



Take-Home Case Study

Sri Mushnoori
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Problem Statement

Analyze sales data for a restaurant chain.

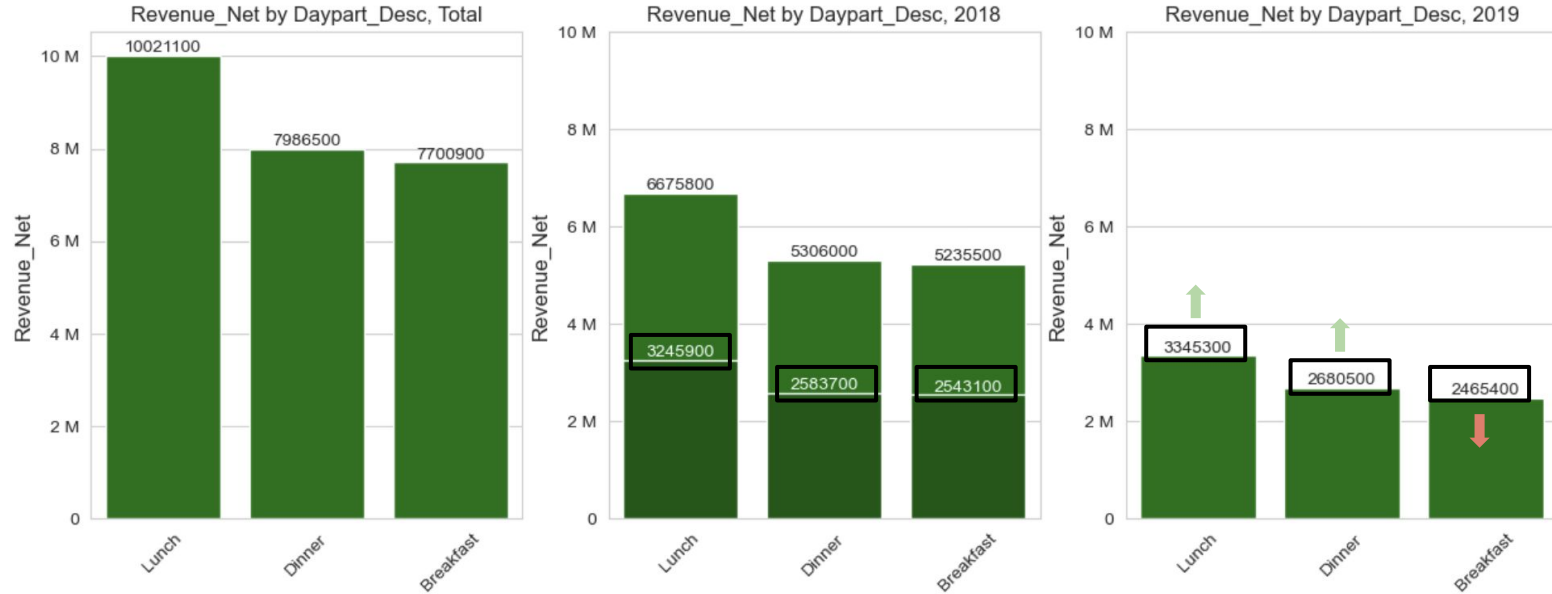
Raw data includes:

- Historical sales data for 2018 and H1 2019 for each product category
- Customer counts per store
- Store descriptions and location details
- Product category details

