



Northeastern University

ASSIGNMENT 4 **SIGNATURE REPORT**

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COMMUNICATE/VISUAL DATA ANALYSIS

SUBMITTED

TO

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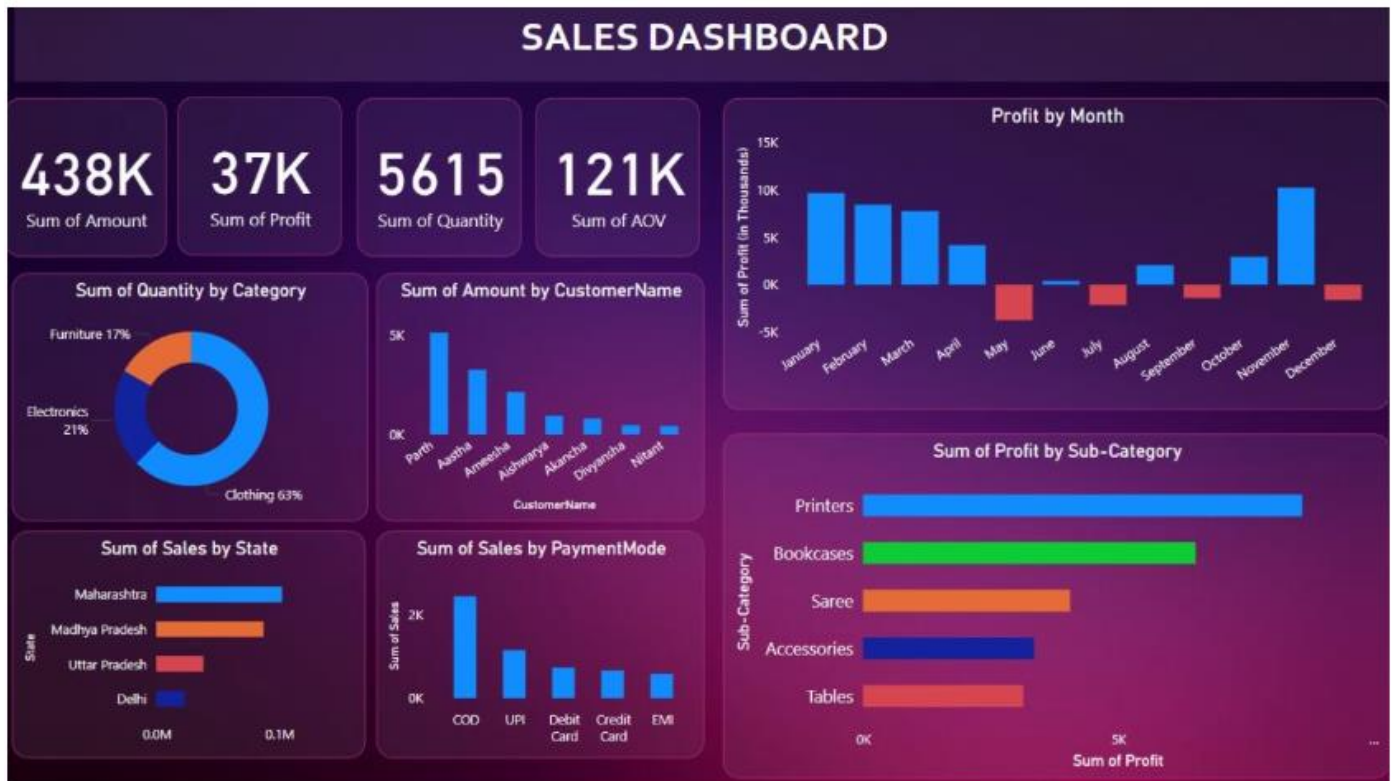
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INTRODUCTION

This report presents an analysis of the sales dashboard, providing key insights into the performance of various business metrics. It explains how the visualizations, derived from the dashboard, can aid in decision-making. The primary objective of this analysis is to communicate complex data effectively through data visualizations, using storytelling to provide actionable insights. The dashboard includes visualizations such as bar charts, pie charts, and trend graphs, each designed to highlight significant patterns and trends in the data. These insights are critical in solving business problems like regional sales variations, customer spending behavior, product performance, and payment preferences.



BACKGROUND OF THE BUSINESS

The business is in focus of a retail store that deals with various categories of products, including clothing, electronics, and furniture. It operates across multiple regions in India, and its customer base includes a variety of demographic groups. The store aims to maximize sales, optimize profit margins, and provide convenient payment options to cater to a broad spectrum of customers.

The store faces several business challenges, such as understanding regional variations in product demand, optimizing product offerings, and identifying key customer segments for better targeting. Additionally, managing payment options and profitability for various product categories remain crucial concerns for the business.

BUSINESS PROBLEM

The store struggles with several operational and strategic issues, including:

- Regional Sales Patterns:** The sales distribution across states is uneven, and the business lacks insights on how to optimize sales strategies in underperforming regions.

- **Product Category Performance:** The business needs to identify which categories and sub-categories drive the highest profits, so they can prioritize these products.
- **Customer Spending Behaviour:** Understanding how different customers behave when making purchases will allow for targeted marketing and personalized promotions.
- **Payment Mode Preferences:** With multiple payment options available, it's crucial to understand which payment methods are most popular and how this impacts the store's operations.
- **Profitability Variations Across Months:** The business has noticed fluctuations in profitability, with some months showing negative trends that require further investigation.

