School Food Procurement and Student Outcomes*

Martin B. Hackmann† Darion Phan‡

May 3, 2024

1 Significance

Obesity rates among children in the United States have quadrupled since the 1980s from 5% to almost 20%, affecting approximately 15 million children today.[1] This alarming trend not only poses significant health consequences but also contributes to an annual healthcare spending of $1.32 billion for children eventually amassing to $173 billion for adults.[2] The issue of childhood obesity also highlights a concerning equity gap, with low-income, Hispanic, and Black families disproportionately affected.[3]

A vital strategy to counteract this growing trend is through early education. Extensive research indicates a strong correlation between education and the adoption of healthier lifestyles, which in turn, are linked to reduced obesity rates. Establishing healthy habits from a young age suggests that early educational initiatives are crucial for teaching children health-promoting skills and behaviors. Educational institutions are pivotal in creating a supportive environment that endorses healthy habits, including consistent physical activity and balanced nutrition. Schools also offer a structured setting that, as per the 'structured days hypothesis', is believed to diminish behaviors conducive to obesity. Finally, and most importantly, school-based nutrition programs are particularly beneficial for children from less advantaged backgrounds, providing a critical source of healthy food.

Yet, there remain important knowledge gaps on how school food procurement programs affect student's academic and health outcomes. This research proposal seeks to close these gaps.

---

*We thank...

†UCLA, Department of Economics, CESifo, and NBER

‡UCLA

[1] https://www.cdc.gov/nchs/data/hestat/obesity-child-17-18/obesity-child.htm

[2] https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0247307 and https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0247307

[3] https://www.cdc.gov/nchs/data/hestat/obesity-child-17-18/obesity-child.htm

2 Study Goals

- What is the impact of food revenues on food procurement?
- What is the impact of food procurement on student outcomes

3 Institutions

1. School Districts
2. Schools
3. Food Service Providers
4. Students

4 Data Sources

4.1 California

1. California Department of Education
    - test scores
    - physical fitness
    - demographics
    - Food procurement... details
2. Los Angeles School Districts

4.2 Texas

5 Data Description

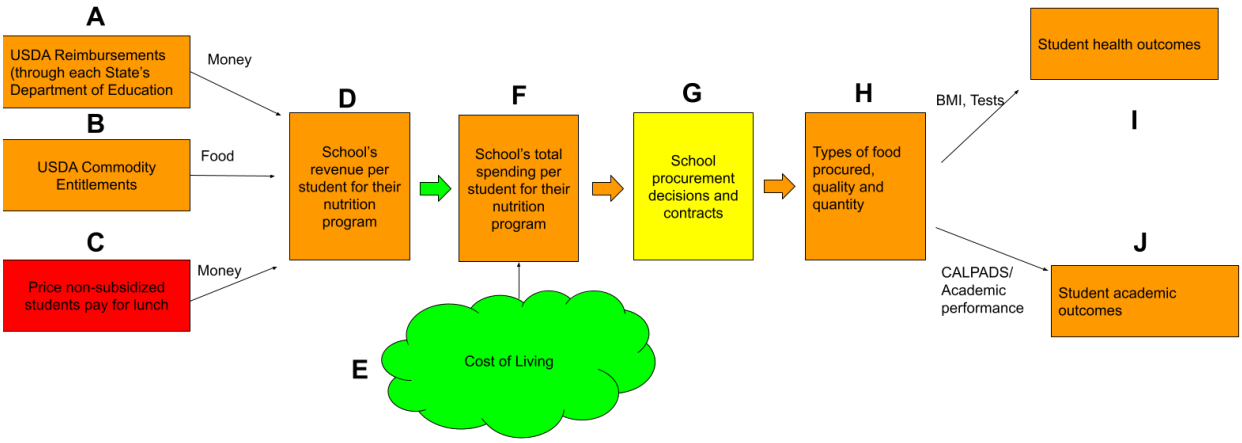
See below for the flow chart of the data I made. The letters are a standard way of referring to the data. The colors for the boxes are defined as follows: Green: We have sufficient data (or a way of obtaining it) for the time period we are interested in. Yellow: I think we have enough data (or a way of obtaining it) in the time period we are interested in, but we will need to make assumptions. Orange: We do not have data for one or more of the following reasons:

1. We need to request the data from an organization

2. We need to find more years of the data

Red: This is not directly obtainable and we will need to find another method determine these values. for the time period (or a way of obtaining it) for the time period we are interested in. The colored arrows reflect the status of connecting the datasets to each other

Figure 1: Figure title



5.1 Federal Data

1. USDA Reimbursements (A)

   The USDA helps schools sustain their nutrition programs by reimbursing the schools on a per-meal-served basis. Different meals qualify for different reimbursements many programs schools can offer to students and faculty. Examples of these programs include the National School Lunch Program (NSLP), School Breakfast Program (SBP), Summer Food Service Program (SFSP), Special Milk Program, Meal Supplements, and other programs. In this paper, we will focus mainly on the USDA reimbursements from meals served through the NSLP and SBP.