Total Revenue

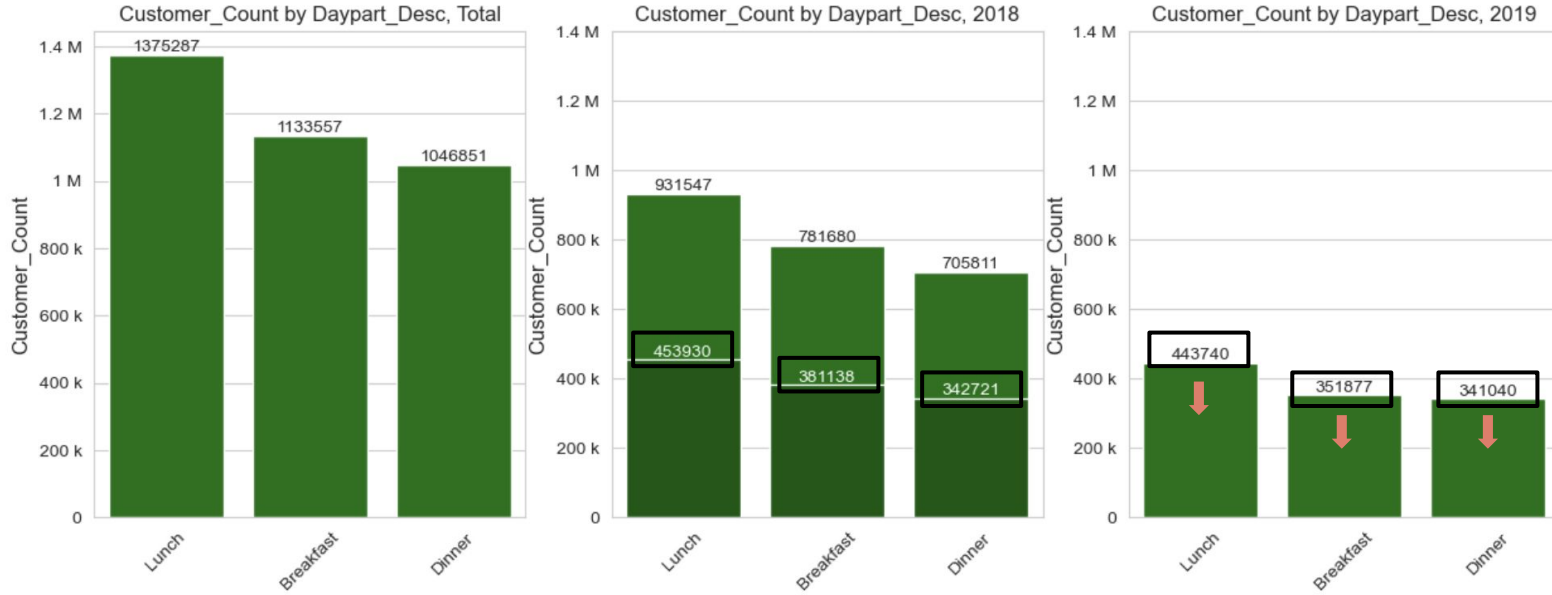
- Total revenue for 2018 was \$17,217,300
 - The revenue for the first half of 2018 was \$8,372,700
- Data is only available for the first half of 2019
 - The revenue for the first half of 2019 was \$8,491,200
- This represents an increase in revenue by 1.42% over a similar period