DASHBOARD INSIGHTS AND SOLUTIONS

The dashboard is an essential tool that provides insights into multiple dimensions of the business. Below are the key visualizations and their relevance in solving the business problems:

- **Sum of Amount by Customer Name:**
 - Insight: Parth has spent the most, nearing 5K, while Nitant has the lowest expenditure.



- Solution: By targeting high-value customers like Parth for loyalty programs and offering incentives for low-spending customers like Nitant, the store can enhance customer retention and increase revenue from both ends.
- **Sum of Quantity by Category:**
 - **Insight:** Clothing leads in quantity sold (63%), followed by electronics (21%) and furniture (17%).



- **Solution:** The store should prioritize stocking clothing and potentially find ways to boost furniture sales through promotional offers or targeted marketing campaigns.

- **Sum of Sales by State:**

- **Insight:** Maharashtra shows the highest sales, while Delhi and Uttar Pradesh contribute minimally.



- **Solution:** Regional marketing efforts can be ramped up in Uttar Pradesh and Delhi, with more localized strategies to boost sales in these states. Optimizing logistics and expanding reach in underperforming areas will also be crucial.

- **Sum of Sales by Payment Mode:**

- **Insight:** Cash on Delivery (COD) is the most preferred payment method, followed by UPI and debit cards.



- **Solution:** The business should continue to prioritize COD as the primary payment option but also explore incentives to encourage UPI and debit card usage, which are more efficient for processing.

- **Profit by Month:**

- **Insight:** The business enjoys high profits in January to April and December, but there are negative profits in May and July.



- **Solution:** The store should investigate the causes behind the low profitability in May and July—whether due to product mix, pricing strategies, or other external factors. Adjusting operations and marketing during these months can help optimize profitability.

- **Sum of Profit by Sub-Category:**

- **Insight:** Printers have the highest profit, far exceeding other sub-categories such as bookcases and sarees.



- **Solution:** The store can focus on expanding sales for printers while potentially reconsidering the pricing and profitability strategies for underperforming sub-categories like tables and sarees.

The dashboard also presents key figures that provide a snapshot of the store's performance across various business metrics. Here are the key insights:

- **Sum of Amount:** 438K
 - **Insight:** The total amount spent by customers is 438K. This reflects the overall sales revenue, which can be tracked and compared to previous periods or benchmarks.
 - **Solution:** The business can focus on increasing this number through targeted marketing efforts aimed at increasing customer spending.
- **Sum of Profit:** 37K
 - **Insight:** The store generated a profit of 37K, which is a key indicator of business success. Profitability is crucial for the business to sustain operations and fuel growth.
 - **Solution:** To improve profitability, the store should focus on higher-margin products or strategies to reduce operational costs.
- **Sum of Quantity:** 5615
 - **Insight:** A total of 5615 items were sold. This figure gives a sense of the volume of sales, helping to assess the demand for different products.
 - **Solution:** The store can use this data to optimize inventory and ensure that high-demand products are always in stock, preventing lost sales opportunities.
- **Sum of AOV (Average Order Value):** 121K
 - **Insight:** The average order value (AOV) is 121K. This is an important metric for understanding customer purchasing behavior and the average revenue per transaction.
 - **Solution:** Increasing the AOV through upselling and cross-selling strategies can significantly boost overall sales and profitability.

The following image highlights the key metrics from the sales dashboard, including the total sales amount, profit, quantity sold, and average order value (AOV).



SWOT ANALYSIS OF THE BUSINESS

To complement the insights derived from the dashboard, we present a SWOT analysis. This helps evaluate the store's current position and identify areas for growth.

Strengths: <ul style="list-style-type: none">• High sales in Maharashtra and other major regions.• Strong product performance in categories like clothing and electronics.• Cash on Delivery (COD) as a preferred payment option, which appeals to cash-sensitive consumers.	Weaknesses: <ul style="list-style-type: none">• Profitability issues in May and July due to low sales or high operational costs.• Underperformance in certain regions such as Delhi and Uttar Pradesh.• Low sales in furniture, which requires further investigation into product offerings and promotional efforts.
Opportunities: <ul style="list-style-type: none">• Expanding high-margin product categories like cloths and printers, which generate significant profits.• Targeted marketing campaigns to boost sales in underperforming regions.• Optimizing payment processing by promoting more efficient payment methods like UPI and debit cards.• Personalizing offers for high-value customers to increase their loyalty and spending.	Threats: <ul style="list-style-type: none">• Seasonal fluctuations that affect sales, especially in certain months like May and July.• Increased competition in high-demand categories like clothing and electronics.• External factors, such as economic conditions or consumer trends, that could impact purchasing behavior.

CONCLUSION:

The sales dashboard has proven to be an invaluable tool for understanding key business metrics. By offering insights into customer behavior, regional sales performance, product profitability, and payment preferences, it allows the store to make data-driven decisions that can improve overall business performance. The SWOT analysis further identifies strengths to leverage and areas for improvement, which can help in formulating strategic initiatives for growth.

In conclusion, the dashboard not only serves as a powerful visualization tool but also as a decision-making aid, enabling the store to address its challenges, capitalize on opportunities, and sustain long-term growth.

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