   See federal reimbursement rates per meal served through the NSLP and SBP over time from School Year 1998-1999 to present. Link here.

   Based on the link, "adjustments for the National School Lunch and the School Breakfast Programs reflect changes in the Food Away From Home series of the Consumer Price Index for All Urban Consumers."

2. Competitive Foods (A)

Schools can also choose to offer competitive foods, which are foods that the schools choose to sell a la carte. These foods typically have less nutrients and are unhealthier than the foods served through the NSLP and SBP. Competitive foods are more popular in affluent areas which leads to more revenue obtained through competitive foods in these schools. The references section is really interesting, a lot of good reading. Link here.

3. USDA Commodity Entitlements (B)

   Schools get commodity entitlements from the USDA based on the number of NSLP lunches served in the prior school year. Here are the entitlements per meal going back to SY 2008-2009. Link here.

   Using this entitlement, schools can order food from the USDA. The price, quantities, and types of food that can be ordered is found in the Link here.

   Schools can also use this entitlement to order from the Department of Defense Fresh Fruits and Vegetables Program. Foods ordered from this program are fruits and vegetables. I tried making an account on their portal called FFAVORS to view the available food, but it is password protected and I would need an authorized account. We have some data that the CDE provides on the produce available from SY 2022-2023, but I wasn't able to find a link that went further back.

   If a school does not use all of its entitlement in the previous school year before they get their new entitlement, they lose the prior year's entitlement.

   Link here.

4. Nutritional Guidelines (G) (H) (I)

   School Food Authorities must adhere to national nutritional guidelines based on the Healthy Hunger Free Kids Act (2010) and its updates. Link here.

5. Cost of Living (E)

   Using MAIRPD data, we can calculate the cost of living in different metropolitan areas around the US. To calculate the cost of living for individual schools, I found the minimum distance from the center of each county to the center of the first listed city in the metropolitan area. I then assigned the cost of living in that metropolitan as the cost of living for the schools in that county. Link here.

5.2 California Data

1. Reimbursement Rates (A)

California uses a program called Child Nutrition Information & Payment System (CNIPS) to distribute reimbursements.

Due to the Universal Meal Program (UMP) implemented by California for SY 2022-2023, California provides additional reimbursement for each meal served. California mandated schools to serve one free lunch and one free breakfast to students per day.

California committed itself to making up the respective difference between each meal that would have been entirely paid for or sold at a reduced price.

Ex. If the student does not qualify for a free or reduced-price lunch and he is served a free lunch, the school will record that they served the student a paid meal. California will make up the difference between the federal reimbursement for a paid meal and the federal reimbursement for a free meal.

2. Individual District Food Procurement (G) (H) (I)

   It is up to individual districts to competitively procure their own food. Each district must send out RFPs and create contracts with companies to procure the food they serve.

   Schools can contract with a Food Service Management Company (FSMC). This company can procure the foods of the school and/or provide personnel and equipment to run the school's nutrition program. Schools can also create cooperatives with each other when purchasing food. This allows schools to contract with companies together, which may result in lower per-unit prices for the food purchased. Schools can also utilize a method called 'piggybacking' where a school district uses a contract that another district has to procure the food at the same price as that district.

3. California Department of Education (abbrev. CDE) (A) (B) (D) (F) (G) (H) (I) (J) (K)

   The CDE has a lot of important data that we want to use. We will request data through the CDE Data Request portal. Link here.

   The data we hope to use are as follows:

   (a) California Longitudinal Pupil Achievement Data System (CALPADS) (K)

   Based on the CDE website linked below, "CALPADS is the foundation of California's K–12 education data system, comprising student demographic, program participation, grade level, enrollment, course enrollment and completion, and discipline data. The student-level, longitudinal data in CALPADS enables the facilitation of program evaluation, the assessment of student achievement over time,

the calculation of more accurate dropout and graduation rates, the efficient creation of reports to meet state and federal reporting requirements, and the ability to create ad hoc reports and responses to relevant questions." Link here.

(b) Physical Fitness Test (abbrev. PFT) (J)

The PFT tests students on a variety of exercises such as the pacer test, trunk lift, and pushups. We are able to access to freely access data going back to SY 1998-1999 to SY 2018-2019 through the CDE DataQuest. Link here. I don't believe student BMI, height, or weight data is collected through this program anymore so we may need a new data source for this.

(c) Vendor Paid List (G) (H)

The CDE conducts a state-wide procurement review of schools that participate in the NSLP and SBP. One of the things that every SFA submits to the CDE is a Vendor Paid List which contains the vendor(s) receiving payment as well as the payment amount.

(d) CDE Distribution Centers (B)

The CDE manages two warehouses that distribute the USDA Foods and DOD Fresh produce. These warehouses are located in Pomona and Sacramento.

