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Online Supplement for "The Effect of Workplace Raids on Academic Performance: Evidence from Texas"

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A Supplemental Materials

A.1 Data Note

Replication data and code can be found at https://osf.io/n7xzy/.

A.2 Individual math and reading scores

In all the analyses above, I use a measure for the passing rate and scaled score of students that combines their performance in the math and reading test. Specifically, for each school s and year t, I calculated the following measure:

$$Y_{\text{Combined}} = \frac{Y_{\text{Reading}} \times N_{\text{Reading}} + Y_{\text{Math}} \times N_{\text{Math}}}{N_{\text{Reading}} + N_{\text{Math}}} \tag{1}$$

Where Y is either the scaled score or the passing rate in the STAAR test and N refers to the number of students taking each test. Although the main results use the combined measure, I also performed each of the analyses on the individual math and reading tests. Table B.1 shows the results of the main difference-in-difference and triple difference models using the same control groups described above. The direction and magnitude of the effect is similar for both subjects, although the estimate of the effect on the math test is larger in most of the models. These results run contrary to previous research on the effects of community violence and aggressive policing on academic performance which show larger effects on reading assessments and smaller or no effects on math (Laurito, Lacoe, Schwartz, Sharkey, and Ellen, 2019; Legewie and Fagan,

2019; Schwartz, Laurito, Lacoe, Sharkey, and Ellen, 2021; Sharkey, Schwartz, Ellen, and Lacoe, 2014). Similarly, Kirksey and Sattin-Bajaj (2023) find larger decreases in reading than math following a workplace raid, and Bellows (2019) finds that the activation of the Secure Communities immigration enforcement program led to larger decreases in ELA scores. Although it's unclear why exposure to these events and policies would impact reading scores more than math scores, the fact that the large-scale workplace raid in Allen had strong negative effects on the math assessment show there is heterogeneity in the educational effects of community violence, policing, and even across different immigration enforcement events.

A.3 Alternative Matching Strategies

As specified above, to find control schools, I first identified all non-charter schools in the same NCES district types (suburban-large) and in any of the five proximate regions. Based on estimates from the ACS, I excluded all schools within a 27.7 minute driving range of the raid. Then I used the nearest-neighbor matching algorithm to select the two "nearest" control schools based on a fuzzy match on the following school-level characteristics: share of Hispanic students, share of economically disadvantage students, and share of students with limited English proficiency, which I averaged across the 2015–2019 analysis period. I also tested the robustness of our estimates to using seven alternative matching strategies to select control schools. In these seven alternative strategies I: (1) sampled matches from all schools in regions 7, 8, 10, 11, and 12 regardless of their NCES district type, (2) sampled matches from all schools in a "suburban-large" NCES district type, regardless of the region, (3) added two new matching variables: the share of white students and the total number of students in the school, (4) matched each school to four control schools (instead of two), (5) matched each school to one control schools, (6) matched using only the values of the variables in the 2018-2019 school year rather than averaging the values across the 2015–2019 period, and (7) matched using only the values of the variables from the 2017-2018 school year. As Figure C.4 shows, the estimate for the effect of the raid on each of the performance measures is largely consistent across these different matching strategies.

A.4 Measuring the effect on raw scores

For all the STAAR performance analyses, I measure the effect of the raid on passing rates and scaled scores, a conversion of the raw scores that adjust for the difficulty level of the questions on the text. The Texas Education Agency uses scaled scores to allow direct comparison of student performance across different test administrations, and the scaled score assigned to a raw score may change slightly from one year to the next

(Texas Education Agency, 2023). Among other reasons described in the Data and Methods section, I used scaled score for these analyses because scaled scores are commonly used in the student assessment result reports created by the TEA and these were readily available in the publicly available data I used. However, because the difficulty of test questions is assessed based on students' performance, it is possible that the effects of the raid could be captured by the scaling used in 2019. Relatedly, since scores are scaled by year and grade level, it may be harder to interpret effect sizes. To address these concerns, I conducted each analysis using raw scores from the test as the outcome variable. Specifically, for Hispanic and white students in each school, I use the average percent of questions answered correctly. Unlike the scaling procedure used by the TEA, this measurement of academic performance is independent of the treatment because the test questions had to be developed before the raid in Allen took place.

The panel on the left of Figure C.8 presents raw trends in the percent of questions answered correctly in the individual and combined math and reading STAAR assessments for the control and treated groups. While the total number of questions in each test varied slightly across subjects and years, all tests were between 38 and 52 questions. Figure C.8 provides some evidence to support the parallel trends assumption, particularly for the control group which uses propensity score matching. As is true for the scaled scores and passing rates, after the workplace raid there is a relative decrease in the raw scores of Hispanic students in Allen ISD compared to the control groups. I measure this relative decrease using the same difference-in-difference and triple difference strategies outlined in Equations 3, 4, and 5 in the main text but using raw scores as the outcome variable. Table B.3 shows a negative and statistically significant decrease in the percent of questions answered correctly. Each strategy yields slightly different effect estimates but the point estimates range from 4.75 percentage points to 8.85. As was true for the scaled scores, the decrease in raw scores is larger for the math assessment.

A.5 Potential bias due to out-migration

Workplace raids and similar immigration enforcement operations have been shown to increase absenteeism and out-migration among Hispanic students (Bellows, 2021; Cervantes, Ullrich, and Meraz, 2020; Dee and Murphy, 2019; Heinrich, Hernández, and Shero, 2023; Kirksey, Sattin-Bajaj, Gottfried, Freeman, and Ozuna, 2020). A potential threat to the validity of this analysis is that the Hispanic students affected by the raid and observed in the pre-treatment testing years were absent during the administration of the test or left their school entirely. Based on academic performance reports issued by the Texas Education Agency, 100% of Hispanic students in Allen took the STAAR assessments in 2019 (Texas Education Agency, 2019), indicating

the raid did not lead to decreases in test participation among enrolled students. While this eases worries about absenteeism potentially biasing the results, out-migration remains a concern because students who leave their school are not considered enrolled and are not counted in the district's STAAR participation rate.[1]

To address this potential issue, I conduct two analyses. First, I estimate the raid's effect on Hispanic student enrollment using a similar difference-in-differences strategy as the main analyses above, finding no change in Allen ISD relative to control schools. While these results provide evidence that there wasn't a significant out-migration of Hispanic students in Allen ISD relative to control schools, it could still be the case that some Hispanic students left temporarily, potentially relocating to a different district to finish the 2018-2019 school year but returning the following academic year. In this case, performance data collected in May 2019 would still be impacted by this attrition problem. I proceed by using research by Dee and Murphy (2019) to estimate the percentage of students who might have left after the raid and bound the scores they would have received using extreme STAAR score values. I show that the partially identified effect of the raid remains negative. This eases concerns that the main results presented in the paper are driven by the out-migration of students impacted by the raid.

A.5.1 Effects of the raid on Hispanic student enrollment

First, using the same set of nearby schools from the main analyses above (see Strategy 2 in the main Data and Methods sections), I estimate the same difference-in-differences specified in Equation 3 in the main text, but I set the outcome variable y_{rst} to the total number of students from racial-ethnic group r in school s at time t. The data is collected in October of each year, and I use observations from 2014 to 2019. As clarified in the Data and Methods section, the 2014–2019 enrollment data provided by the TEA excludes students who are served for less than two hours a day (e.g., they attend a private school but receive an hour of speech therapy in Allen ISD every week). The students excluded from this measure are also excluded from the STAAR data for the district, so this measure is more relevant to the analysis.

As in the analyses above, the main identifying assumption is that the student enrollment trends in nearby schools in October 2019—approximately six months after the raid—match the trend that schools in Allen ISD would have followed if the raid had not taken place. To validate this parallel trends assumption, I plot raw trends in Hispanic student enrollment from 2014 to 2019 as well as estimates from an event study study model which matches the one specified in Equation 6 in the main text but using enrollment as the outcome

[1] I obtained information regarding how participation rates are calculated using the Texas Academic Performance Report glossary, available in the replication package.

variable. The panel on the left of Figure C.9 shows the average number of Hispanic students enrolled followed a similar trends for treated and control schools in the years before and after treatment. If the workplace raid had led to decreases in the number of Hispanic students in Allen ISD, we would expect enrollment in treated schools relative to control schools would decrease, but this does not appear to be the case. Consistent with these raw trends, results from the event study in Figure C.9 show the difference in enrollment between the treated and control groups does not significantly change from the one observed in 2018. The point estimate for the observations after the workplace raid suggests there was an increase in the average number of Hispanic students in Allen ISD relative to the difference observed in 2018, but the estimate is not significantly greater than 0. Accordingly, results from the difference-in-differences estimation presented in Table B.4 show the effects of the raid on Hispanic student enrollment are not statistically significant at conventional levels. These results provide no evidence to suggest the raid impacted the number of Hispanic students in Allen ISD.