Revenue by Time of Day



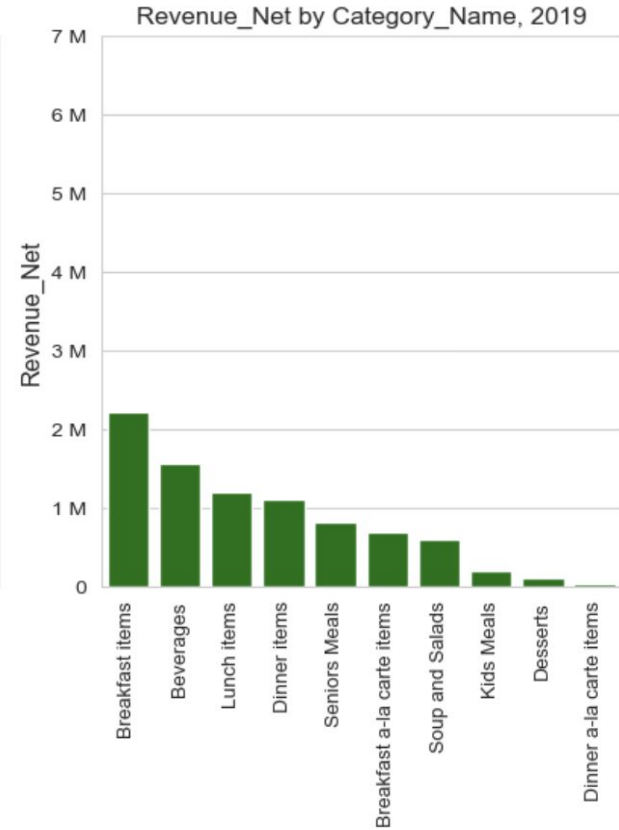
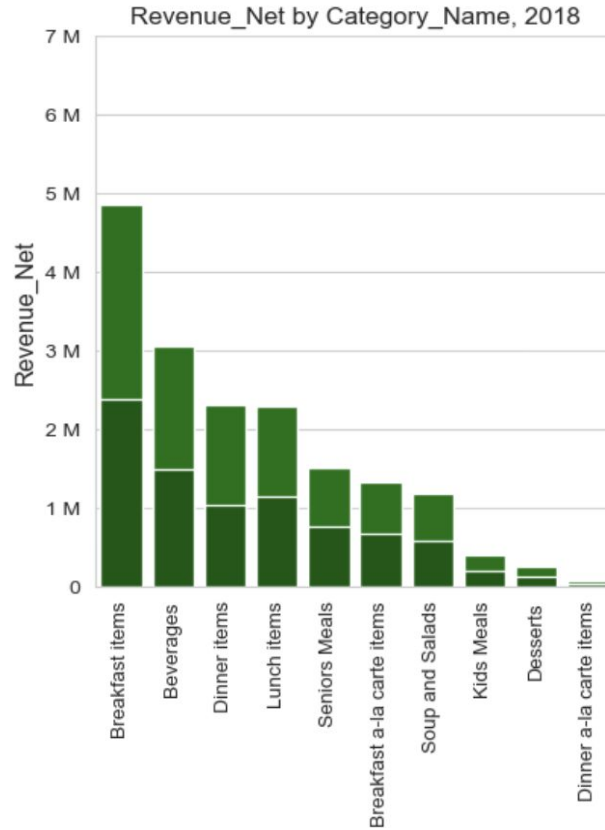
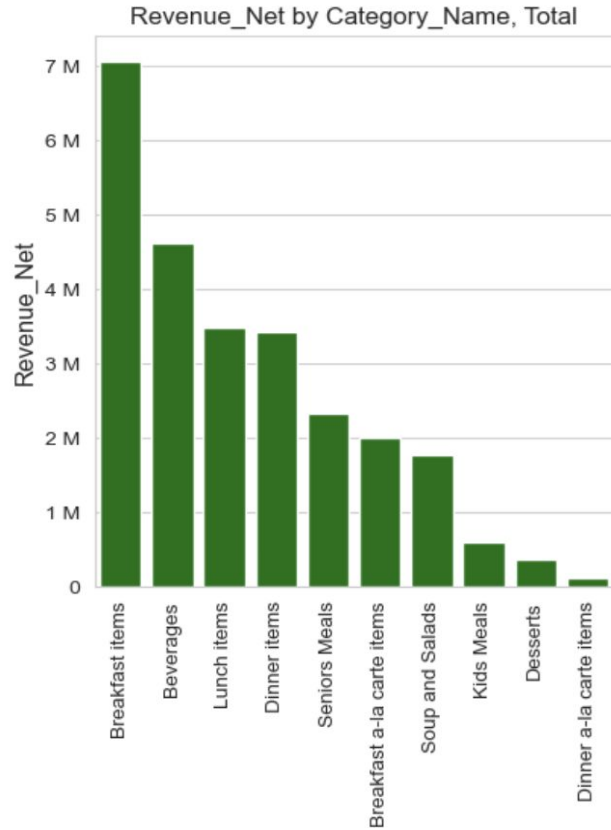
Over similar months, net revenue increased during lunch and dinner hours, but dropped during morning hours.

