Sreeja Reddy Singidi

Super Store Sales

A close-up of a graph

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**CONTEXT:**

This project aims to contribute to the success of a business by utilizing data analysis techniques, specifically focusing on time series analysis, to provide valuable insights and accurate sales forecasting.

Businesses produce enormous amounts of data daily that might be deluged with information. Companies use business intelligence to make sense of this data and make choices quickly. It's an essential solution that helps decision-making by converting unprocessed data into insightful knowledge. Several departments can be empowered by user-friendly business software, which lessens the need for IT assistance for clever and efficient operations.

**DATA PREPARATION:**

In the data preparation stage, only variables pertinent to the visualizations and analysis will be included. The exclusion of certain variables is addressed. The null values are handled. This approach ensures transparency and accountability in the data selection process.

The subsequent step involves a comprehensive analysis of the data to extract valuable insights into the effectiveness of sales strategies. Through visualizations, trends, patterns, and correlations within the sales data will be highlighted. Additionally, customer behavior analysis and competitor comparisons are conducted to further enrich the understanding of the supermarket's market positioning.

**EXPLORATORY ANALYSIS:**

Initial observations and key findings during the exploratory analysis phase will be highlighted. These observations will illuminate the problems or opportunities that prompted further investigation, setting the stage for the subsequent explanatory analysis.

Dashboard Creation:

To kickstart the project, the identification of key performance indicators (KPIs) is crucial. These KPIs, ranging from sales revenue to customer acquisition, will serve as the foundation for an intuitive and visually appealing dashboard. Utilizing Power BI, the dashboard will incorporate interactive visualizations and filtering capabilities.

The below graph shows sales by month. In this, we can see that compared to both the years 2019 and 2020: December 2020 has generated the highest sales.

Recognizing the consistent surge in December sales prompts strategic considerations. Businesses can align marketing campaigns, product launches, and promotional activities to maximize the impact during this peak period.

A graph of sales

Description automatically generated

The analysis of profits by month reveals an intriguing pattern, with fluctuations in various periods, but a particularly noteworthy spike observed in the month of October. This month often marks the onset of the festive season, and consumers may engage in early holiday shopping. Businesses strategically positioning themselves for these preparations could experience a surge in profits.

A graph with a line and a line

Description automatically generated

The analysis of sales by shipment method and product category reveals a compelling trend where the standard class shipment method stands out as the highest revenue generator, particularly in the context of office supplies.

A screenshot of a computer screen

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**EXPLANATORY ANALYSIS:**

The importance of the chosen analytical approach will be emphasized in the explanatory analysis. Rather than delving into every aspect of the methodology, the focus will be on why the chosen approach is crucial for unraveling insights and driving strategic decisions.

The final phase focuses on transforming data into actionable insights. Identified patterns and trends will be translated into strategic recommendations. Whether it be optimizing inventory levels, refining marketing campaigns, or adjusting pricing strategies, these recommendations aim to drive strategic decision-making for the supermarket's growth, efficiency, and customer satisfaction.

Building upon the analyzed historical data, time series analysis techniques, including moving averages and ARIMA models, will be employed to generate accurate sales forecasts for the next 15 days. Rigorous model evaluation will ensure the reliability of the forecasts, with metrics such as Mean Absolute Error guiding the validation process.

**CONCLUSION:**

In conclusion, this project seeks to harness the power of data analysis, time series analysis, and visualization techniques to provide a holistic understanding of the supermarket's performance. By creating an insightful dashboard, conducting thorough data analysis, forecasting sales accurately, and deriving actionable insights, this initiative aims to contribute significantly to the supermarket's success in a competitive market landscape.