A.5.2 Partial identification

Rather than assuming there was no out-migration of students due to the raid, I can instead partially identify the effects of the raid given some rate of out-migration by using the range of possible scores and passing rates for the missing group. For all the main difference-in-differences analyses above, the estimand I'm targeting is the average treatment effect on the treated (ATT). The ATT tells us the expected difference in the performance of Hispanic students in Allen ISD if they were exposed to a raid and their performance if they were not exposed to it. Formally, the ATT can be expressed as:

$$ATT = E[Y_1(Post) - Y_0(Post)|D = 1]$$

Where $Y_1(Post)$ and $Y_0(Post)$ represent the potential outcomes under treatment and control, respectively, in the period after the raid ($Post$) for Hispanic students in Allen ISD (D=1). The parallel trends assumption is that the difference in potential outcomes under control between the pre-treatment and post-treatment period is the same for the control ($D = 0$) and treated schools ($D = 1$), i.e.,

$$E[Y_0(Post) - Y_0(Pre)|D = 1] = E[Y_0(Post) - Y_0(Pre)|D = 0]$$

Under this assumption, we can rewrite the ATT as:

$$
\begin{aligned}
ATT &= E[Y_1(Post) - Y_0(Pre)|D=1] - E[Y_0(Post) - Y_0(Pre)|D=0] \\
&= E[Y(Post) - Y(Pre)|D=1] - E[Y(Post) - Y(Pre)|D=0]
\end{aligned}
$$

If the raid caused an out-migration of Hispanic students, the ATT would be biased because the students captured by $E[Y(Post)|D=1]$ would be a non-random subset of those captured by $E[Y(Pre)|D=1]$. Importantly, $E[Y(Post)|D=1]$ is the only term we need to worry about since all other terms happened before treatment or in a non-treated group. The term of interest can be expressed as:

$$
\begin{aligned}
E[Y(Post)|D=1] = & E[Y(Post)|D=1, \text{Migrated}=1]P(\text{Migrated}|D=1) + \\
& E[Y_1(Post)|D=1, \text{Migrated}=0](1 - P(\text{Migrated}|D=1))
\end{aligned}
$$

Thus, because the data only captures the scores and passing rates of students who remained in Allen ISD, $E[Y(Post)|D=1]$ will be biased when $P(\text{Migrated}|D=1) > 0$. The direction of this bias will depend on the magnitude of $E[Y(Post)|D=1, \text{Migrated}=0]$ relative to $E[Y(Post)|D=1, \text{Migrated}=1]$. As such, it is not enough to reason about the effect of the raid on the students who left and those who stayed—even if we assumed the raid had stronger negative effects on students who out-migrated, the ATT could still be downwardly biased if those students had higher potential outcomes under treatment than those who did not out-migrate. In general, there are three possible cases:

	Direction of bias for ATT
$E[Y(Post)\|D=1, \text{Migrated}=1] > E[Y(Post)\|D=1, \text{Migrated}=0]$	Downward
$E[Y(Post)\|D=1, \text{Migrated}=1] = E[Y(Post)\|D=1, \text{Migrated}=0]$	Unbiased
$E[Y(Post)\|D=1, \text{Migrated}=1] < E[Y(Post)\|D=1, \text{Migrated}=0]$	Upward

Students who leave an area following a workplace raid likely have different characteristics than those who stay. For example, because these are students whose parents might have been detained or whose families are worried about deportation, they might be more likely to have undocumented family members or be undocumented themselves. Would these students perform better after being exposed to a raid than the students who do not out-migrate? Research on this question is mixed. Various studies find that Hispanic immigrant children enter school with less developed academic skills and, although they make gains over time, third generation Hispanic students still outperform their first and second generation peers (Glick and

Hohmann-Marriott, 2007; Hull, 2017). Similarly, recent work shows children of unauthorized immigrant perform worse than children of authorized immigrants in math, spelling, and reading (Brabeck, Sibley, Taubin, and Murcia, 2016). Finally, undocumented parents are more likely to have poor work conditions, low income, and suffer from psychological distress, all of which are linked to lower academic outcomes in children (Yoshikawa, Kholoptseva, and Suárez-Orozco, 2013). If this research applies to the case of Hispanic students in Allen ISD, then students who out-migrated would likely have performed worse on the STAAR test than those who stayed, and the estimates I present in this paper for the effects of the raid would be upwardly biased—i.e., the effects of the raid are more severe than what I show. However, there is also some evidence supporting an immigrant advantage in academic performance with Hispanic immigrants students sometimes outperforming their native-born peers in GPA (Padilla and Gonzalez, 2001), grades (Kao and Tienda, 1995), and reading and math test scores (Kao and Tienda, 1995; Schwartz and Stiefel, 2006). If students who out-migrated would have performed at a higher level than those who stayed, the estimates I have for the ATT would be overstating the effects of the raid, raising concerns about the validity of these findings.

In the absence of conclusive evidence about which of the three cases above is most likely to be true, I instead bound the effects of the raid by estimating extreme possible values for $E[Y(Post)|D = 1]$. For passing rates, I assume 0% and 100% of students who out-migrated passed the test. For scores, I set the minimum using the score at the 1 percentile (1389 for math and 1270 for reading) and the maximum using scores at the 99th percentile (2051 for math and 1916 for reading). I calculate a weighted average of these using the number of students who took the math and reading test in each school. Lastly, I set $P(\text{Migrated}|D = 1)$ to 5% based on work by Dee and Murphy (2019) which finds the adoption of restrictive immigration policies reduced Hispanic student enrollment by 4.9% in the year the policy was adopted.

Figure C.10 plots the result of the procedure above. For the pre-treatment period, the figure matches Figure 4 in the main results section, showing raw trends in scores and passing rates for Hispanic students in Allen ISD and control groups. In the post-treatment period, I show the range of possible values for the treatment group (shaded in gray). At the upper bound, the decrease in performance for Hispanic students in Allen relative to the control group is small but appears to persist. Table B.5 provides further evidence for this. Even assuming the students who out-migrated would have performed at the 99th percentile if they had stayed in Allen, the estimate for the effect of the raid remains negative and, in the case of passing rates, statistically significant.

Overall, the 100% participation rate on the STAAR test and null effects of the raid on Hispanic student

enrollment suggest absenteeism and out-migration are unlikely to be important sources of bias in the analyses presented here. However, even if there was an out-migration such as the one recorded in Dee and Murphy (2019) and we assume those students would have performed far better than the students who stayed, the partial identification presented here still indicates the raid had negative effects on student performance.

B Appendix Tables

Table B.1: Effects of a nearby workplace raid on math and reading passing rate and scores

	DiD						Triple Difference	
	White		Hispanic (Near Region)		Hispanic (PSM)		White and Hispanic	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Score, reading								
Workplace Raid	-28.30†	-29.53†	-38.70†	-41.07†	-32.68†	-33.84*	-33.10†	-35.14†
	(9.08)	(8.77)	(9.76)	(10.11)	(12.05)	(12.74)	(9.17)	(9.04)
Constant	1,580.54†	1,677.09†	1,586.18†	1,669.72†	1,589.91†	1,626.80†	1,585.24†	1,654.72†
	(4.44)	(128.65)	(2.08)	(34.93)	(3.69)	(71.49)	(2.09)	(27.75)
R-squared	0.818	0.829	0.867	0.875	0.770	0.776	0.926	0.929
Panel B: Score, math								
Workplace Raid	-37.72	-43.53*	-41.60*	-47.24*	-38.67	-39.05	-32.10	-36.03
	(19.85)	(19.66)	(17.73)	(18.04)	(19.29)	(19.94)	(19.54)	(19.37)
Constant	1,647.78†	1,694.91†	1,669.81†	1,779.28†	1,664.53†	1,478.38†	1,666.70†	1,743.19†
	(7.68)	(195.49)	(4.01)	(54.51)	(5.28)	(105.22)	(3.96)	(40.37)
R-squared	0.718	0.781	0.811	0.823	0.684	0.695	0.884	0.889
Panel C: Passing rate, reading								
Workplace Raid	-8.77*	-8.66*	-8.19†	-8.82†	-7.14	-7.82*	-9.74†	-10.30†
	(2.92)	(2.91)	(2.81)	(2.78)	(3.54)	(3.73)	(2.97)	(2.93)
Constant	65.01†	102.26*	63.73†	92.89†	64.78†	94.95†	64.96†	84.82†
	(1.02)	(35.37)	(0.74)	(13.14)	(1.26)	(19.62)	(0.58)	(9.31)
R-squared	0.744	0.750	0.828	0.837	0.687	0.709	0.900	0.904
Panel D: Passing rate, math								
Workplace Raid	-5.62	-6.21	-11.65†	-12.83†	-8.54*	-8.69*	-8.82*	-9.46†
	(3.50)	(3.16)	(3.34)	(3.53)	(3.64)	(3.91)	(3.46)	(3.42)
Constant	82.11†	113.11†	76.71†	106.42†	79.64†	67.59†	78.71†	91.94†
	(1.39)	(19.41)	(1.14)	(20.84)	(1.16)	(20.06)	(0.87)	(14.19)
R-squared	0.600	0.675	0.772	0.781	0.618	0.621	0.835	0.839
Observations	140	140	540	540	210	210	1,050	1,050
Year FE	✓	✓	✓	✓	✓	✓	✓	✓
School FE			✓	✓	✓	✓		
School × Race FE	✓	✓					✓	✓
School controls		✓		✓		✓		✓