Through these these datasets provided by the California, we hope to see the physical health and academic performance of students over time.

5.3 Southern California Data

1. Individual School Data (G) (H) (I)

   We used the California Public Records Act to request food procurement data from school districts around Los Angeles. The data includes the price, quantity, and description of the food purchased from the SY 2018-2019 to SY 2022-2023. To view the data, see the GitHub. Link Here.

   The largest cooperative (and the entity we have the most data for) is the San Gabriel Valley Purchasing Cooperative.

   Some of the obtained data was in pdf form and/or handwritten. We used the Adobe Acrobat pdf to Excel converter to obtain some files.

5.4 Texas Data

1. Reimbursement Rates (A)

Before SY 2023-2024, Texas did not give schools additional funding per NSLP or SBP meal served. As a result, Texas schools receive the federal reimbursement for the meals served. Link here.

Texas passed a law that allows students that qualify for a reduced-price meal to receive their breakfast for free. The state pays for the difference in the paid-reimbursement and the free reimbursement.

2. Individual District Procurement (G) (H) (I)

   Although there may be different laws for school food procurement, I think that the general process of competitively procuring food is the same.

3. Texas Education Agency (A) (B) (D) (F) (G) (H)

   A lot of the data we have comes from the Texas Open Data Portal and the Texas Education Agency.

   We will need to request student outcome data as well as anything else they can provide that is in this list: Link here.

   (a) Meal Reimbursement Data (A)

   Texas has publicly available data on the number of meals served for the NSLP and SBP as well as the reimbursement each school gets for participating. This data goes back to SY 2015-2016. Link here.

   (b) USDA Entitlement Data (B)

   Using the same link as the above, we can see the USDA entitlement each school is given for the year from SY 2021-2022 to present. I believe we can submit something Texas calls a 'Public Information Request' to ask for the entitlement data. Link here.

   (c) School Expenditures on Nutrition Programs (D) (F)

   We can view Texas' school budgets with the link below. It includes an itemized category for spending on food. Link here.

   We also can view the spending of schools on food with the following link. I checked a few schools with the data from the above item and it lined up. Link here.

6 Empirical Evidence and Actual Datasets

In this section I will give a summary of all the datasets we currently have as of 15 April 2024.

(A) USDA Reimbursements

USDA reimbursements depend a) the reimbursement rate set by the USDA and b) the number of meals served by the school.

The reimbursement rate is set according to the USDA. We can get the data from this based on the USDA page with the listed rates.

The number of meals and composition of free, reduced-priced, and full-price meals served by the school varies by school. We currently have this data for Texas, but not California. We will need to request CNIPS data for through the CDE.

For Texas, here is the data description for the data linked above here!

The datasets, titled "School Nutrition Programs Meal Reimbursement Information Program Year 2015-2016 20240314.csv" where 2015-2016 is replaced with the relevant year, have the following summary statistics for the columns containing numeric variables:

The names of the non-numeric columns are as follows: "ProgramYear", "ReportType", "CEID", "CEName", "CECounty", "TypeOfAgency", "TypeOfSNPOrg", "SiteID","SiteName", "SiteCounty", "ClaimDate"

(B) USDA Commodity Entitlements

The data we have for Commodity Entitlements comes from Texas through their data portal. We have the data from SY 2021-2022 to SY 2022-2023, but we will need to request data for other years. This data is grouped by 'Contracting Entity' which is basically school district for our purposes.

(C) Other School Food Revenues

This data seems hard to directly calculate, so we may need to figure out the school's revenue from the school's budget (See (D)).

Each district has the authority to price their meals. I'm unaware if there is a legal upper limit to the price. The districts are supposed to operate on a not-for-profit basis, so the lower limit is probably the break-even price.

(D) Total School Food Revenues

One way we calculate this is by adding (A), (B), and (C). This would give us an estimate of the total revenue the school has.

Another way we have this is through Texas. They publish a budget and the actual spending of each district with food as an item. I checked different files against a web

