

## Lunchtime Trends in Texas Schools

Introduction

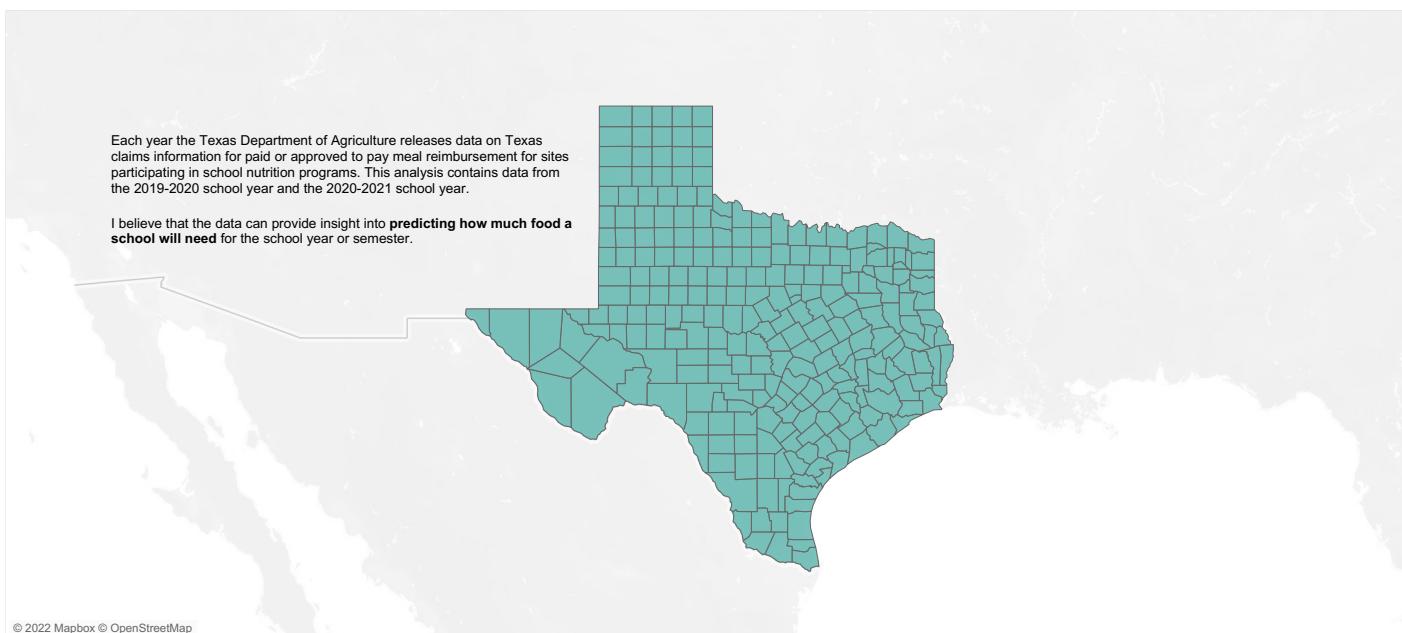
Linear Relationships

Linear Regression

Cluster Analysis

Time Series Analysis

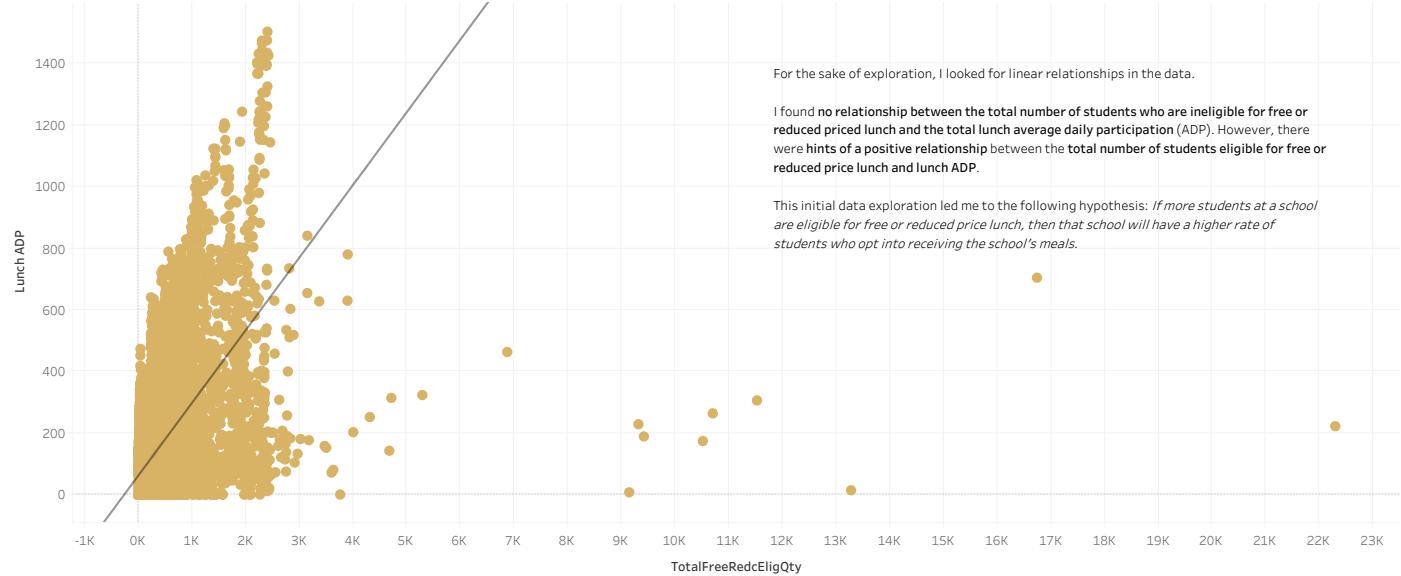