Notes: This table presents coefficients, standard errors in parenthesis, and p-values (see significance codes below) from the estimation strategies described in Equations 3-5 in the main text where the outcome variables are the scores or passing rates in the math and reading STAAR tests. I group columns based on which control group I'm using: white students in Allen ISD, Hispanic students in nearby similar districts, Hispanic students in matched schools, and white and Hispanic students for the triple-difference approach. Panels A and B reports the effects on STAAR test scores for reading and math and panels C and D reports effects on the passing rates. All regressions include year fixed effects. Regressions using white students as a control group include school × race fixed effects while those that use Hispanic students only have school fixed effects (as there is only race being considered). All observations are weighted by the number of students in the school and racial group who took the test. Additional school-level controls are added to some of the models as described in Equation 4. Standard errors are clustered by school. *Signif. Codes:* $*$ $p < 0.05$; $\dagger$ $p < 0.01$

Table B.2: Estimates for the effect of workplace raids on combined, math, and reading scores and passing rates using an event study specification

	Score			Passed		
	White	Hispanic		White	Hispanic	
		Region	PSM		Region	PSM
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Math and Reading Combined						
AllenHispanic × Year = 2015	24.13	2.16	-12.16	-0.38	6.70*	2.56
	(19.19)	(11.76)	(12.74)	(3.52)	(3.04)	(3.19)
AllenHispanic × Year = 2016	3.38	10.47	-3.04	2.03	4.34	2.65
	(12.90)	(13.32)	(16.36)	(3.04)	(2.35)	(2.66)
AllenHispanic × Year = 2017	10.43	12.00	-7.12	0.49	2.87	1.51
	(23.24)	(16.87)	(19.00)	(3.17)	(2.71)	(2.99)
AllenHispanic × Year = 2019	-26.64	-37.49*	-40.81*	-6.85	-7.24*	-6.61
	(19.93)	(17.75)	(19.30)	(3.51)	(3.42)	(3.89)
Constant	1,672.27†	1,713.65†	1,550.00†	106.26†	96.00†	75.56†
	(153.16)	(42.38)	(73.87)	(23.35)	(15.80)	(13.55)
R-squared	0.828	0.863	0.745	0.775	0.832	0.709
Panel B: Reading						
AllenHispanic × Year = 2015	17.17	8.14	-5.15	0.75	4.27	1.59
	(16.75)	(12.23)	(14.13)	(3.90)	(3.79)	(4.31)
AllenHispanic × Year = 2016	-7.63	-0.08	-10.94	1.38	2.10	0.37
	(11.95)	(11.94)	(14.28)	(4.19)	(3.62)	(3.84)
AllenHispanic × Year = 2017	-3.17	-1.82	-14.32	0.73	3.13	0.66
	(22.06)	(17.20)	(18.71)	(4.54)	(3.67)	(4.07)
AllenHispanic × Year = 2019	-27.82	-39.43*	-40.92*	-7.94	-6.44	-7.23
	(16.77)	(15.06)	(17.64)	(4.20)	(3.53)	(4.61)
Constant	1,678.86†	1,669.10†	1,642.86†	101.08*	90.71†	93.57†
	(136.66)	(35.49)	(73.82)	(34.45)	(13.33)	(19.37)
R-squared	0.835	0.875	0.778	0.751	0.837	0.710
Panel C: Math						
AllenHispanic × Year = 2015	31.30	-3.15	-17.53	-1.46	9.28†	3.74
	(23.64)	(13.30)	(15.95)	(3.59)	(3.14)	(3.42)
AllenHispanic × Year = 2016	15.85	22.89	7.25	2.95	6.86†	5.26
	(18.05)	(16.53)	(21.64)	(2.90)	(2.36)	(3.15)
AllenHispanic × Year = 2017	23.77	25.85	0.86	0.20	2.61	2.49
	(25.45)	(18.06)	(22.05)	(3.11)	(2.87)	(3.52)
AllenHispanic × Year = 2019	-25.69	-36.07	-40.91	-5.80	-8.14*	-6.05
	(24.95)	(21.61)	(23.18)	(4.45)	(4.08)	(4.23)
Constant	1,665.63†	1,766.08†	1,483.76†	112.36†	102.72†	61.89†
	(200.91)	(56.09)	(110.47)	(19.33)	(21.15)	(22.15)
R-squared	0.787	0.825	0.699	0.684	0.783	0.626
Observations	140	540	210	140	540	210
School ×Race FE	✓			✓		
School FE		✓	✓		✓	✓
Year FE	✓	✓	✓	✓	✓	✓
School controls	✓	✓	✓	✓	✓	✓

Notes: This table presents coefficients, standard errors in parenthesis, and p-values (see significance codes below) from the event-study estimation strategies described in Equation 6. I group columns based on the outcome variable (score or passing rate) and which control group I'm using. All regressions include year fixed effects. Regressions using white students as a control group include school × race fixed effects while those that use Hispanic students only have school fixed effects (as there is only race being considered). Additional school-level controls are also added to all the models. All observations are weighted by the number of students in the school and racial group who took the test. Standard errors are clustered by school. *Signif. Codes:* $*$ $p < 0.05$; † $p < 0.01$

Table B.3: Effects of a nearby workplace raid on the percent of questions answered correctly in the math and reading assessments

	DiD						Triple Difference	
	White		Hispanic (Near Region)		Hispanic (PSM)		White and Hispanic	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Percent questions answered correctly, math and reading combined								
Workplace Raid	-5.49†	-5.92†	-6.77†	-7.45†	-5.70†	-5.96†	-5.87†	-6.35†
	(1.60)	(1.55)	(1.80)	(1.85)	(2.01)	(2.14)	(1.62)	(1.59)
Constant	61.76†	71.61†	63.71†	80.41†	63.46†	57.23†	63.48†	75.13†
	(0.67)	(16.66)	(0.43)	(6.78)	(0.56)	(9.83)	(0.40)	(5.46)
R-squared	0.803	0.838	0.854	0.865	0.754	0.762	0.919	0.923
Panel B: Percent questions answered correctly, reading								
Workplace Raid	-5.21†	-5.28†	-5.60†	-6.02†	-4.75†	-5.04†	-5.72†	-6.05†
	(1.21)	(1.22)	(1.33)	(1.34)	(1.65)	(1.74)	(1.24)	(1.22)
Constant	65.74†	81.30†	66.77†	81.24†	67.05†	74.54†	66.67†	77.76†
	(0.50)	(16.10)	(0.30)	(5.71)	(0.51)	(9.59)	(0.28)	(4.48)
R-squared	0.846	0.855	0.874	0.884	0.792	0.802	0.929	0.933
Panel C: Percent questions answered correctly, math								
Workplace Raid	-5.71*	-6.50*	-7.92†	-8.85†	-6.55*	-6.83*	-6.00*	-6.62†
	(2.41)	(2.33)	(2.52)	(2.58)	(2.69)	(2.79)	(2.41)	(2.37)
Constant	57.63†	62.03*	60.51†	79.14†	59.81†	36.78*	60.16†	72.12†
	(1.05)	(20.96)	(0.62)	(9.27)	(0.79)	(14.55)	(0.59)	(6.93)
R-squared	0.734	0.800	0.815	0.827	0.709	0.717	0.889	0.894
Observations	140	140	540	540	210	210	1,050	1,050
Year FE	✓	✓	✓	✓	✓	✓	✓	✓
School FE			✓	✓	✓	✓		
School × Race FE	✓	✓					✓	✓
School controls		✓		✓		✓		✓

