PROJECT REPORT

ON

SUPERSTORE SALES DATA ANALYSIS AND INSIGHTS

In partial fulfilment for the award of the degree

MASTERS OF BUSINESS ADMINISTRATION

SESSION :2024-2026

Under the supervision of

DR. SOURABH POSWAL

Submitted by

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MBA 1ST semester , SEC A

ACKNOWLEDGEMENT

I would like to express my gratitude to my supervisor: **DR. SOURABH POSWAL.** Thank you for leading me through my project. Your feedback and advice were priceless.

My heartiest gratitude to our parents, family members and mentors for their continuous encouragement and blessings best wishes and moral support which was a constant source of assurance, guidance, strength and inspiration to us. Finally, I would like to express our deepest gratitude to all mighty and thank him from the bottom of our heart.

ANANT BHADRAKASHI

DECLARATION

I hereby declare that the project entitled is an outcome of my efforts under the guidance of DR. SOURABH POSWAL The project is submitted to COER University, for the partial fulfilment of the Masters of Business Administration project 2024-2025. I hereby also declare that this project work is my original work.

ANANT BHADRAKAHI

EXECUTIVE SUMMARY

This report summarizes the analysis of SuperStore's sales data, presented through Power BI visualizations. It examines key performance metrics like sales, profit, and quantity, offering actionable insights.

The project aims to explore sales data across various dimensions, including regions, product categories, shipping modes, and time trends, to support strategic decision-making.

The dataset originates from internal sales records of SuperStore, detailing orders, products, and financials.

The SuperStore Sales Dashboard is an interactive analytical tool created using Power BI to visualize and evaluate sales performance data for a fictional retail chain. This dashboard enables stakeholders to gain valuable insights into sales trends, regional performance, customer preferences, and profitability metrics. By presenting data in an intuitive format, it empowers decision-makers to identify patterns and make informed business decisions efficiently.

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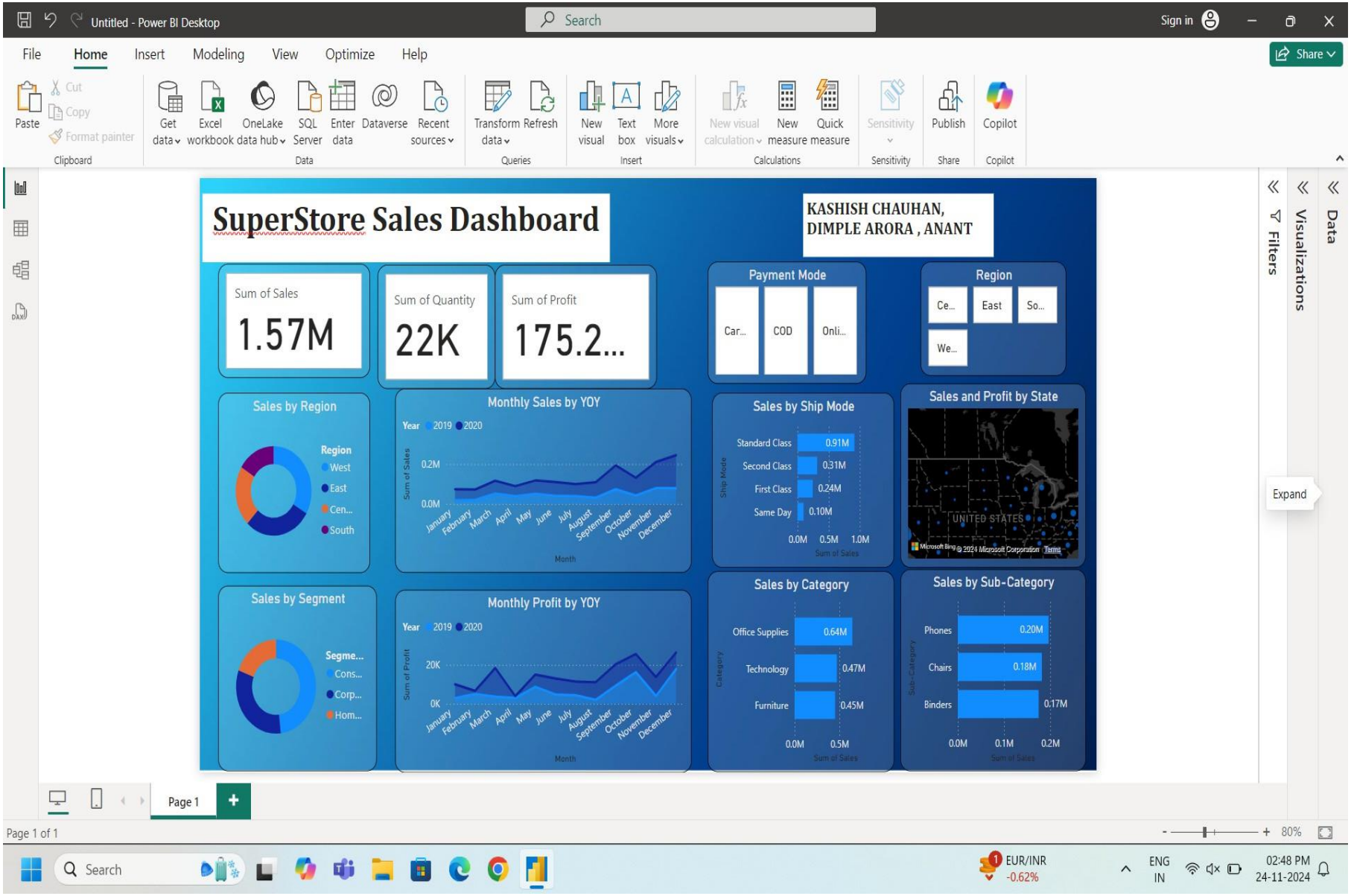
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INTRODUCTION

