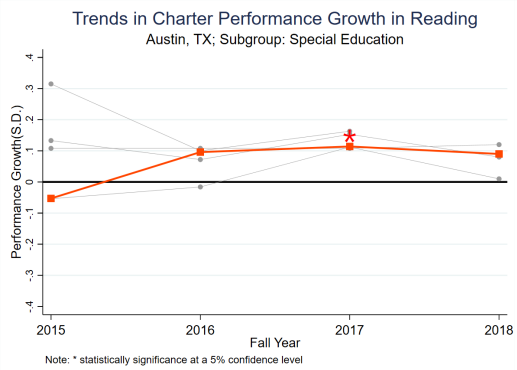


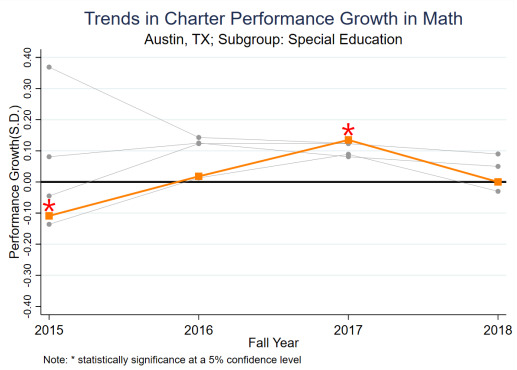


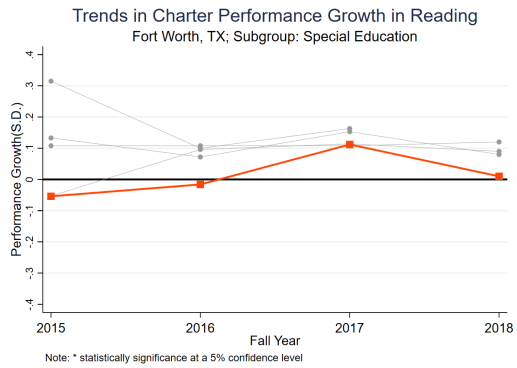


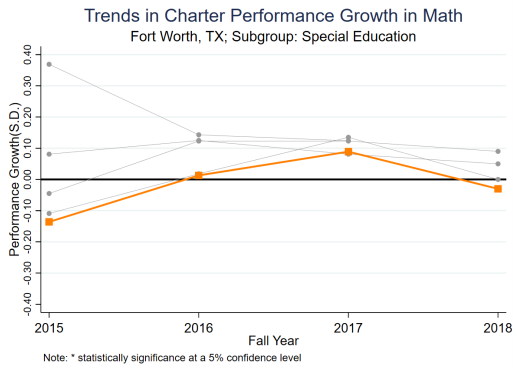
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

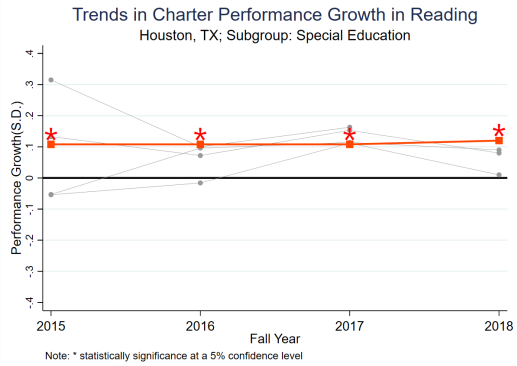
3.7 Charter School Performance Growth among Special Education Students

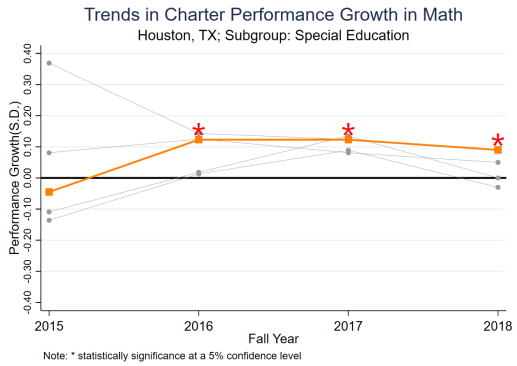


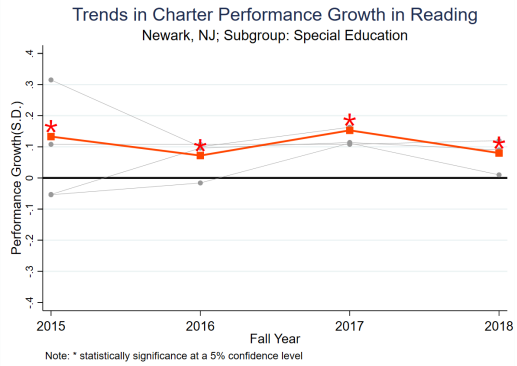


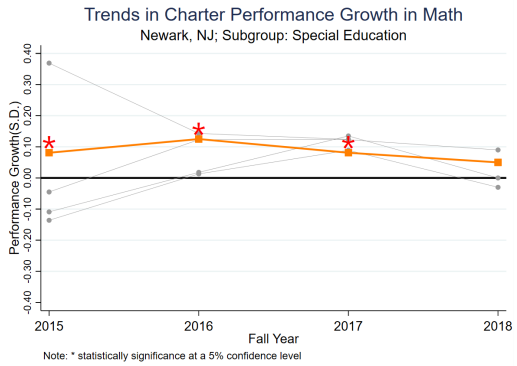












Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

4 Trends in Magnet School Performance Growth, by City

4.1 Summary

Magnet schools selectively admit students who meet certain admissions criteria. Across the cities studied, these schools have a strong positive impact on their students' performance growth. Three cohort 2 cities that had Magnet schools during the study window show strong positive performance growth in reading. Subgroup breakout trends are not presented for magnet schools due to the small number of students involved in the analysis.