Notes: This table presents coefficients, standard errors in parenthesis, and p-values (see significance codes below) from the estimation strategies described in Equations 3-5 in the main text but changing the outcome variable to equal the percent of questions answered correctly in the math and reading (or combined) STAAR assessment. I group columns based on which control group I'm using: white students in Allen ISD, Hispanic students in nearby similar districts, Hispanic students in matched schools, and white and Hispanic students for the triple-difference approach. Panel A reports the effects on a combined reading and math measure, panel B reports effects only in the reading test, and panel C reports the effects on the math test. All regressions include year fixed effects. Regressions using white students as a control group include school × race fixed effects while those that use Hispanic students only have school fixed effects (as there is only race being considered). All observations are weighted by the number of students in the school and racial group who took the test. Additional school-level controls are added to some of the models as described in Equation 4. Standard errors are clustered by school. *Signif. Codes:* $*$ $p < 0.05$; † $p < 0.01$

Table B.4: Effects of a nearby workplace raid on the number of Hispanic students enrollment

	Number of Hispanic Students
	(1)
Workplace Raid	2.52
	(8.15)
Constant	286.60†
	(2.95)
Observations	648
R-squared	0.957

Notes: This table presents coefficients, standard errors in parenthesis, and p-values (see significance codes below) from the estimation strategies described in Equation 3 but changing the outcome variable to equal the number of Hispanic students enrolled in each school. The control group are schools that are near Allen ISD and in similar school districts based on the categorization by the NCES (see Strategy 2 in the Empirical Approach section). The regression includes year and school fixed effects and standard errors are clustered by school. *Signif. Codes:* $*$ $p < 0.05$; $\dagger$ $p < 0.01$

Table B.5: Bounded effects of a nearby large-scale workplace raid on academic performance of Hispanic students in Allen ISD

	Difference-in-Difference		
Control group	White (Allen ISD)	Hispanic (Near)	Hispanic (PSM)
	(1)	(2)	(3)
Panel A: Score, math and reading combined			
Baseline estimate	-36.24*	-43.56†	-35.79*
	(12.35)	(13.34)	(15.38)
Lower bound	-52.15†	-59.41†	-51.72†
	(12.18)	(13.30)	(15.33)
Upper bound	-19.45	-26.71*	-19.02
	(12.18)	(13.30)	(15.33)
Panel B: Passing rate, math and reading combined			
Baseline estimate	-7.38†	-10.73†	-8.15*
	(2.37)	(2.83)	(3.46)
Lower bound	-11.42†	-14.76†	-12.19†
	(2.27)	(2.75)	(3.40)
Upper bound	-6.42*	-9.76†	-7.19*
	(2.27)	(2.75)	(3.40)
Year FE	✓	✓	✓
School FE		✓	✓
School × Race FE	✓		
School controls	✓	✓	✓
Observations	140	540	210

Notes: This table presents coefficients, standard errors in parenthesis, and p-values (see significance codes below) from the estimation strategies described in Equation 4 of the main text. Each panel contains baseline estimates matching those presented in Table 4 in the main results section and lower and upper bound estimates for the effects of the raid. To calculate these, I construct two samples which assume a 5% rate of out-migration of Hispanic students and assign a score and passing rates at the 1 or 99 percentile of all students in Texas. Regressions using white students as a control group include school × race fixed effects while those that use Hispanic students only have school fixed effects (as there is only race being considered). All observations are weighted by the number of students in the school and racial group who took the test. Standard errors are clustered by school.
Signif. Codes: $* \; p < 0.05$; $\dagger \; p < 0.01$

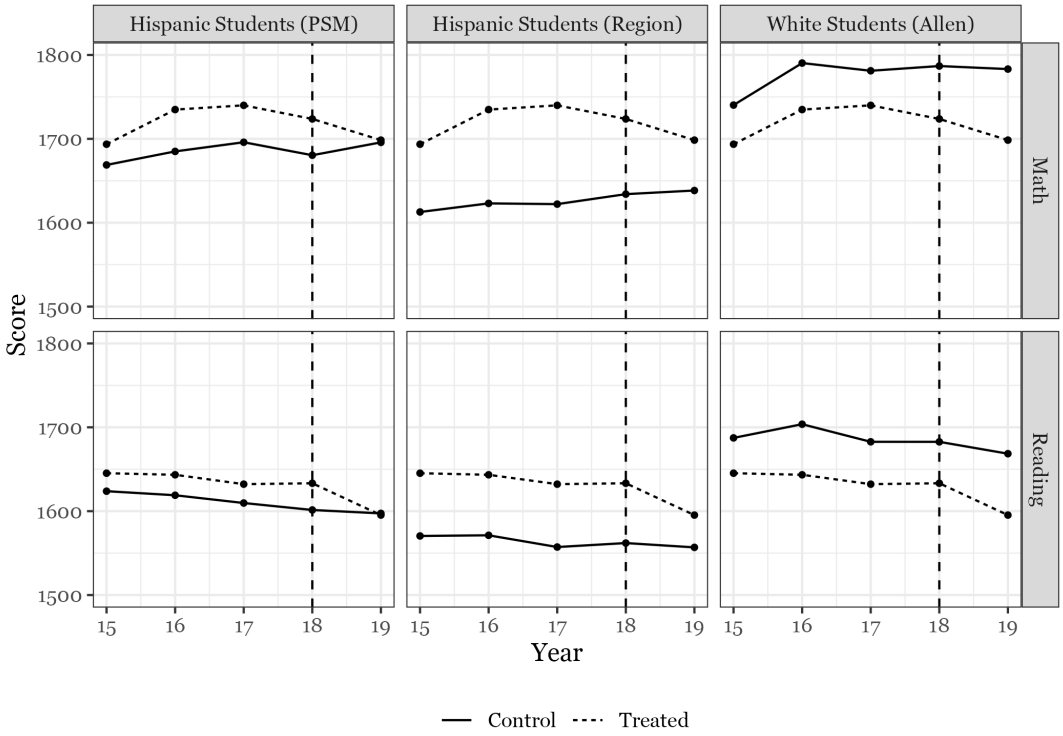
Table B.6: Characteristics of treated and control schools

	Allen ISD	Schools in nearby regions	Matched schools
Schools, Hispanic observations	14	94	28
Schools, White observations	14	88	.
Observations, Hispanic students	70	470	140
Observations, White students	70	440	.
Avg. distance from raid (km)	6.28	64.42	55.36
School characteristics			
Number of students	652.27	739.87	689.89
Percent White	49.72%	39.03%	50.02%
Percent Hispanic	12.64%	33.21%	21.76%
Percent Economically Disadvantaged	17.15%	48.44%	32.11%
Percent Limited English Proficiency	9.23%	14.52%	13.75%
Avg. attendance rate	97.24%	96.56%	97.05%
STAAR test performance			
Hispanic students			
Math score	1733.73	1653.25	1693.42
Reading score	1647.71	1588.41	1621.70
Math passing rate	91.50%	79.13%	86.92%
Reading passing rate	86.03%	69.98%	78.87%
White students			
Math score	1773.04	1690.23	.
Reading score	1682.31	1629.19	.
Math passing rate	95.47%	85.98%	.
Reading passing rate	90.64%	80.49%	.

Notes: This table presents average characteristics for schools in Allen ISD, in Allen's region or nearby regions, or in matched control schools. Characteristics are averaged across the 2015–2019 period. I include information for white students in Allen ISD because they form one of my main control groups. Similarly, I include information on white students in schools in nearby regions because I use this group for the triple difference strategy.