Final Results and  
Recommendations



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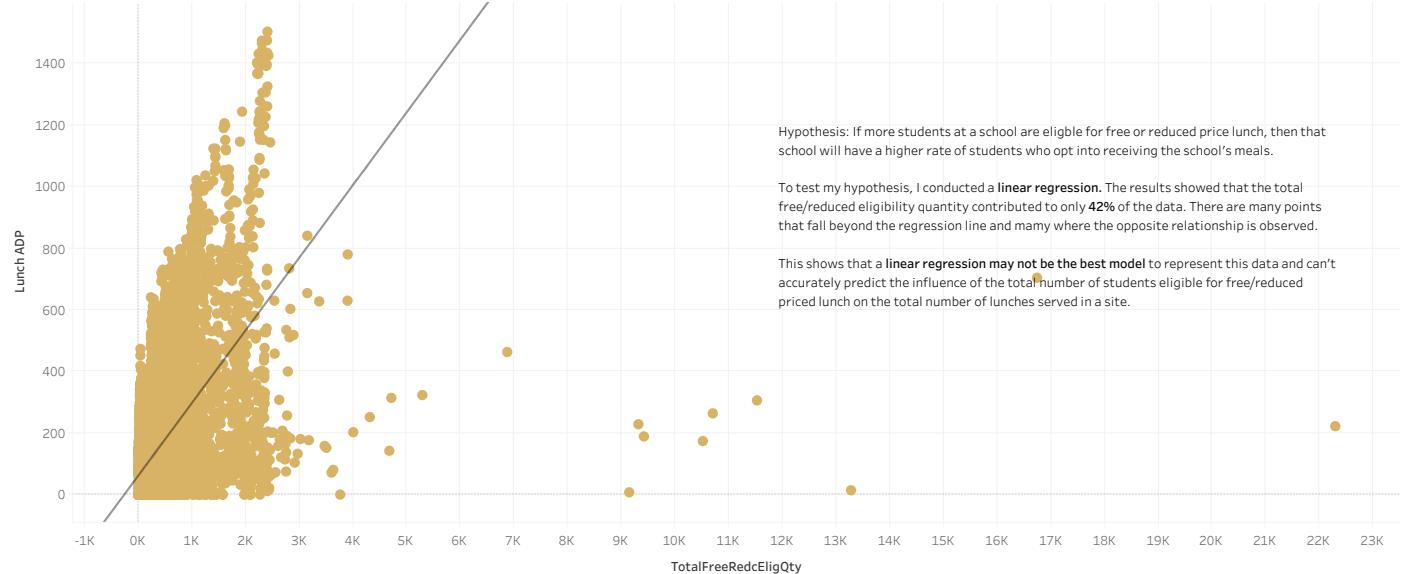
Total Free/Reduced Price Eligibility vs Lunch Average Daily Participation (2020-2021)