	MIN	MEAN	MAX	SD
ESC	1	9.778906e+00	20.00	5.681303
TDARegion	1	2.760028e+00	5.00	1.166252
EnrollmentQty	0	6.272803e+02	18741.00	512.677794
FreeEligibleQty	0	3.508706e+02	10497.00	321.979011
ReducedEligibleQty	0	3.679021e+01	611.00	44.040625
PaidEligibleQty	0	2.396174e+02	18028.00	335.365236
BreakfastDays	0	1.651063e+01	31.00	6.323185
BreakfastTotal	0	3.598404e+03	51107.00	3856.783785
BreakfastADP	0	2.126439e+02	2679.50	204.635101
BreakfastServedFree	0	2.863287e+03	46325.00	3375.956514
BreakfastServedReduced	0	1.917286e+02	3913.00	275.585246
BreakfastServedPaid	0	5.433879e+02	18399.00	811.556200
LunchDays	0	1.651043e+01	31.00	6.256674
LunchTotal	0	6.245601e+03	69816.00	5376.123244
LunchADP	0	3.712954e+02	3324.57	280.126249
LunchServedFree	0	4.400594e+03	55592.00	4369.427786
LunchServedReduced	0	3.972949e+02	7138.00	502.182783
LunchServedPaid	0	1.447711e+03	25918.00	1857.661798
SnackDays	0	3.708534e+00	31.00	7.317773
SnackTotal	0	2.628417e+02	14064.00	824.330544
SnackADP	0	1.741065e+01	900.00	50.437229
SnackServedFree	-1	2.576276e+02	14064.00	821.339230
SnackServedReduced	0	3.783925e-01	420.00	6.529587
SnackServedPaid	0	4.835636e+00	4281.00	73.226025
MilkDays	0	1.361452e-02	28.00	0.526458
Milktotal	0	1.073033e+00	3970.00	49.110439
MilkADP	0	5.444307e-02	194.53	2.488213
MilkServedFree	0	0.000000e+00	0.00	0.000000
MilkServedReduced	0	0.000000e+00	0.00	0.000000
MilkServedPaid	0	1.073033e+00	3970.00	49.110439
BreakfastReimbursement	0	6.157001e+03	94215.14	6975.738255
LunchReimbursement	0	1.547374e+04	180853.58	14595.421804
SnackReimbursement	0	2.169046e+02	11813.76	689.926975
MilkReimbursement	0	2.086741e-01	794.00	9.730704
TotalReimbursement	0	2.184785e+04	228223.44	20901.607903
TotalMeals_Snacks	0	1.010685e+04	103069.00	8844.849203

USDA Reimbursements (A)

	MIN	MEAN	MAX	SD
FoodServiceDirectorAddressZipCode	75002.0	105067509.531	799011917.0	2.650304e+08
TotalBeginningEntitlement	0.0	194337.954	9170504.0	5.813238e+05
ProcessingReservedUsed	0.0	101746.304	5518711.2	3.419828e+05
ProcessingReservedRemaining	-47123.5	1885.812	146488.2	9.020097e+03
DODFreshDeduction	0.0	28137.783	1331534.0	8.732312e+04
EntitlementAllocations	0.0	36507.361	1438560.1	8.537129e+04
EntitlementUsed	0.0	168680.484	5764324.7	4.542100e+05
UnfilledRequests	-2891550.1	-12408.017	0.0	1.587789e+05
EntitlementRemaining	-280319.1	13249.453	640593.1	4.743262e+04
CombinedValueTrueEntitlementRemaining	-245384.9	15538.488	787081.4	5.137115e+04
BonusAllocations	0.0	19864.893	641027.3	5.252093e+04
AdminAdjustments	0.0	0.000	0.0	0.000000e+00

USDA Commodity Reimbursements (B)

scraping script for SY 2018-2019 and it works. They also publish spending per student which I think is relevant.

The columns of the large dataset for the expenditure of every district in the school year is: "DISTRICT", "FUND", "FUNDYEAR", "FUNCTION", "OBJECT", "FIN UNIT", "PROGRAM INTENT", "ACTAMT", "DTUPDATE".

(E) Cost of Living

Using MAIRPD data, we are able to find the cost of living for different metropolitan areas in the US. The data contains the location and the index for every year from 2008 to 2022.

(F) Total School Food Spending

We would need financial statements from school on their food program if we want to see their total food spending. This is very similar to item (D), but this is exactly what we are trying to create based on items (A), (B), and (C).