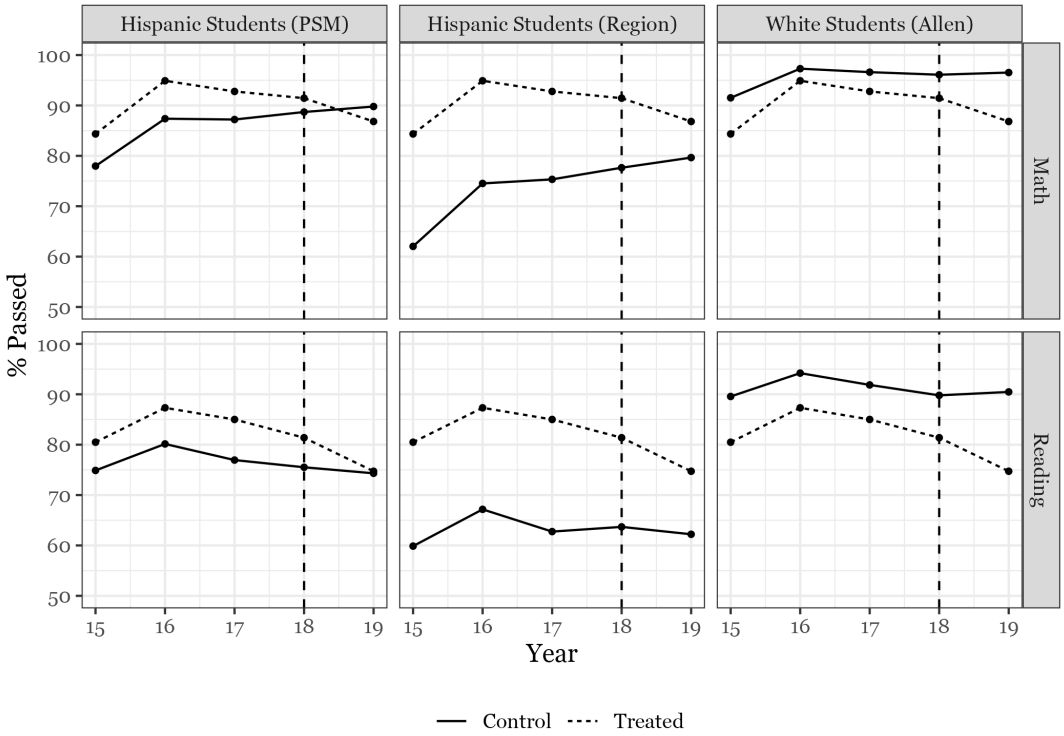
C Appendix Figures

Figure C.1: Raw trends in math and reading scores across Hispanic students in Allen ISD and control groups



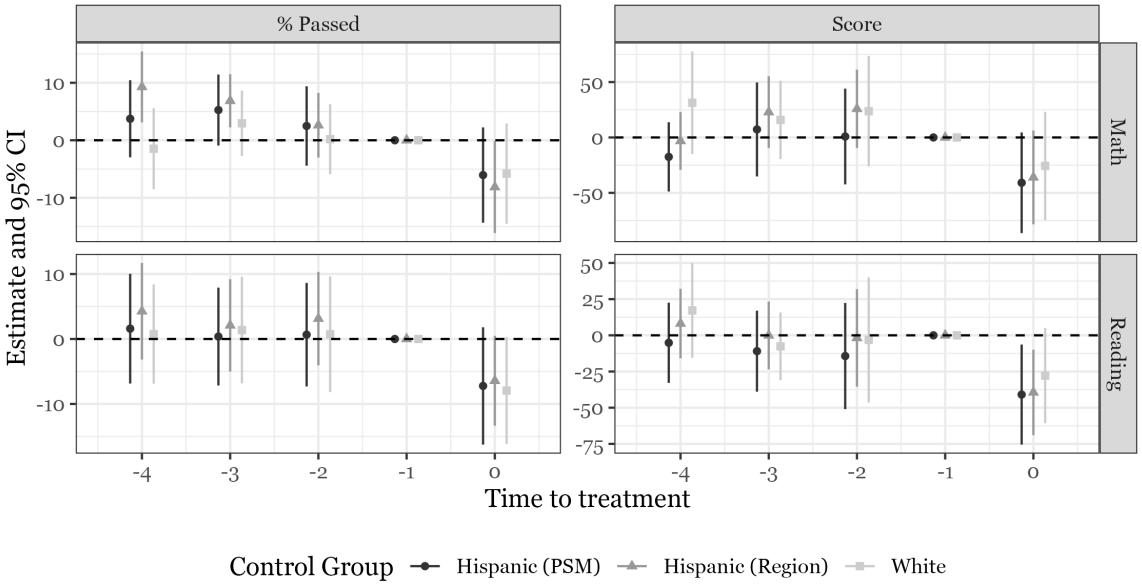
Notes: This figure plot raw trends in average scores in the math and reading STAAR test between 2015 and 2019 for treatment and control schools. All averages are weighted by the number of students in the school and racial group who took the test. Each column in the grid represents a different control group: the panel on the left shows trends for Hispanic students in matched schools, the center panel shows trends for Hispanic students in nearby and similar school districts, and the panel on the right shows trends for white students in Allen ISD.

Figure C.2: Raw trends in math and reading passing rates across Hispanic students in Allen ISD and control groups



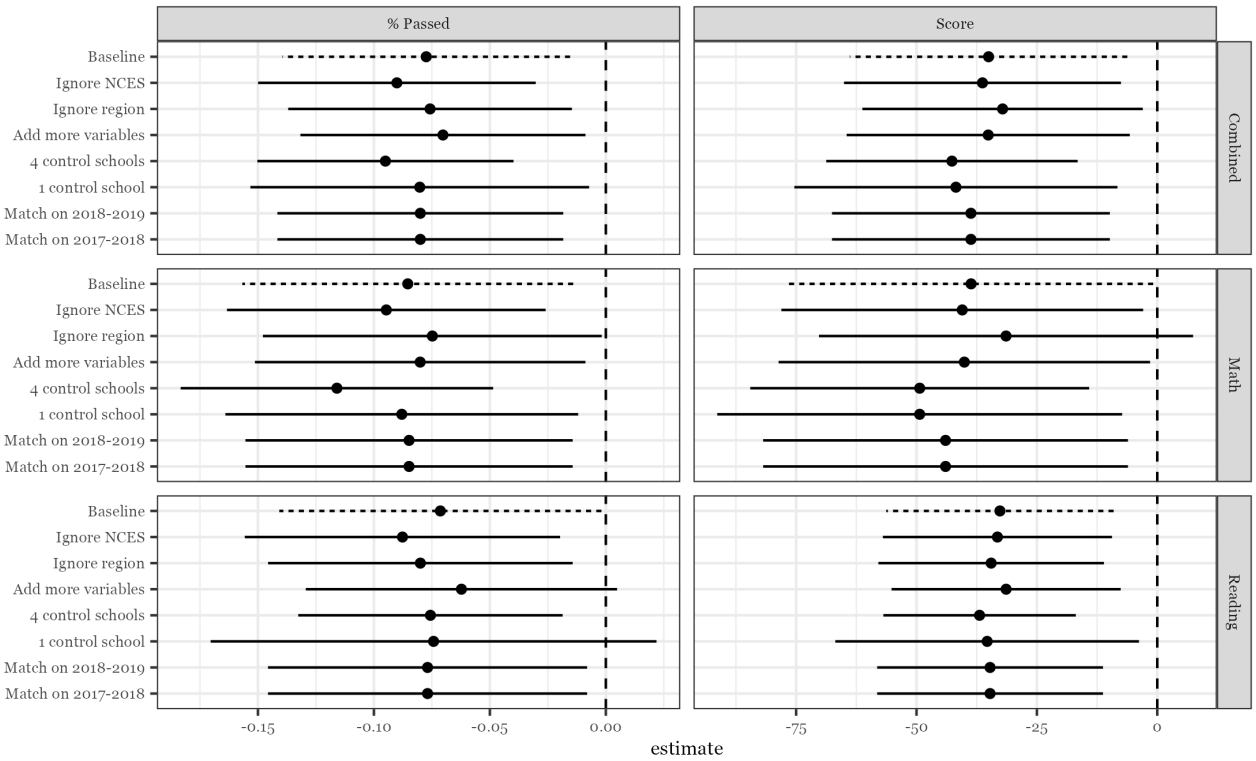
Notes: This figure plot raw trends in average passing rates in the math and reading STAAR test between 2015 and 2019 for treatment and control schools. All averages are weighted by the number of students in the school and racial group who took the test. Each column in the grid represents a different control group: the panel on the left shows trends for Hispanic students in matched schools, the center panel shows trends for Hispanic students in nearby and similar school districts, and the panel on the right shows trends for white students in Allen ISD.