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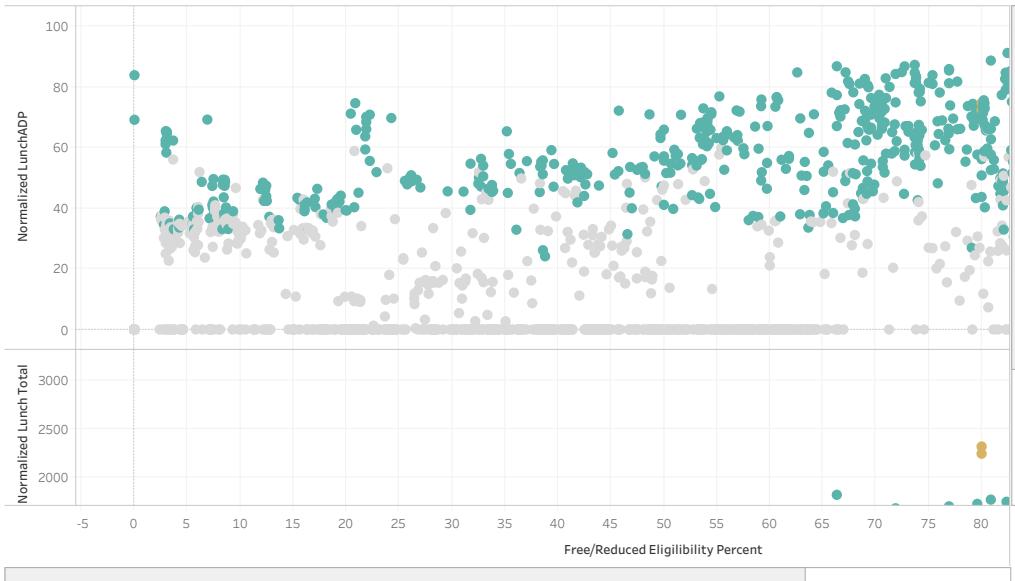
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|--------------|----------------------|-------------------|------------------|----------------------|-----------------------------------|

### Cluster Analysis



A linear regression was not enough to prove my hypothesis, so I approached it using a nonlinear method: **cluster analysis**. By grouping data into clusters, a cluster analysis allows us to compare groups of data for further insight.

I plotted the Free/Reduced Eligibility Percent against both the Normalized Lunch ADP and Lunch Totals. Both analyses had a similar general trend, but the latter presents a cleaner picture.

While organizations with low Lunch participation had Free/Reduced Eligibility percentages that spread from 0-100%, those with **higher lunch participation had higher percentages of students eligible for free/reduced price lunch**. This is shown by the yellowish cluster at the top right, and the right-leaning concentration of the blue cluster.

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|--------------|----------------------|-------------------|------------------|----------------------|-----------------------------------|



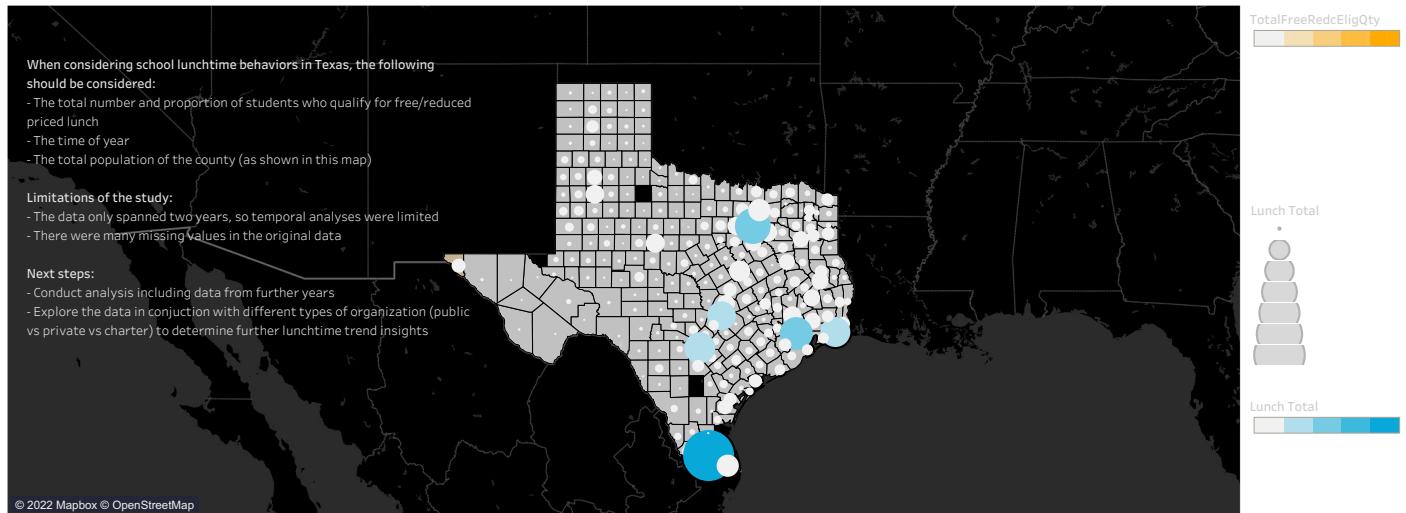
Finally, I conducted a **time series analysis** on the data to gain further insight. The graph to the left shows the sum of Total Lunch and Lunch ADP for the 2019-2020 and 2020-2021 school years. As we can tell from the graph, lunchtime participation tends to follow a **seasonal pattern**, with dips at the beginning of the school year and pits during the summer months.

Additionally, not pictured on the graph is a **downward trend** from 2019-2021. This is likely due to disruptions from the coronavirus pandemic.

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|--------------|----------------------|-------------------|------------------|----------------------|-----------------------------------|

## Final Results and Recommendations



Highlight County  
No items highlighted