I chec

* We also have data for the budgeted amount they project

(G) School Procurement Decisions

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11
1	001902	Food Services (Function 35)	$0	0.00%	$0	$287,406	3.36%	$510	$2,916,390,356	5.43%	$538
2	001903	Food Services (Function 35)	$0	0.00%	$0	$630,202	5.39%	$503	$2,916,390,356	5.43%	$538
3	001904	Food Services (Function 35)	$4,908	0.06%	$6	$411,195	4.67%	$512	$2,916,390,356	5.43%	$538
4	001906	Food Services (Function 35)	$0	0.00%	$0	$257,465	6.40%	$703	$2,916,390,356	5.43%	$538
5	001907	Food Services (Function 35)	$1,865	0.01%	$1	$2,071,781	5.70%	$611	$2,916,390,356	5.43%	$538
6	001908	Food Services (Function 35)	$0	0.00%	$0	$934,044	6.13%	$615	$2,916,390,356	5.43%	$538
7	001909	Food Services (Function 35)	$0	0.00%	$0	$184,491	4.44%	$454	$2,916,390,356	5.43%	$538
8	002901	Food Services (Function 35)	$0	0.00%	$0	$2,287,559	5.71%	$530	$2,916,390,356	5.43%	$538
9	003902	Food Services (Function 35)	$20	0.00%	$0	$1,621,125	6.15%	$548	$2,916,390,356	5.43%	$538
10	003903	Food Services (Function 35)	$1,769	0.00%	$0	$4,642,418	5.92%	$593	$2,916,390,356	5.43%	$538
11	003904	Food Services (Function 35)	$0	0.00%	$0	$900,455	5.31%	$543	$2,916,390,356	5.43%	$538
12	003905	Food Services (Function 35)	$0	0.00%	$0	$1,411,497	7.08%	$755	$2,916,390,356	5.43%	$538
13	003906	Food Services (Function 35)	$35,953	0.96%	$100	$235,226	5.34%	$653	$2,916,390,356	5.43%	$538
14	003907	Food Services (Function 35)	$0	0.00%	$0	$815,148	5.41%	$556	$2,916,390,356	5.43%	$538
15	004901	Food Services (Function 35)	$0	0.00%	$0	$1,936,899	5.86%	$685	$2,916,390,356	5.43%	$538
16	005901	Food Services (Function 35)	$14,964	0.27%	$30	$219,839	3.66%	$435	$2,916,390,356	5.43%	$538
17	005902	Food Services (Function 35)	$0	0.00%	$0	$254,147	2.90%	$243	$2,916,390,356	5.43%	$538
18	005904	Food Services (Function 35)	$7,698	0.19%	$19	$204,352	4.54%	$507	$2,916,390,356	5.43%	$538
19	006902	Food Services (Function 35)	$0	0.00%	$0	$141,571	3.63%	$395	$2,916,390,356	5.43%	$538
20	007901	Food Services (Function 35)	$0	0.00%	$0	$437,113	6.78%	$932	$2,916,390,356	5.43%	$538
21	007902	Food Services (Function 35)	$14,485	0.10%	$9	$928,909	5.93%	$578	$2,916,390,356	5.43%	$538
22	007904	Food Services (Function 35)	$489	0.00%	$0	$1,036,371	6.15%	$601	$2,916,390,356	5.43%	$538

School Spending (and maybe Revenue) data (D) (F)

Figure 2: V1 is the code for each School District. V6 is the total spending on each district's respective nutrition program. V8 is the total spending on the district's respective nutrition program per student in the school district

	GeoFips	GeoName	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	999	United States (Nonmetropolitan Portion)	77.167	77.271	80.298	82.164	83.87	85.213	86.31	86.267	86.382	87.616	91.072	92.522	92.442	96.806	102.793
2	10180	Abilene, TX (Metropolitan Statistical Area)	82.162	79.461	84.109	85.802	88.92	88.582	91.831	90.346	91.674	93.778	94.188	95.631	94.567	100.033	106.455
3	10420	Akron, OH (Metropolitan Statistical Area)	82.497	84.669	84.413	87.295	90.275	91.224	92.247	93.014	93.708	95.359	96.181	97.994	97.844	101.862	106.827
4	10500	Albany, GA (Metropolitan Statistical Area)	77.087	76.115	78.956	81.39	82.607	84.354	85.886	85.626	87.754	87.291	88.260	87.181	87.798	97.377	100.252
5	10540	Albany-Lebanon, OR (Metropolitan Statistical Area)	88.651	88.96	87.794	89.319	91.324	92.763	95.931	96.102	97.229	98.937	105.384	106.641	107.242	111.063	121.399
6	10580	Albany-Schenectady-Troy, NY (Metropolitan Statistical Area)	91.579	90.915	90.466	93.502	94.096	97.436	96.537	98.09	99.498	100.700	101.828	103.202	103.713	108.007	112.054
7	10740	Albuquerque, NM (Metropolitan Statistical Area)	86.451	88.058	88.17	93.211	94.15	94.168	95.621	94.144	94.934	98.087	95.808	98.410	98.516	100.492	108.365
8	10780	Alexandria, LA (Metropolitan Statistical Area)	79.946	76.605	80.569	80.716	85.352	87.651	88.146	87.831	90.544	90.539	89.260	92.214	91.425	97.376	99.992
9	10900	Allentown-Bethlehem-Easton, PA-NJ (Metropolitan Statistica...	90.185	91.172	91.617	92.742	94.508	96.586	96.732	98.293	99.438	101.735	101.189	102.718	104.310	106.880	113.776
10	11020	Altoona, PA (Metropolitan Statistical Area)	83.8	81.681	84.952	86.807	87.269	88.898	86.816	90.079	89.980	91.208	93.182	93.972	93.844	97.204	103.294
11	11100	Amarillo, TX (Metropolitan Statistical Area)	85.387	83.123	85.905	89.43	90.891	92.365	93.53	94.353	95.513	96.153	95.158	97.418	98.914	102.011	106.500
12	11180	Ames, IA (Metropolitan Statistical Area)	73.504	80.043	84.143	85.141	87.321	90.609	90.368	87.699	87.340	89.858	95.864	99.367	97.699	99.741	102.639
13	11260	Anchorage, AK (Metropolitan Statistical Area)	94.963	99.482	96.252	99.114	101.382	101.994	101.859	102.854	106.215	107.790	108.600	108.494	107.971	116.207	119.601
14	11460	Ann Arbor, MI (Metropolitan Statistical Area)	92.395	90.06	91.52	93.147	95.395	95.954	99.593	97.483	96.626	98.476	101.258	104.155	103.051	108.358	113.323
15	11500	Anniston-Oxford, AL (Metropolitan Statistical Area)	78.633	74.195	80.336	84.343	85.78	86.562	87.102	88.646	89.238	88.603	86.896	90.703	89.756	91.209	97.312
16	11540	Appleton, WI (Metropolitan Statistical Area)	86.655	84.196	86.206	87.47	89.47	91.307	91.734	90.924	91.380	92.079	95.411	96.969	96.556	101.742	106.490
17	11700	Asheville, NC (Metropolitan Statistical Area)	83.155	81.197	83.985	86.694	89.046	90.149	91.72	90.539	93.694	93.836	94.947	97.431	97.474	103.202	109.991
18	12020	Athens-Clarke County, GA (Metropolitan Statistical Area)	83.98	83.863	85.664	87.568	88.207	89.463	90.753	90.338	92.114	93.834	92.415	93.875	94.521	102.931	108.580
19	12060	Atlanta-Sandy Springs-Alpharetta, GA (Metropolitan Statisti...	87.431	84.507	88.848	89.532	93.689	94.07	95.615	95.35	96.687	99.406	100.215	101.513	103.336	107.997	114.595
20	12100	Atlantic City-Hammonton, NJ (Metropolitan Statistical Area)	97.938	95.12	96.73	98.028	99.661	97.924	98.552	100.466	100.628	97.846	101.790	100.599	105.363	105.691	114.389
21	12220	Auburn-Opelika, AL (Metropolitan Statistical Area)	80.484	78.58	80.79	85.475	86.07	87.187	88.662	86.29	88.651	89.605	90.753	93.883	93.379	97.653	102.871