4.2 Magnet School Performance Growth, Overall

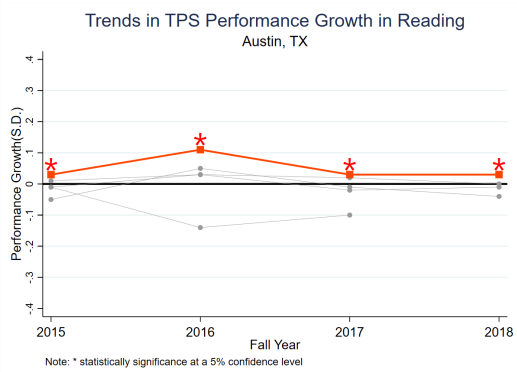
Note: The asterisk indicates statistically significant difference from state averages at $p<0.05$.

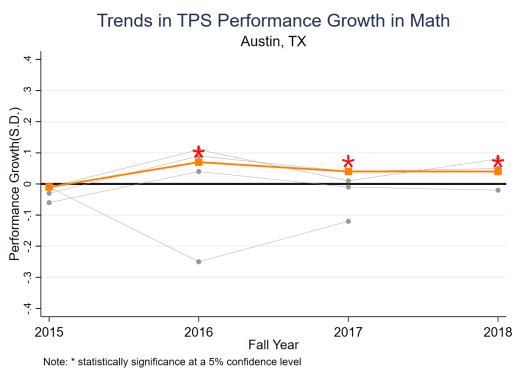
5 Trends in District School Performance Growth, by City

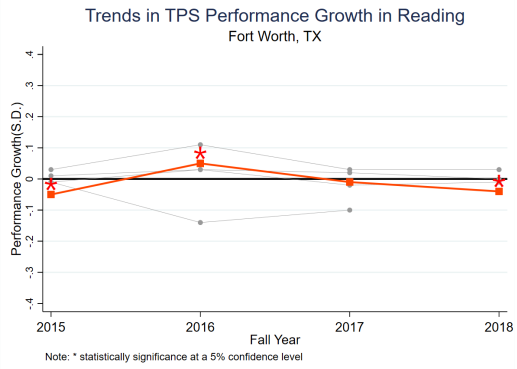
5.1 Summary

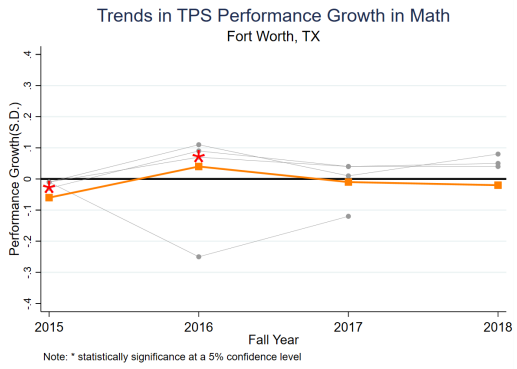
District schools in most cities included in this study show similar or positive overall performance growth than the corresponding state averages during the study window. The few exception is the Houston in a couple of growth periods, and Fort Worth in 2015 growth period, where it exhibited weaker performance growth than the state average in both reading and math.
Austin district schools have shown continued positive performance growth compared to the state average, while the subgroup trends in 5.2 to 5.5 show no consistent positive growth observed in the overall performance trend. The positive overall growth seem to be driven by the 50% of the non-black and non-Hispanic students that are not included in the subgroup analysis (see Table 1).

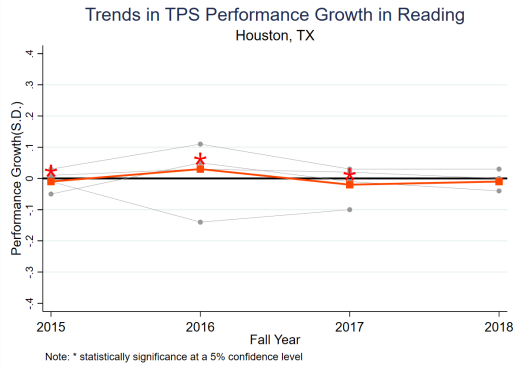
5.2 District School Performance Growth, Overall