Customer Count by Time of Day



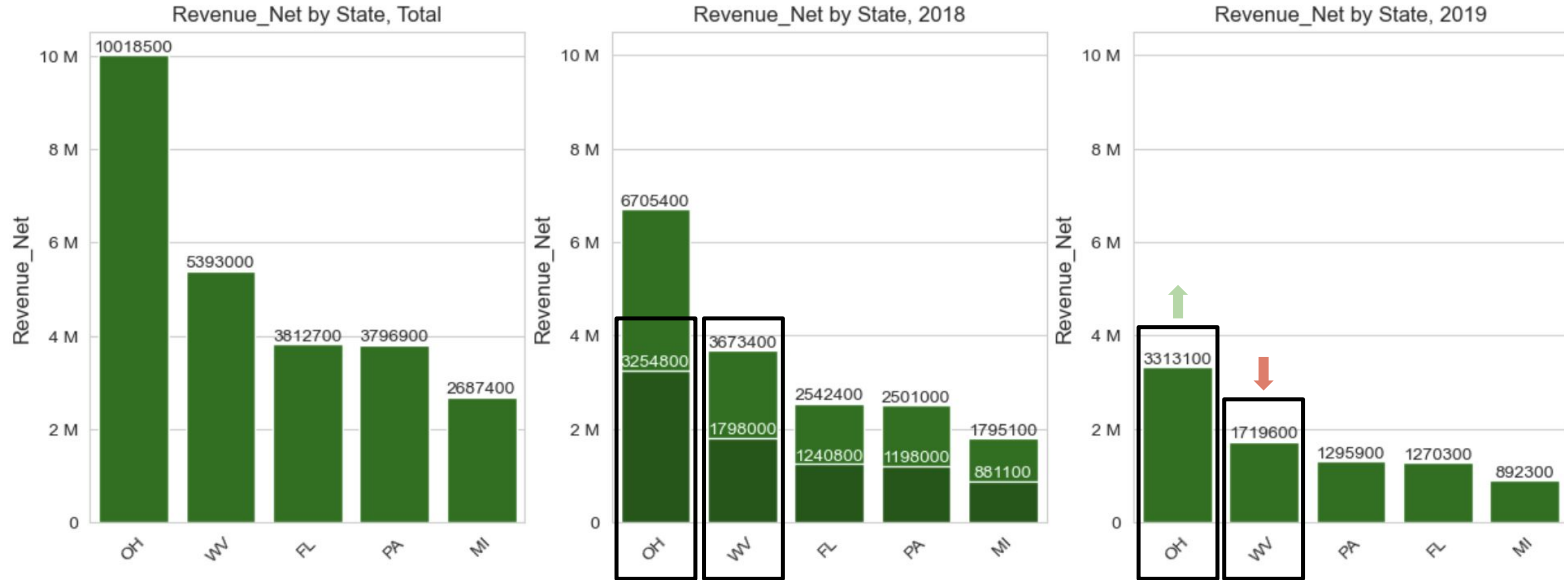
- Customer count dropped across all hours in 2019
 - Interestingly, revenue increased during lunch and dinner hours despite drop in customer count
- Dinner drove higher revenue despite having a lower customer count in both years
 - Customer spend by time of day could be an interesting metric to track