Cost of Living (E)

We have the data for this for some schools in Southern California from SY 2018-2019 to SY 2022-2023. We have the companies they contract with and the RFPs they send.

We will need the Vendor Paid List from the CDE and the TEA if we want to have the data for all California and Texas school districts.

(H) Food Procurement

We have the data for this for some schools in Southern California from SY 2018-2019 to SY 2022-2023. See the GitHub for the files.

(I) Student Health Outcomes

We can request data from California's Physical Fitness Test. See 'Physical Fitness Test' under Section 4.2.

(J) Student Academic Outcomes

We can request CALPADS data from the CDE. See 'California Longitudinal Pupil Achievement Data System' under Section 4.2.

We will need to request the following from the CDE:

1. The number of meals served, by school/district (A)
2. The amount of USDA commodities received, by school/district (B)
3. Total nutrition revenue or expenditure (D) (F)
4. Vendor Paid List via CDE Procurement Review (H)

5. Student Health Outcomes via Physical Fitness Test (I)

6. Student Academic Outcomes via CALPADS (J)

We will need to request the following from the TEA: I'll need to look into the specifics a little more

1. The amount of USDA commodities received, by school/district (B)

2. Vendor Paid List via TEA Procurement Review (H)

3. Student Health Outcomes via surveys? Link here. (I)

4. Student Academic Outcomes via Texas Academic Performance Reports Link here. (J)

   Will we need to request individual school district data in Texas to replicate what we did in Southern California?

7 Figures

8 Tables

Table 1: Table title

Note: This table...