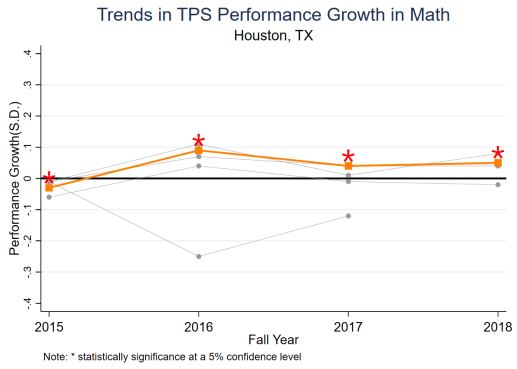


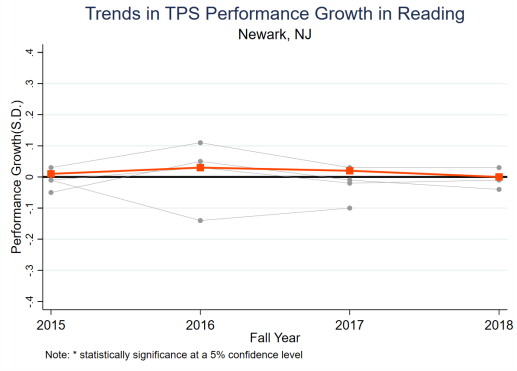


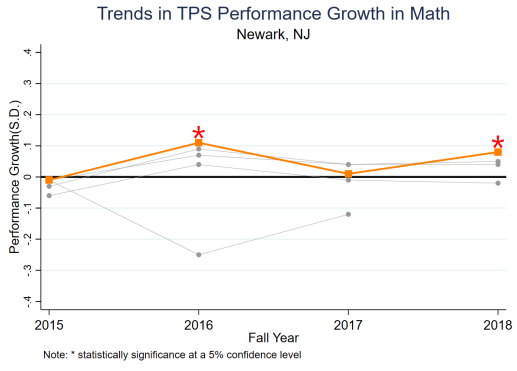






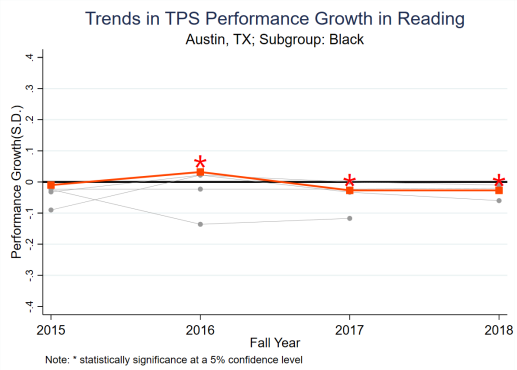


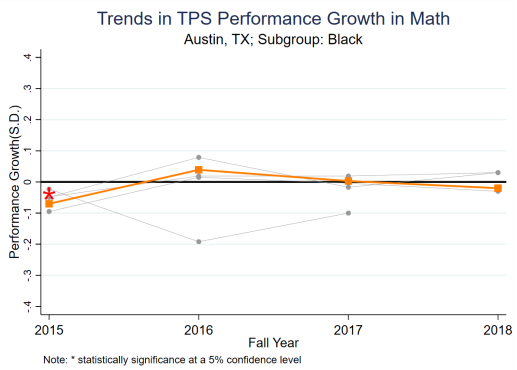


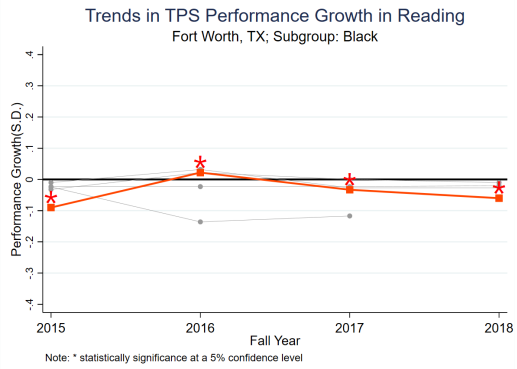


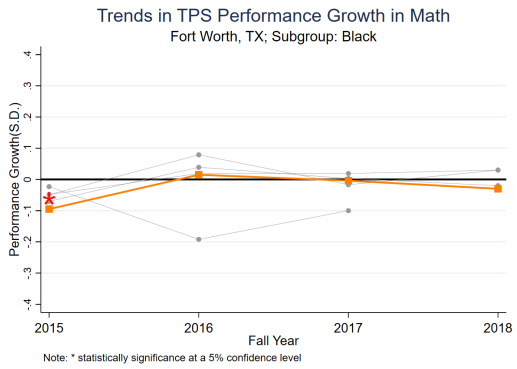
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

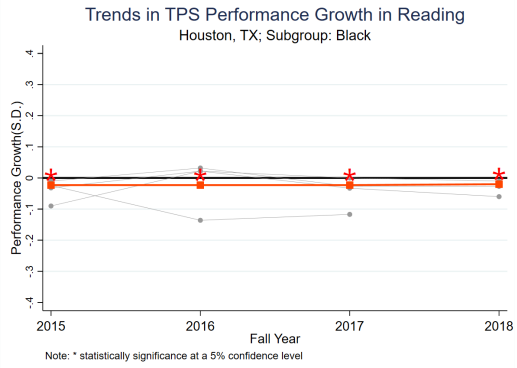
5.3 District School Performance Growth among Black Students