Top Products



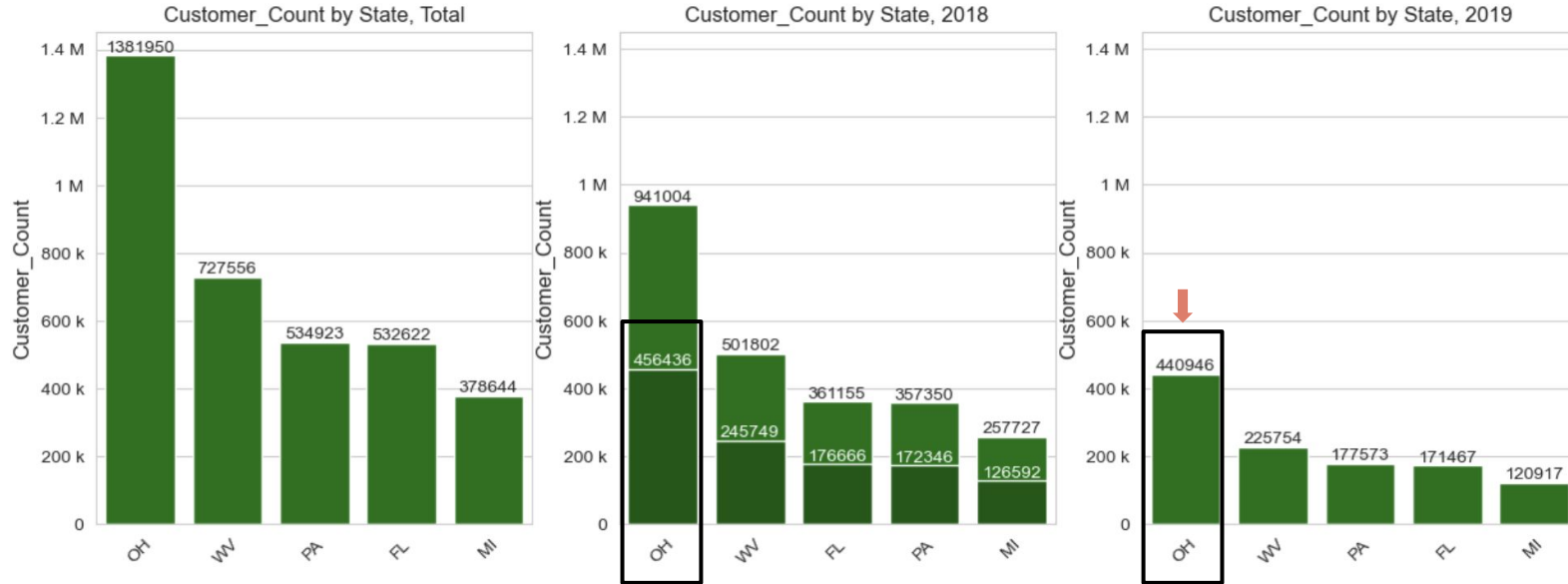
- Breakfast items were by far the highest revenue driver, despite lunch hours driving the most revenue
- All-day breakfast may be a popular concept at this restaurant chain

Top Revenue Earning States



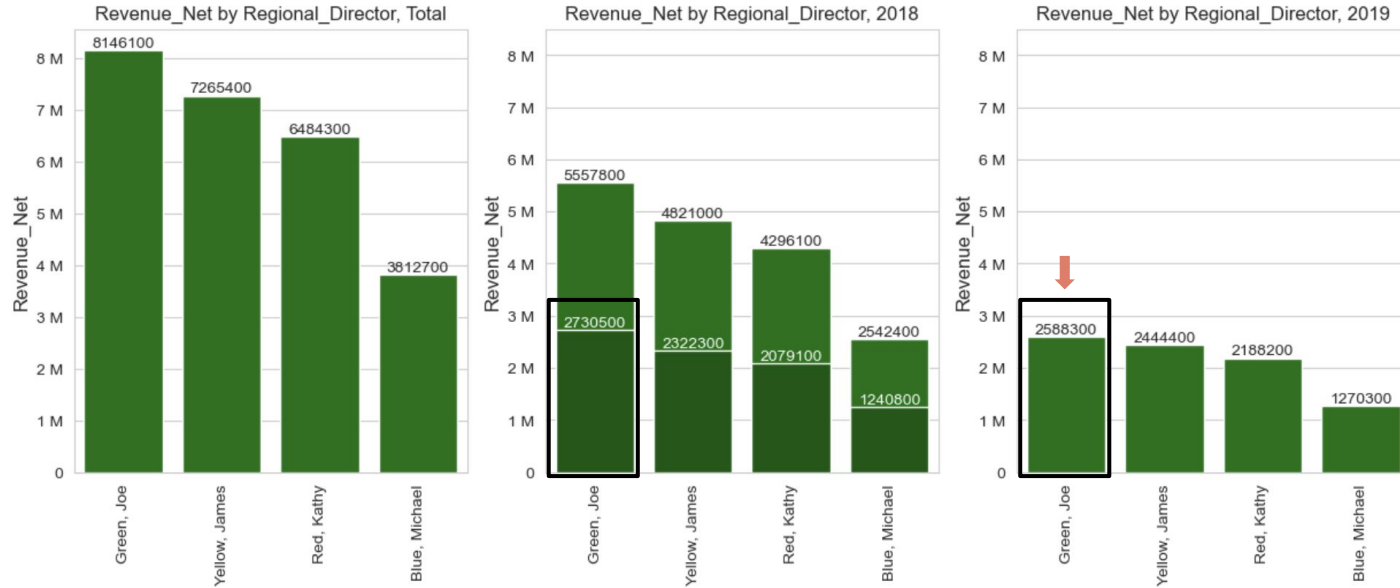
- Ohio was the highest revenue earning state, which is logical since Ohio has 5 out of 10 branches of the restaurant.
- Over similar months, net revenue in Ohio increased by 1.79%
- West Virginia was the only state where revenue dropped (by 4.36%)