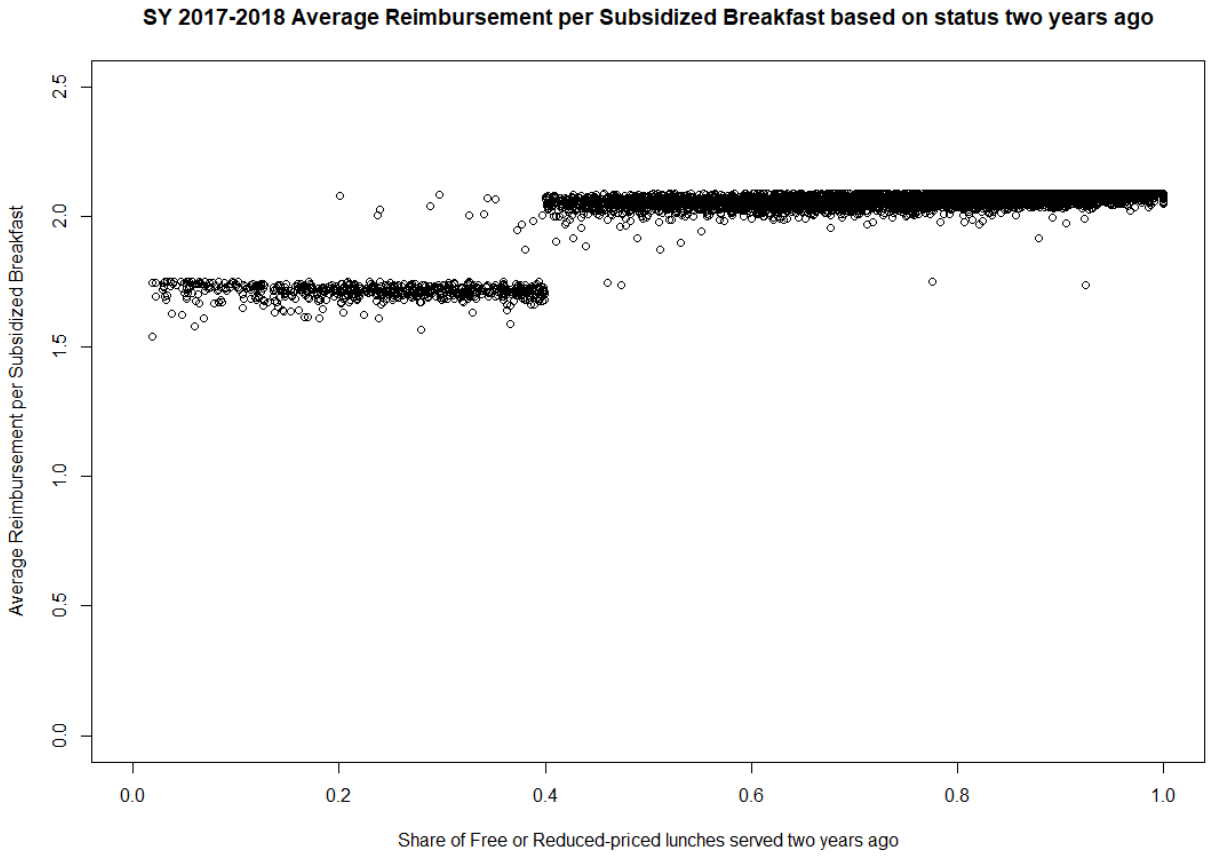
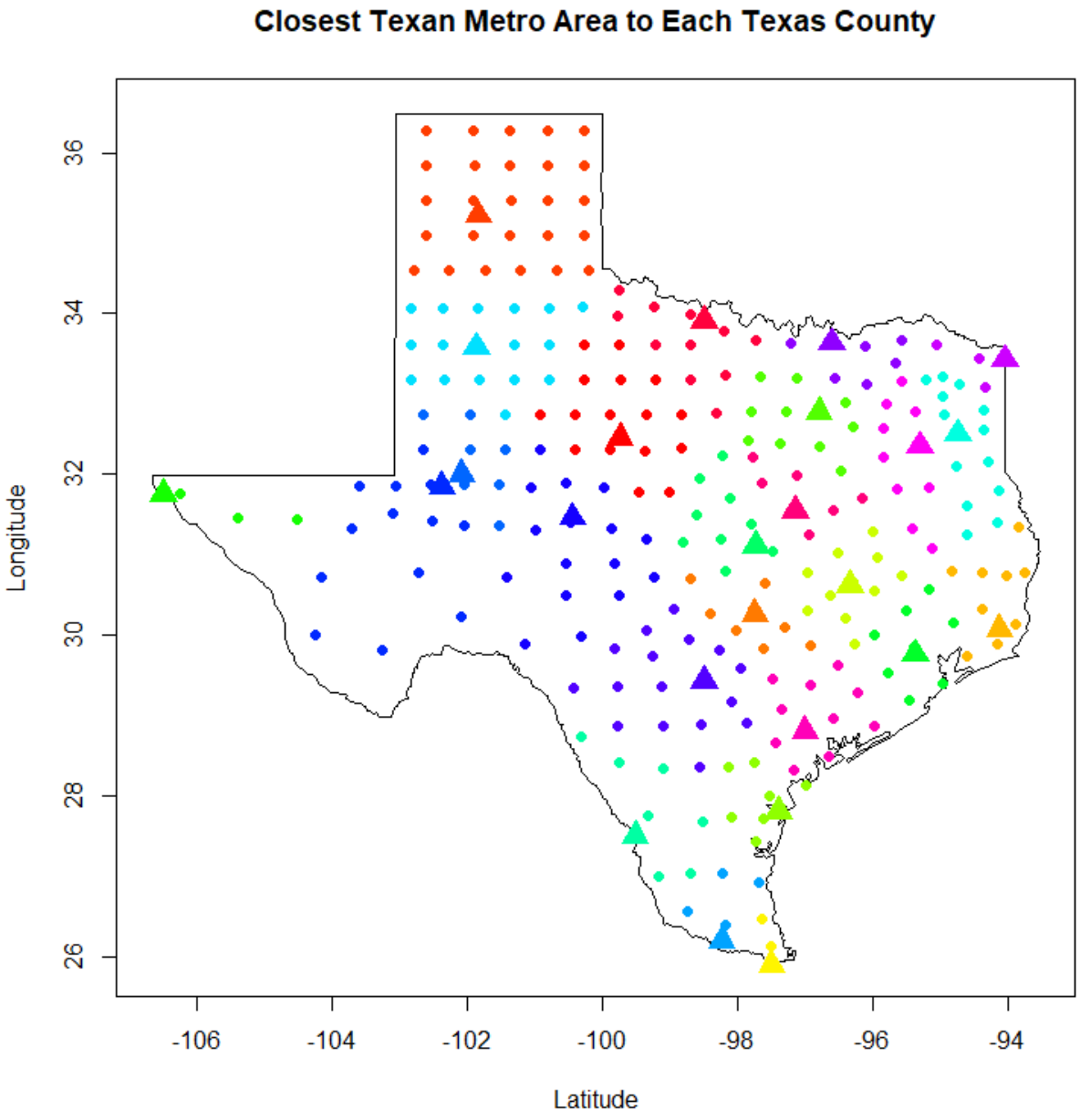
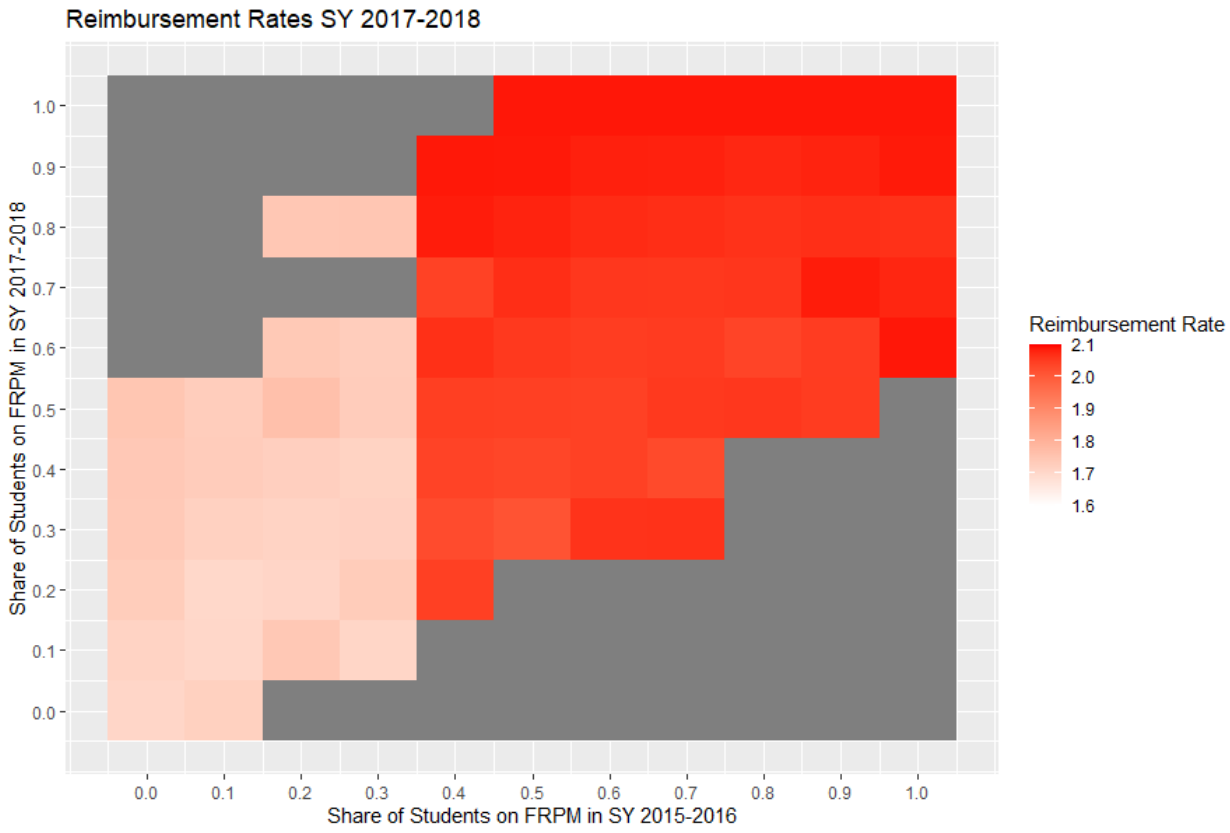


Figure 3: Average Reimbursement per Subsidized Breakfast

Figure 4: Figure title




Reimbursement Rates SY 2017-2018
Share of Students on FRPM in SY 2017-2018
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Share of Students on FRPM in SY 2015-2016
Reimbursement Rate
2.1
2.0
1.9
1.8
1.7
1.6