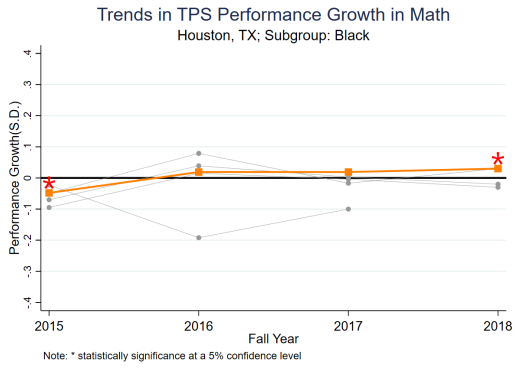


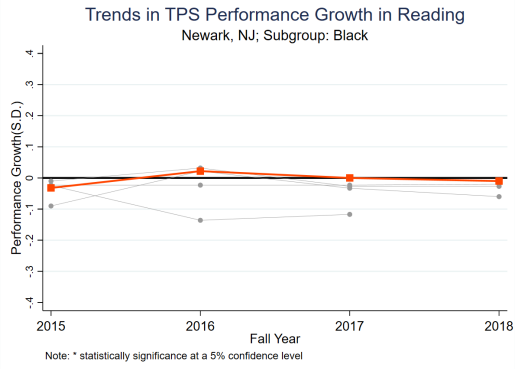


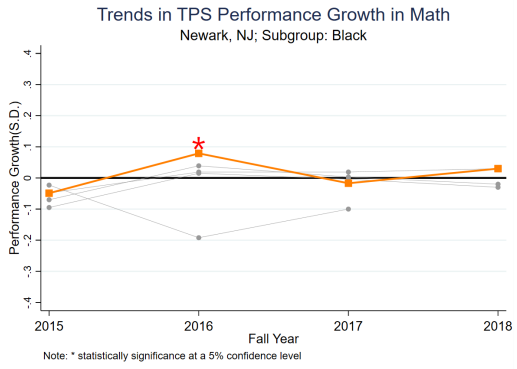






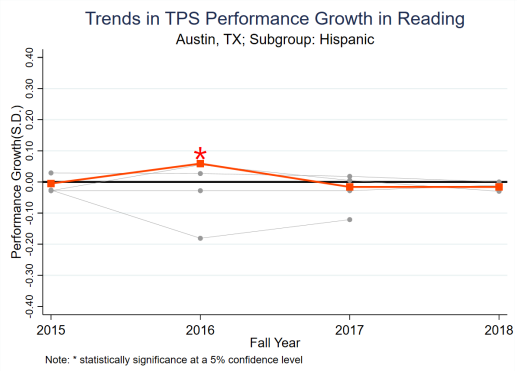


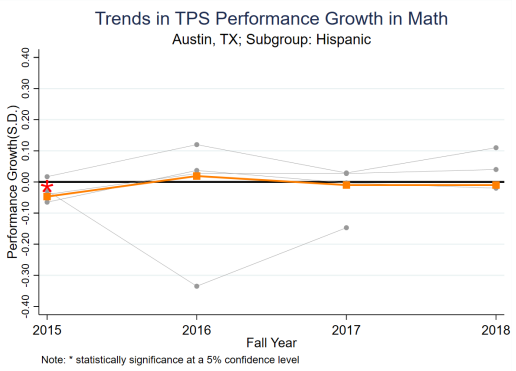


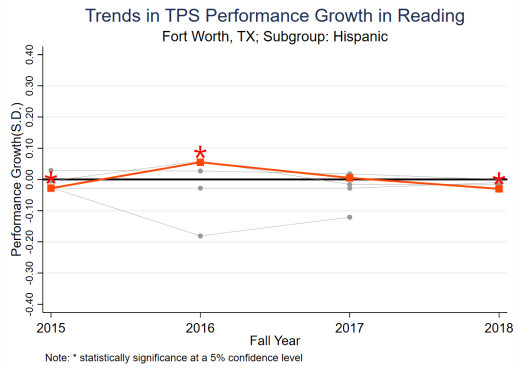


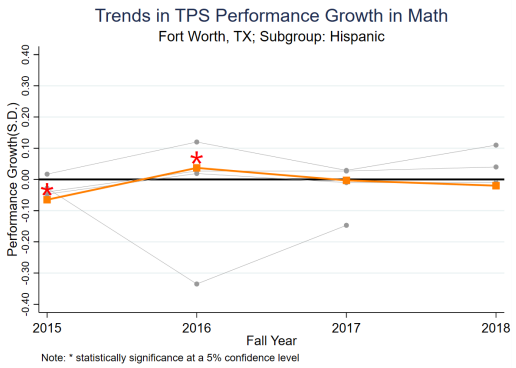
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

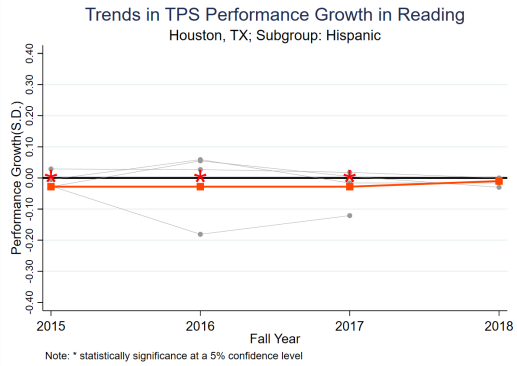
5.4 District School Performance Growth among Hispanic Students