Top Customer States



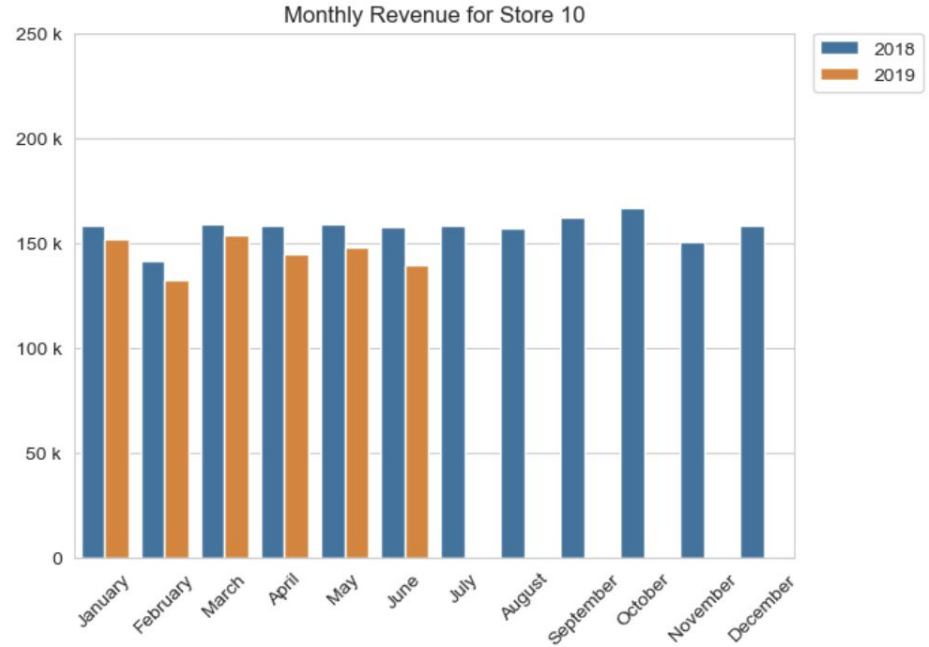
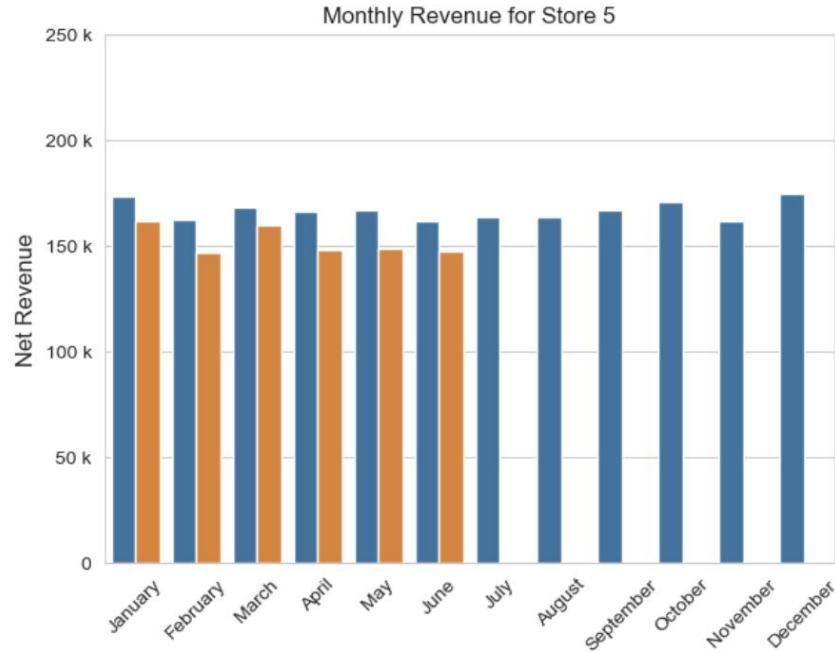
- Over similar months, Ohio saw a drop in customer count by 3.39%
 - Net revenue increased despite this
- Across all states, overall revenue increased by 1.42% and customers dropped by 3.39%