Figure C.3: Estimates for the effect of workplace raids on academic performance using an event study specification



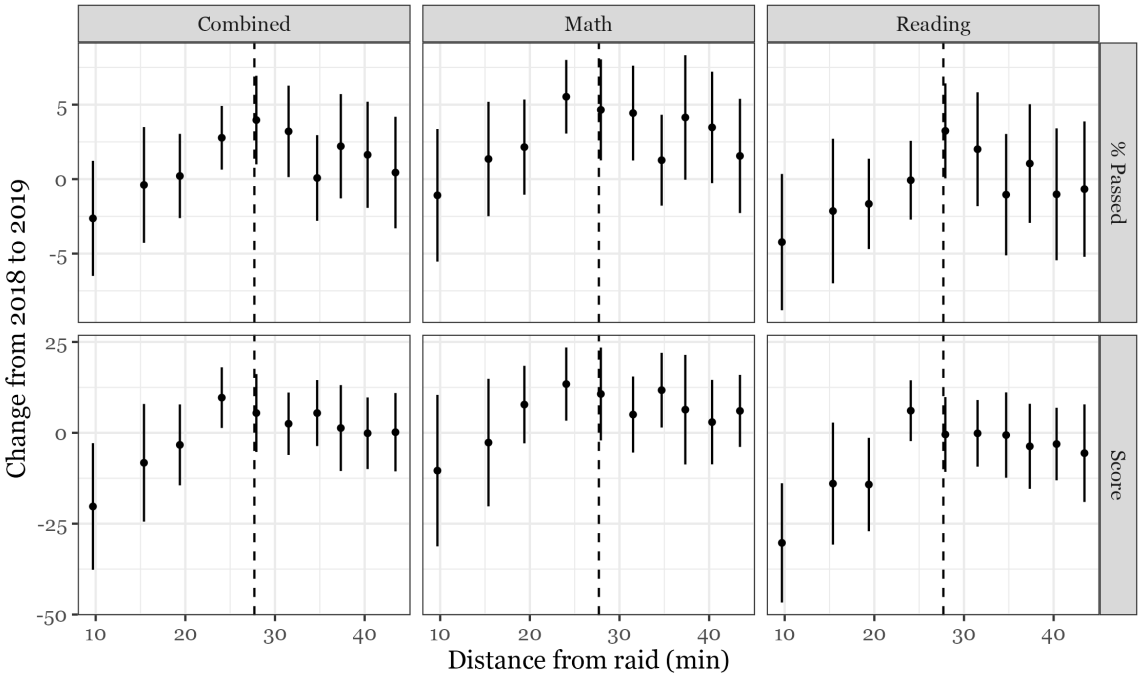
Notes: This figure provides a graphical representation of the results presented in Table B.2. In each figure, I plot the coefficients and 95% confidence intervals on the interactions between the indicator denoting results of Hispanic students in Allen ISD and the indicators denoting each of the years before and after the workplace raid. The regressions include school and year fixed effects. Standard errors are clustered by school.

Figure C.4: Estimated effect of workplace raid on math, reading, and combined test performance: alternative matching strategies



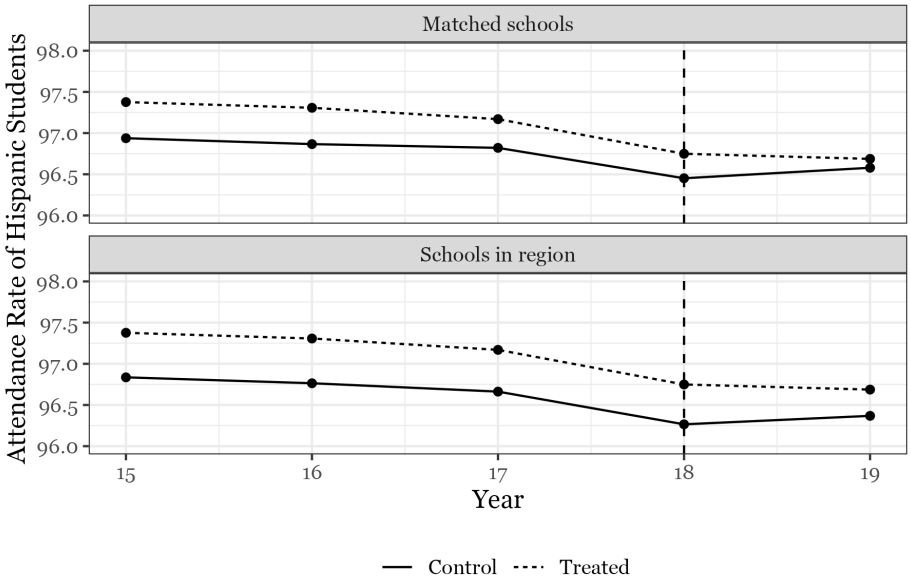
Notes: This figure presents results from Equation 3 in the main text using different control schools obtained by alternative matching strategies described in the Supplementary Methods section of the appendix. In each figure, I plot the coefficient estimate and 95% confidence interval on the treatment indicator (set to 1 for schools in Allen ISD in the period after the raid). Baseline estimates which correspond to the results presented in the main section of the paper are denoted with a dashed line. All regressions include year and school fixed effects and are weighted by the number of Hispanic students who took the STAAR assessment. Standard errors are clustered by school.

Figure C.5: Change in academic performance 2018-2019 by distance between schools and site of workplace raid



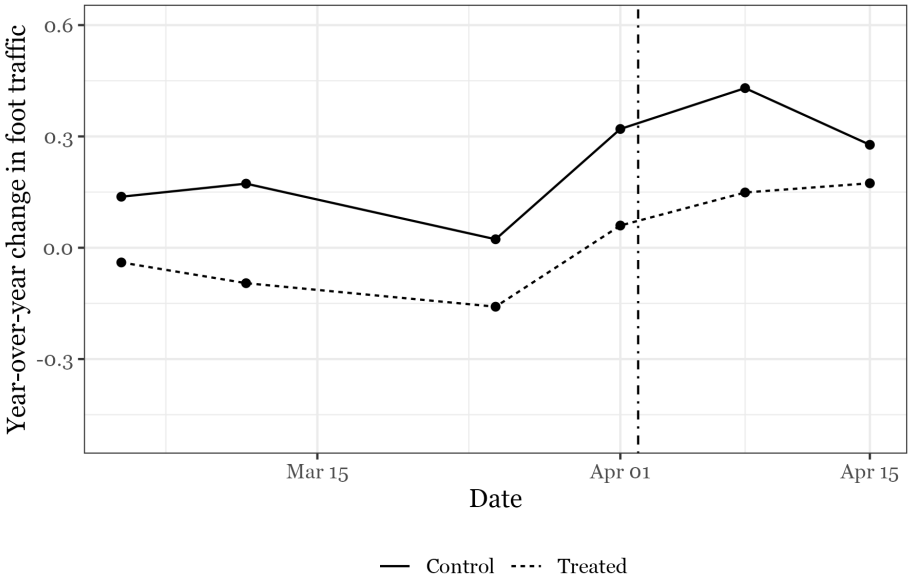
Notes: This figure presents a binned scatterplot showing the relationship between a school's distance from the raid (measured in driving time) and the school's change in score or passing rate for Hispanic students from 2018 to 2019 . I include all schools located within 27.7 minutes of the raid, divide the commuting time from the raid into 10 approximately equally sized bins, and plot the conditional mean of the change in scores and 95% CI.

Figure C.6: Raw trends in attendance rate of Hispanic students 2015–2019



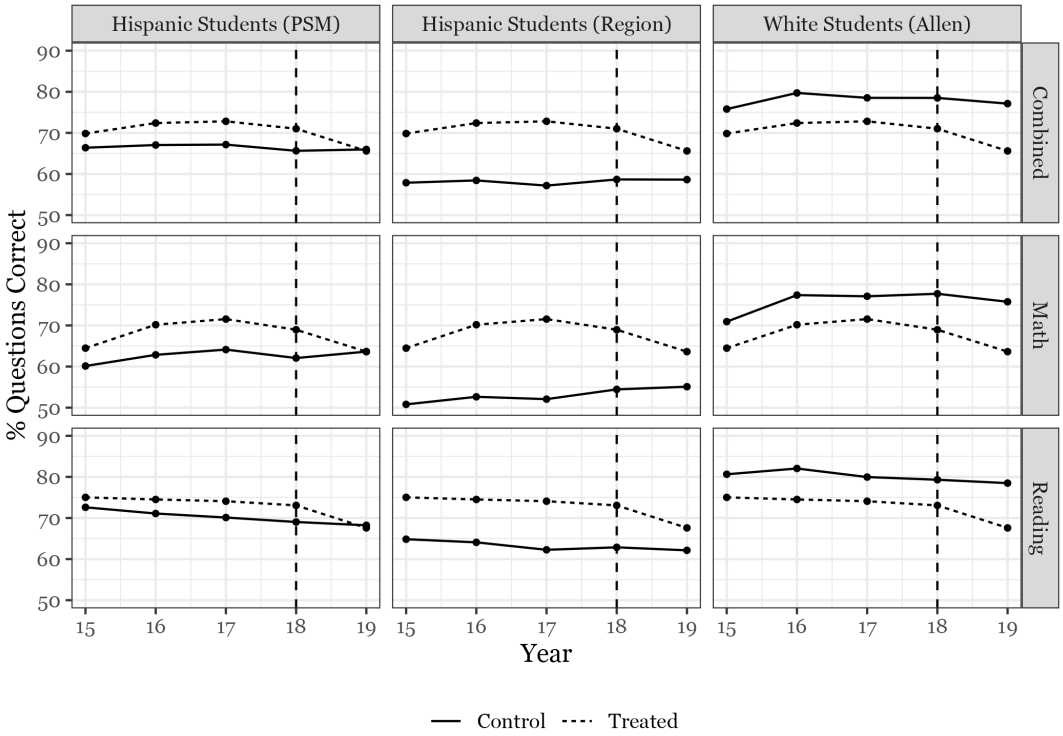
Notes: This figure plots raw trends in the average attendance rate of Hispanic students for elementary schools in Allen ISD and control schools. All averages are weighted by the number of Hispanic students in the school. The figure presents trends for two control groups: the top panel shows trends for Hispanic students in matched schools, the bottom panel shows trends for Hispanic students in nearby and similar school districts.