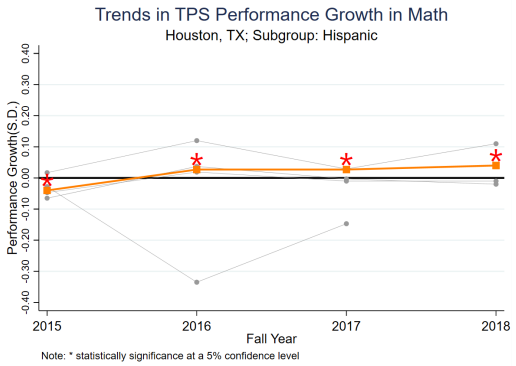


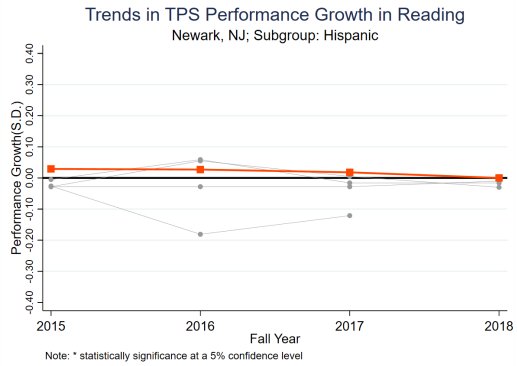


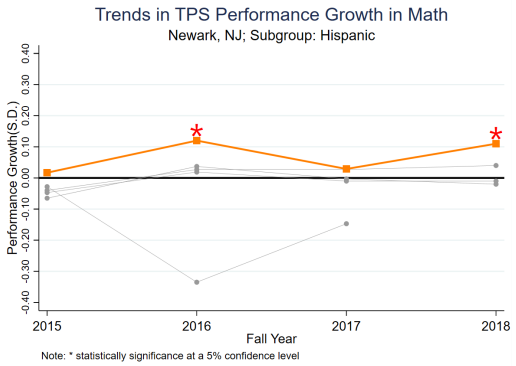






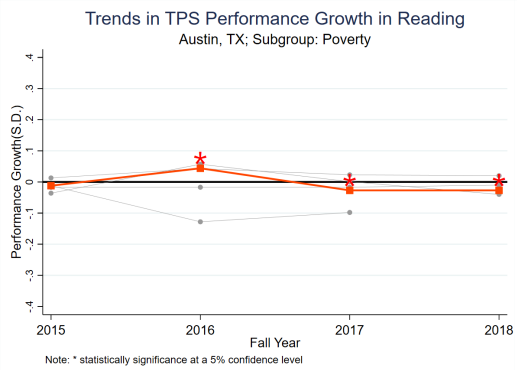


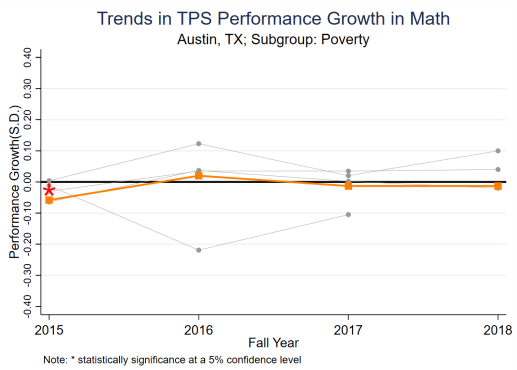


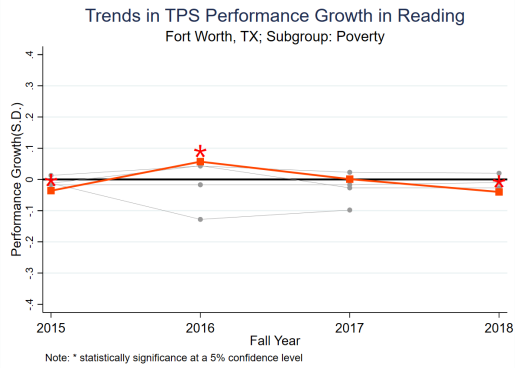


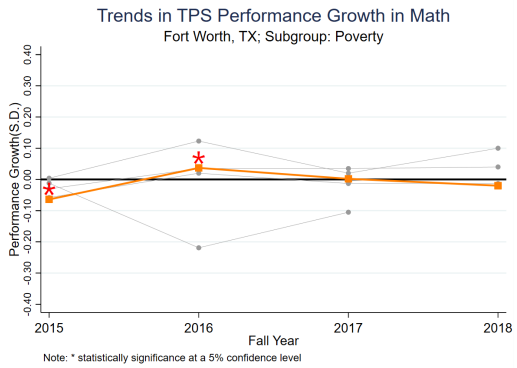
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

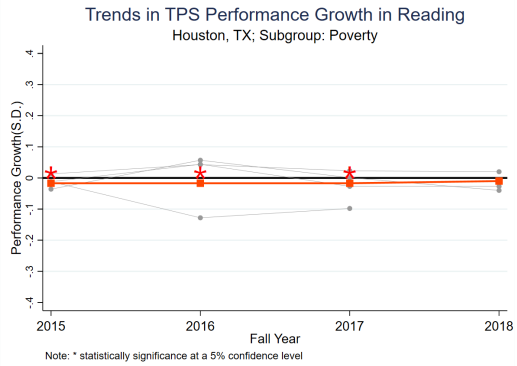
5.5 District School Performance Growth among Poverty Students