Revenue by Regional Director



- Chains managed by Joe Green saw a drop in revenue by 5.2%
- When looking individually at the stores Joe Green manages, stores 5 and 10 saw lower revenues in all months

Revenue by Regional Director



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Recommendations

Focus the strategy on these two stores.

Some possible solutions:

- Breakfast items and beverages are popular.
 - Focus on implementing and advertising all-day breakfast options, specifically in these locations
- As shown in the previous graphs, seasonal variations do not seem to affect these stores much
 - Joe manages 1 store in West Virginia and 2 in Ohio; and one of each is underperforming
 - This is not a state or region specific event
- Since demand for breakfast foods is high, a small price increase during lunch hours may result in higher revenue

Future Considerations

- Average spend per customer could give some insight into optimizing pricing for times of day and/or products
- Since the chain appeals to young adults and seniors, a breakdown of the customer segments may be valuable information to have
 - Is the decline in customer base from a particular demographic? What could be driving this change? How can we target this audience better?
- Data on turnover based on time of day could also be useful
 - For example, dinner drove higher revenue than breakfast, despite having lower customer counts. Is the lower customer count because people spend longer at the restaurant during dinner?
 - Or is the customer count lower because pricing on dinner items is higher, and more tables are going unfilled?

Summary

1. What is the total revenue for 2018? \$17,217,300
2. What is the total revenue for Breakfast in 2018? \$5,235,500
3. What is the #1 state in revenue for 2019? And #2? #1: Ohio; #2: West Virginia
4. What is the #1 product category in revenue for 2019? And #2? #1: Breakfast items; #2: Beverages
5. How has the revenue and customer count changed between 2019 vs 2018?
 - a. Revenue increased by 1.42% over similar months in 2018
 - b. Customer count decreased by 3.49% over similar months in 2018
6. What is driving the change in customer count? Ex. Region, State, Daypart etc.?
 - a. Customer count depends heavily on time of day, the state, as well as the individual stores.
7. What other factors would you want to consider when trying to decompose change in customer count?
 - a. Seasonal differences could be looked into. In states with more drastic seasons, winters may have lower number of customers. Although there wasn't much season variation observed overall, this could be impacting other factors.
8. When comparing revenue for 2019 vs similar months in 2018, which Regional Director is facing the biggest challenge? (and why)
 - a. Joe Green saw a drop in revenue in the chains he is managing. This could be because he is responsible for the West Virginia location, which has been seeing lower revenue.

Summary

1. Give suggestions on how you would improve this.
2. What can you tell us about pricing and its possible impact on the business?
3. What can you tell us about customer behaviour?
4. What additional marketing information do you think would be useful to assess declines in customer counts?
5. If you could create one key graph for the Executive team that paints the story for 2019, what would you graph?
6. What other key observations would you highlight to managers?
7. Based on this data are there any recommendations you would make to management?