Figure C.7: Raw trends in foot traffic to schools in Allen ISD and control schools



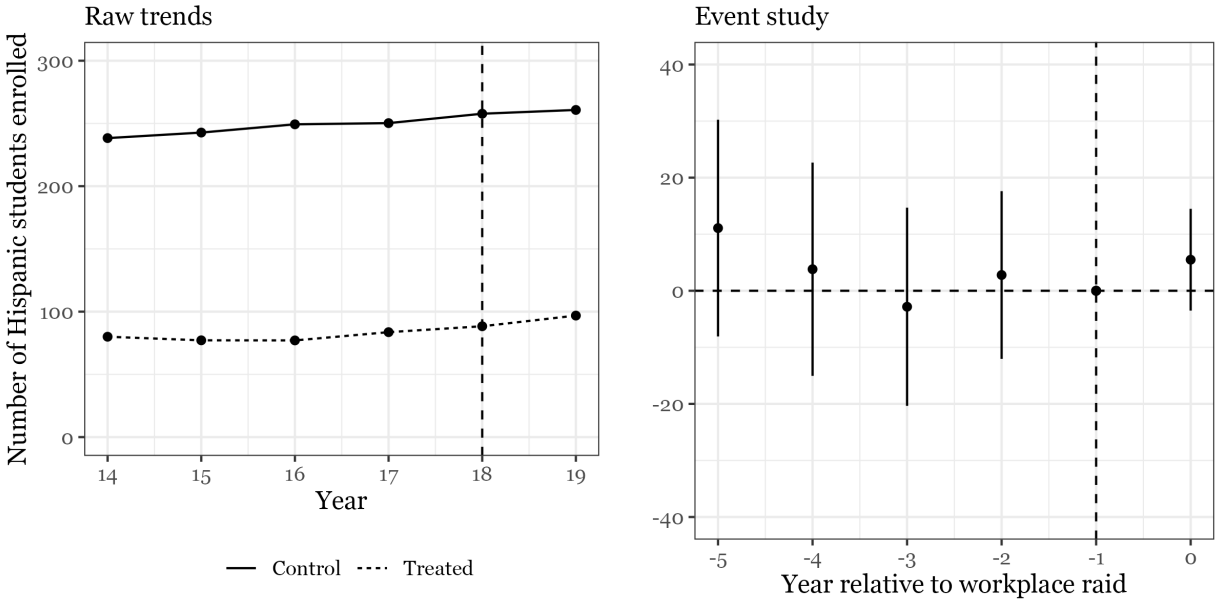
Notes: This figures plots the average year-over-year percent change in the number of weekly (Monday-Sunday) visitors to elementary schools in Allen ISD and control schools. For each school and week, I calculate the total number of visitors and 2018 and 2019 to calculate the percent change. Then, I average across all control and treated schools. The dashed line indicates the date of the raid which happened on Wednesday, April 3, 2019 and would have impacted visits on the week ending on April 8, 2019 and April 15, 2019.

Figure C.8: Trends in combined, math, and reading raw scores across Hispanic students in Allen ISD and control groups



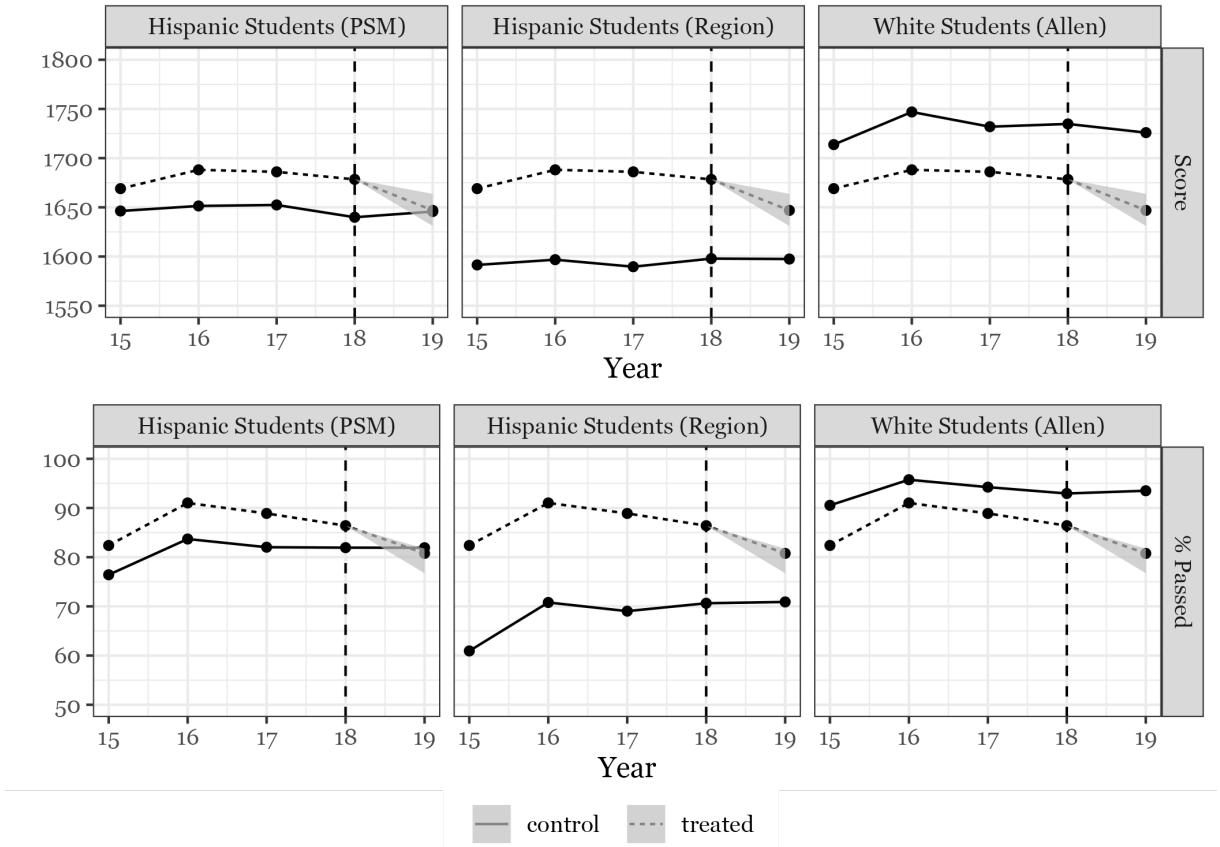
Notes: This figure plot raw trends in average percent of questions answered correctly for the combined and individual math and reading STAAR tests between 2015 and 2019 across treatment and control schools. All averages are weighted by the number of students in the school and racial group who took the test. Each column in the grid represents a different control group: the panel on the left shows trends for Hispanic students in matched schools, the center panel shows trends for Hispanic students in nearby and similar school districts, and the panel on the right shows trends for white students in Allen ISD.

Figure C.9: Trends in the number of Hispanic students enrolled in schools in Allen ISD and control schools



Notes: This figure plot trends in the number of Hispanic students reported as enrolled between October 2014 and October 2019 for treatment and control schools. The panel on the left shows raw trends in enrollment, calculated by averaging across the treatment and control units. The figure on the right shows the estimates and 95% confidence intervals for the coefficient on the interaction between the indicator denoting observations from Allen ISD and the dummy variables for each of the years before and after the workplace raid. Standard errors are clustered by school.

Figure C.10: Trends in performance for Hispanic students in Allen ISD and control groups with bounded scores and passing rates in the post-treatment year



Notes: This figure plot trends in the scores and passing rates for treatment and control schools. All averages are weighted by the number of students in the school and racial-ethnic group who took the test. Maximum and minimum values for 2019 are obtained assuming a 5% rate of out-migration for Hispanic students and values at the 1 and 99 percentile for scores and passing rates.