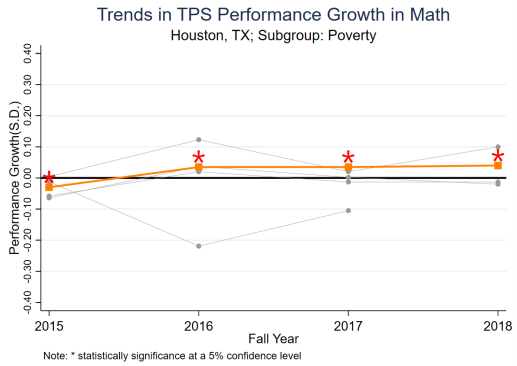


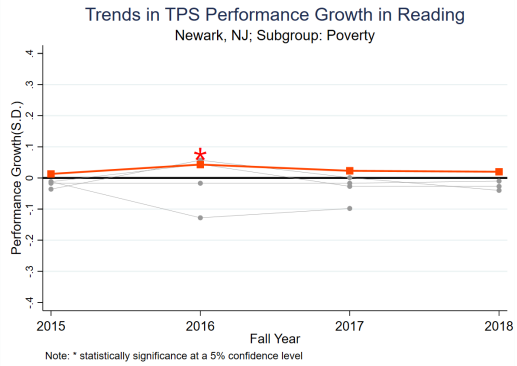


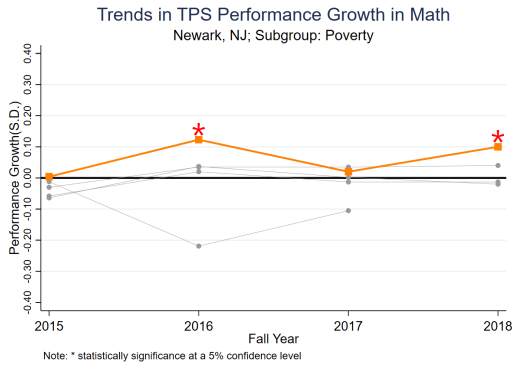






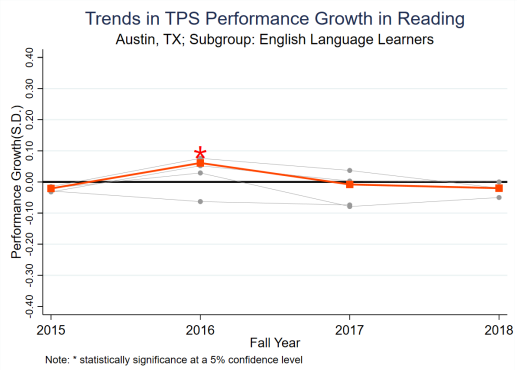


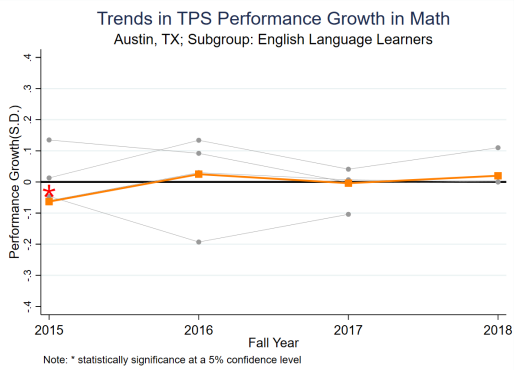


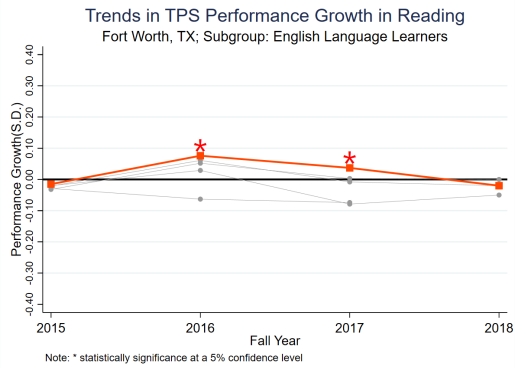


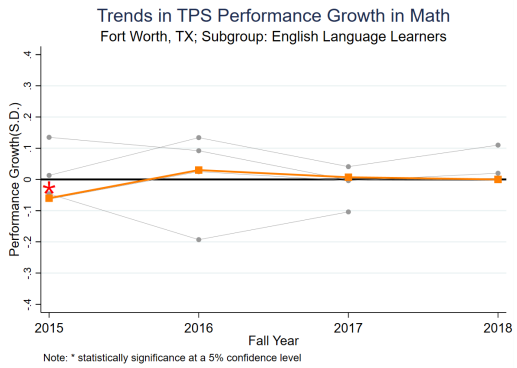
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

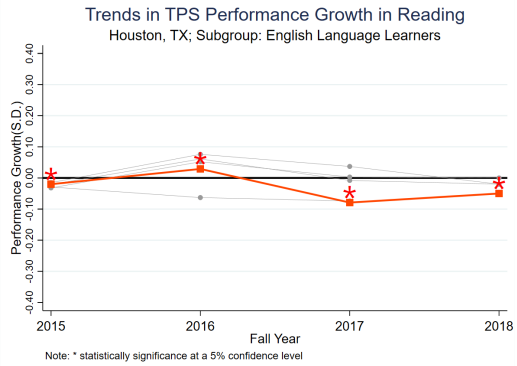
5.6 District School Performance Growth among ELL Students

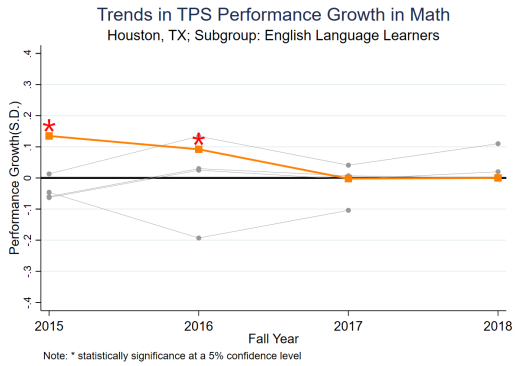


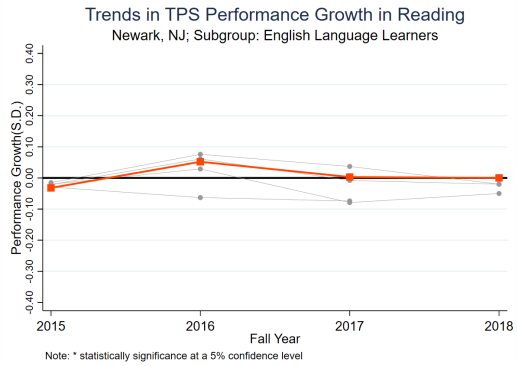


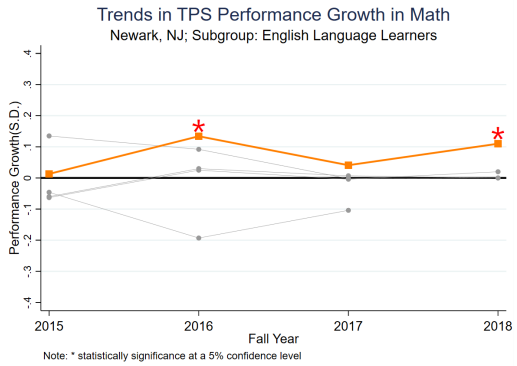






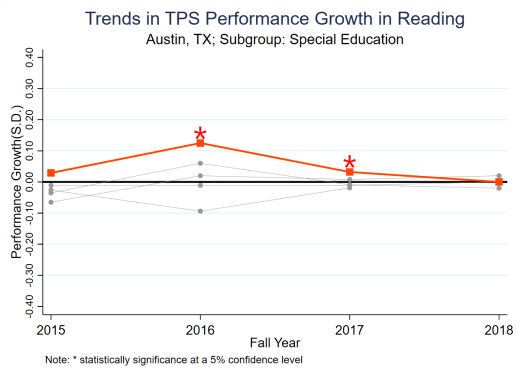


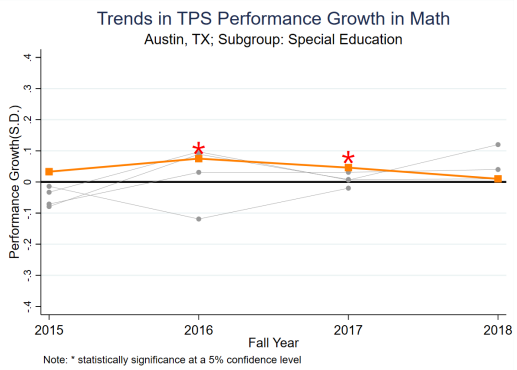


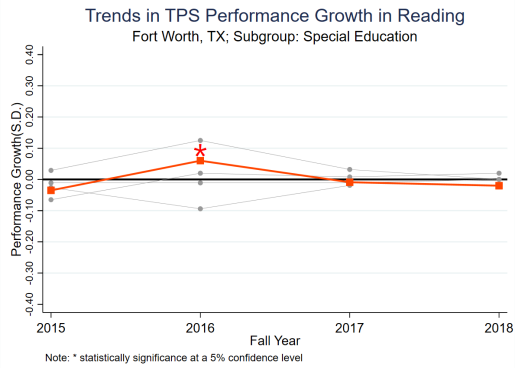


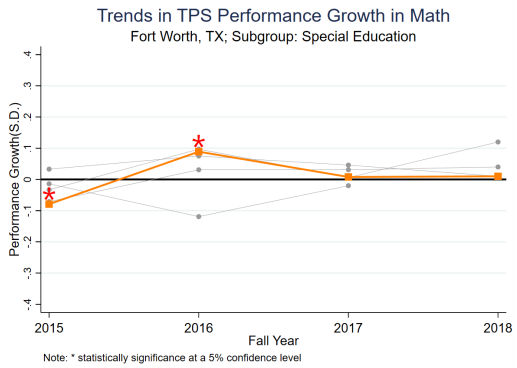
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

