Informing Super Decisions

Data Analysis and Visualization study on Profits and Sales of a Supermarket Chain.

Contents

Question and Hypothesis

1) What are the YTD sales and profit of this supermarket chain? Does it vary by region or state?
- I believe the YTD sales and profits won't entirely be gains and the region might impact whether there are any losses in profit.
2) Will the prior YTD sales and profits show us good business decision making?
- I believe that if the business is making informed decisions the prior YTD sales and profits will show increase in the current YTD numbers.
3) Which products or product type are making the most revenue?
- In the technology age, I believe most of these products making good revenue will be electronics.

Approach

1) Database downloaded from Kaggle as a primary source.
2) Database will be checked for errors and cleaned using Python and Pandas.
3) SQL Queries will be used to obtain the specific data we want on our dashboard.
4) A dashboard visualization will be made in Tableau to showcase findings.

Challenges

1) Tableau Public does not allow custom SQL and can only read Excel or Text files. The database will have to be converted into a Dataframe in Pandas for cleaning and then formatted back into a CSV.
2) With so many features and limited space on our dashboard, we will have to discard some information such as Personal customer information and delivery methods.

Uncovering Findings

- At least 75% of states are making a positive profit ratio based on sales.
- The central and south regions of the States are bringing in the lowest sales and profits based on Prior YTD numbers with a little growth on the current YTD numbers.
- Sales across the Year are consistent with little spikes closer to holidays or the season.
- Top product sales for each state are in electronics and consumer goods.
- California is a major contributor to sales and profit numbers having the most YTD sales and profit across the map.

Conclusion

This supermarket is making good sales and profit in the Eastern and Western regions of the US. If using the data to inform business decisions they could find ways to attract more customers to have a consistent stream of sales and profit in the South and Central regions as well. For states like Texas, with negative profit margins, improvements can be made in upselling or promotion to get customers purchasing products and avoid being at a loss. The South region as a whole is leading to losses in profit and could provide an opportunity to learn more about attracting to customers in these demographics for business growth and success.