Figure C.11: Raw score to scaled score and percentile for reading assessment

State of Texas Assessments of Academic Readiness

STAAR State of Texas Assessments of Academic Readiness

Raw Score Conversion Table

Grade 6 Reading

Spring 2019

Raw Score	Scale Score		Percentile
0	906	Did Not Meet	0
1	1046		0
2	1128		0
3	1179		0
4	1215		0
5	1245		0
6	1270		1
7	1292		1
8	1312		2
9	1330		3
10	1347		4
11	1362		6
12	1377		8
13	1391		10
14	1405		12
15	1418		15
16	1431		17
17	1444		20
18	1456		22
19	1469		25
20	1481		28
21	1493		31
22	1506		34
23	1517	Approaches	37
24	1531		40
25	1544		44
26	1557		47
27	1571		51
28	1585		55
29	1600		59
30	1615		64
31	1629	Meets	68
32	1650		73
33	1670		77
34	1691		82
35	1718	Masters	87
36	1746		91
37	1783		95
38	1833		98
39	1916		99
40	2056		100

Notes: This image presents a table created by the Texas Education Agency that matches the number of questions answered correctly (raw score) in the reading test to a scaled score and a percentile rank.

Figure C.12: Raw score to scaled score and percentile for math assessment

State of Texas Assessments of Academic Readiness

STAAR State of Texas Assessments of Academic Readiness

Raw Score Conversion Table

Grade 6 Mathematics

Spring 2019

Raw Score	Scale Score		Percentile
0	1038	Did Not Meet	0
1	1171		0
2	1250		0
3	1299		0
4	1335		0
5	1364		0
6	1389		1
7	1411		2
8	1431		4
9	1450		6
10	1467		8
11	1483		12
12	1499		16
13	1514		20
14	1536	Approaches	28
15	1544		30
16	1558		33
17	1572		37
18	1586		42
19	1600		46
20	1614		50
21	1629		54
22	1643		58
23	1653	Meets	61
24	1673		66
25	1689		69
26	1705		73
27	1722		76
28	1740		80
29	1758		83
30	1772	Masters	85
31	1800		89
32	1823		91
33	1850		93
34	1881		95
35	1919		97
36	1970		98
37	2051		99
38	2186		100

Notes: This image presents a table created by the Texas Education Agency that matches the number of questions answered correctly (raw score) in the math test to a scaled score and a percentile rank.

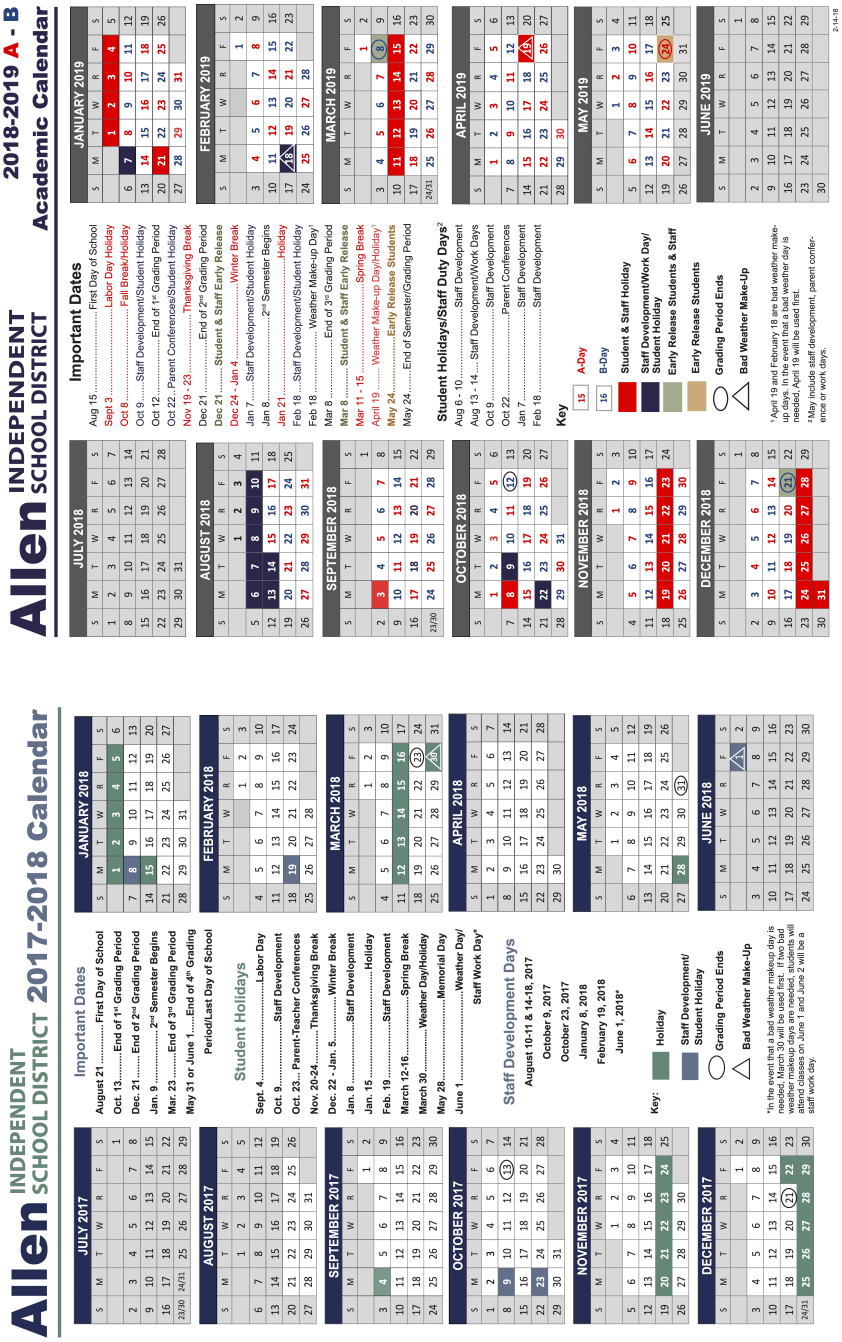
Figure C.13: Scaled score statistics issued by the Texas Education Agency

Table B.7.1. Spring 2019 STAAR English Grades 3–8 Assessments
Scale Score Descriptive Statistics

Subject	N	Mean	Median	Mode	Range	Interquartile Range	SD	Variance	Skewness	Kurtosis
Grade 3 Mathematics	374,259	1478.13	1470	1596	1095	201	154.92	24001.50	0.36	0.20
Grade 4 Mathematics	394,964	1576.65	1570	1627	1140	211	159.86	25555.72	0.48	0.28
Grade 5 Mathematics	404,089	1651.43	1647	1809	1121	206	162.75	26488.84	0.32	0.07
Grade 6 Mathematics	401,216	1647.06	1629	1586	1148	196	145.34	21122.62	0.60	0.50
Grade 7 Mathematics	352,968	1659.89	1646	1558	1116	181	139.84	19556.11	0.72	0.95
Grade 8 Mathematics	337,761	1712.21	1713	1728	1178	176	143.39	20560.11	0.33	0.60
Grade 3 Reading	356,913	1448.50	1439	1579	1126	210	150.50	22650.64	0.34	0.15
Grade 4 Reading	380,162	1521.06	1519	1619	1153	207	145.79	21255.95	0.25	0.26
Grade 5 Reading	394,750	1578.55	1582	1698	1143	197	144.60	20909.08	0.28	0.28
Grade 6 Reading	410,024	1573.90	1571	1650	1151	201	139.07	19340.63	0.29	0.31
Grade 7 Reading	399,426	1653.59	1657	1753	1181	200	144.84	20979.26	0.17	0.26
Grade 8 Reading	392,556	1690.15	1700	1814	1187	196	140.00	19599.82	-0.07	0.18
Grade 4 Writing	379,120	3719.14	3693	3896	5803	865	616.22	379726.84	0.35	0.86
Grade 7 Writing	399,570	3866.15	3802	4121	6093	953	700.17	490236.07	0.58	1.18
Grade 5 Science	402,556	3913.49	3888	4239	4467	732	574.56	330118.79	0.27	0.24
Grade 8 Science	393,904	3998.87	3963	4180	5473	757	616.76	380392.25	0.32	0.74
Grade 8 Social Studies	395,567	3780.19	3780	3936	4942	718	524.36	274955.10	0.38	0.44

Notes: This image presents descriptive statistics on STAAR scaled scores issued by the Texas Education Agency using student-level performance data. I use the standard deviation for grade 6 math and reading to convert the estimated effects of the raid on scaled scores to standard deviation units.

Figure C.14: Academic calendars Allen ISD 2017-2018 and 2018-2019



Notes: This image presents the academic calendars for Allen ISD in the 2017-2018 and 2018-2019 school years. I use this calendar to conduct the foot traffic analysis to determine when students had the spring break holiday and ensure the year-over-year comparison dates align.

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