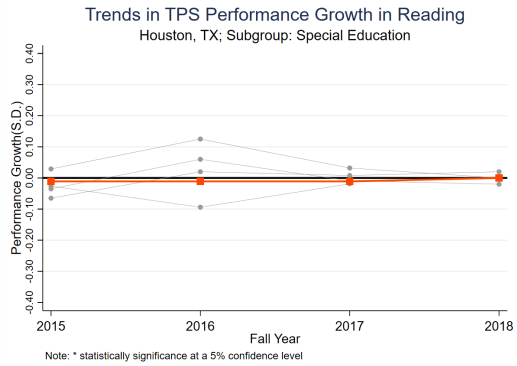
5.7 District School Performance Growth among Special Education Students

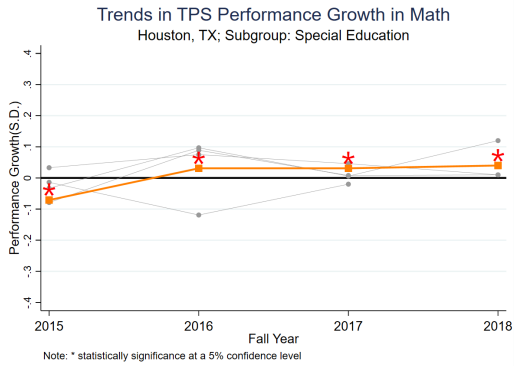


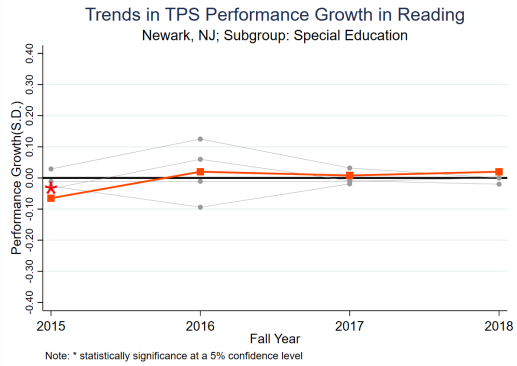


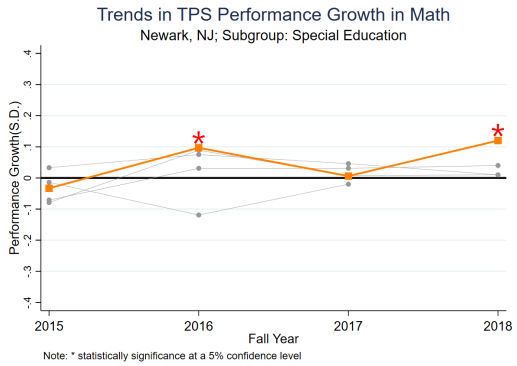












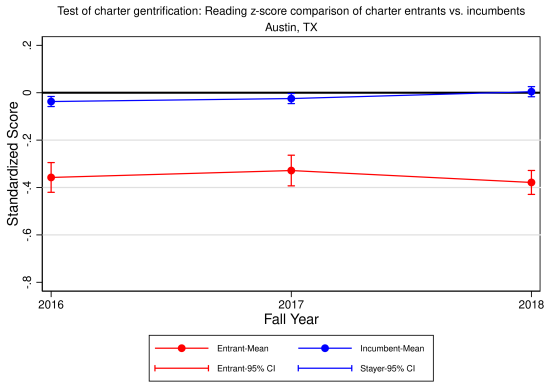
Note: The asterisk indicates statistically significant difference from state averages at p<0.05.

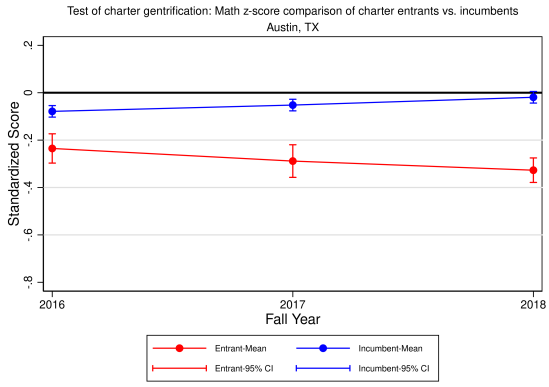
6 Test of Charter School Gentrification

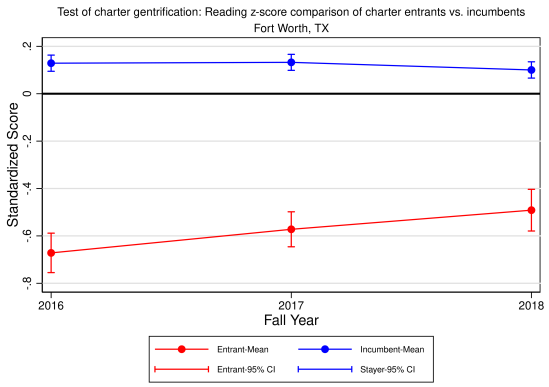
6.1 Summary

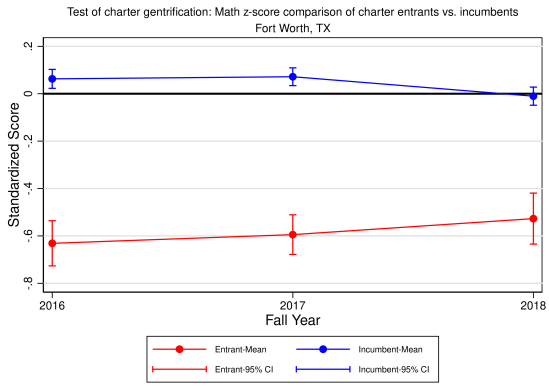
The graphs presented in this section show the achievement gap between students entering charter schools for the first time ("entrants") and those who have already been in the charter school for more than one year ("incumbents"). In all cities, charter school entrants have similar or lower overall academic achievement than charter school incumbents, which suggests that charter schools are not cream skimming, ie., enrolling students who are academically well prepared.

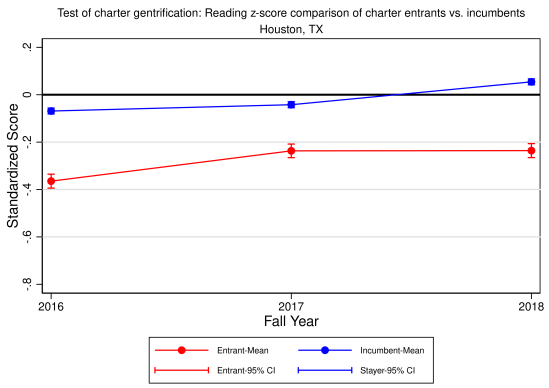
6.2 Comparison of Performance-level among Charter School Entrants vs. Incumbents

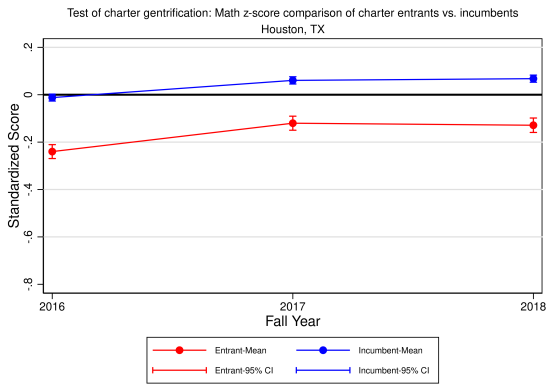


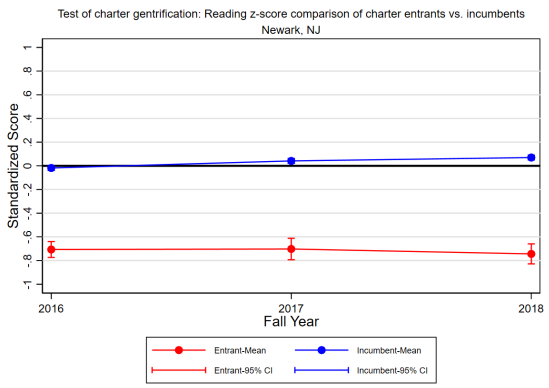


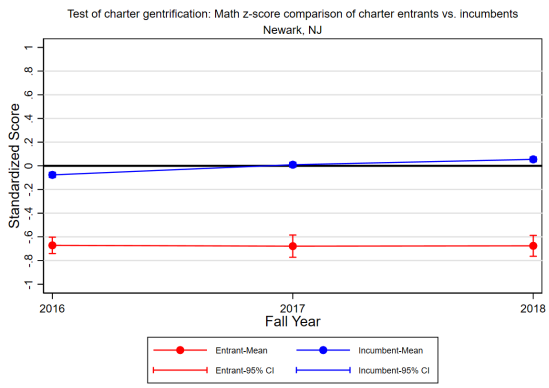












7 Discussion

Hundreds of billions of taxpayer and philanthropic dollars are invested in providing quality education to children in public schools each year, often aiming to narrow the persistent educational disparities between various groups in the population. This project is part of this larger effort. The student body served by the schools within the cities we examine in this study is composed mainly of low-income and minority students who often reside in underserved communities and lack access to quality education. The meta-analysis of academic performance growth trends presented in this report provides an opportunity for constructive discussion among stakeholders across the cities to implement evidence-based practices that will contribute to student learning in each city.

Pieces of evidence shown in this report suggest that the practices that are conducive to effective student learning are highly localized and don't necessarily conform to one silver-bullet solution. Despite the heterogeneous trends by city, the performance growth trends in many cities included in this study show that there are overall positive contributions that charter schools make to the learning growth of students they serve. Given the general features of these organizations, it indicates that schools' ability to find locally driven solutions to the locally identified problems and to allow flexibility in implementing a proposed set of remedies could be necessary conditions for successful student learning.[a]

We hope that the results of this report provide a solid foundation for constructive discussion on the performance of the schools in these cities by stakeholders invested in public education.

[a] Magnet schools show positive performance growth in many cities we examine. Because magnet schools have different admission criteria that serve small subsets of the general population, their results are not the primary focus in this report. The recent movements in eliminating the "exam" schools across the major cities in the nation seem to be in contrast to the pieces of evidence presented in this report, as it seems logical to suppose that the solutions that spring from the local and independent discussions would lead to a diverse set of localized solutions, rather than a uniform movement across the country to eliminate one type of school that serves the specific needs of certain groups in the student population.

References

M. A. Kraft. Interpreting effect sizes of education interventions. *Educational Researcher*, 49(4):241–253, 2020.

U.S. Department of Education. What works clearinghouse procedures and standards handbook, version 5.0. *What Works Clearinghouse*, 2022.

Acknowledgements

This report was made possible by the generous financial support of the City Fund. We are particularly thankful to state educational agencies who provided data and inputs in verifying the list of public schools in selected cities. Please note that the funder and educational agencies do not necessarily agree with our conclusions and are not responsible for any errors in the report.

State Educational Agencies

New Jersey Department of Education
Texas Education Agency
Texas Higher Education Advisory Board

Fort Worth Education Partnership
Good Reason Houston
KLE Foundation
New Jersey Children's Foundation
Texas Schools Project

Note: City-specific reports are available to download at https://credo.stanford.edu/city-studies/

CREDO at Stanford University was established to improve empirical evidence about education reform and student performance at the primary and secondary levels. CREDO at Stanford University supports education organizations and policymakers in using reliable research and program evaluation to assess the performance of education initiatives.