The SuperStore Sales Dashboard is an interactive analytical tool created using Power BI to visualize and evaluate sales performance data for a fictional retail chain. This dashboard enables stakeholders to gain valuable insights into sales trends, regional performance, customer preferences, and profitability metrics. By presenting data in an intuitive format, it empowers decision-makers to identify patterns and make informed business decisions efficiently.

This project focuses on providing a comprehensive overview of sales data, identifying key drivers of profitability, and enabling better planning strategies for the future.

The dataset contains 23 columns and 5,901 rows. Key columns relevant to the dashboard and analysis include:

Sales, Quantity, and Profit: Core metrics for analysis.

Region, State, and City: Geographical breakdown.

Ship Mode and Payment Mode: Operational details.

Segment and Category: Customer segmentation and product grouping.

Order Date and Ship Date: Time-based trends.

Returns: Limited data on returned products.

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The dashboard uses a blue theme with various chart types:

Pie charts for regional and segment sales.

Line charts for YoY trends.

Bar charts for category and sub-category comparisons.

OBJECTIVES

The primary objectives of this project are as follows:

1. Visualizing Sales Metrics: Present sales, profit, and quantity sold across various dimensions such as region, category, and time.

2. Performance Analysis: Analyze monthly sales and profit trends, comparing year-over-year (YoY) changes for enhanced understanding of growth patterns.

3. Regional Insights: Identify high-performing regions and segments to prioritize resources effectively.

4. Customer Behavior: Understand purchasing preferences by analyzing payment modes, ship modes, and sub-category performance.

5. Strategic Decision-Making: Provide actionable insights to optimize product categories, inventory, and regional operations for increased profitability.

6. Understand sales distribution across regions and categories.

7. Identify the most profitable segments and products.

8. Analyze time-based sales trends.

9. Recommend strategies for growth.

METHODOLOGY

The development of the super store Sales Dashboard involved several key steps:

1. Data Collection: Data was sourced from internal sales records, including information on super store sales figures, customer demographics, and transaction details. This dataset was comprehensive, ensuring that the analysis was robust and reflective of actual sales performance.

2. Data Preparation: The raw data underwent a thorough cleaning process, where missing values were addressed, and data types were standardized. This step ensured that the dataset was reliable and ready for analysis.

3. Dashboard Design: The layout of the Power BI dashboard was designed with user experience in mind. Key performance indicators (KPIs) were prominently displayed through cards, while visualizations like charts and slicers were strategically placed to facilitate easy navigation and interaction.

DATA SOURCES

The superstore sales dataset utilized for this analysis was downloaded from the Kaggle website, a well-known platform for data science and machine learning projects. Kaggle hosts a variety of datasets contributed by users and organizations, making it an invaluable resource for researchers and analysts.

Kaggle: The primary source of the dataset is Kaggle, where users can access a wide range of data relevant to various domains, including automotive sales.

Excel Format: The dataset is provided in an Excel file format (.xlsx), allowing for structured organization and easy manipulation of the data. This format facilitates the analysis and visualization processes using tools like Power BI.

Community Contributions: The dataset may include contributions and insights from the Kaggle community, which often enrich the data with additional context and value. Users can share their experiences, analyses, and improvements related to the dataset, fostering a collaborative environment.

Data Cleaning and Preparation: Before analysis, the dataset may require cleaning and preparation to address any inconsistencies or missing values. The Excel format allows for straightforward data transformation, enabling users to tailor the dataset to meet their specific analytical needs.

DATA DESCRIPTION

The dataset contains 23 columns and 5,901 rows. Key columns relevant to the dashboard and analysis include:

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POWER BI PROCESS

The Power BI process for developing a comprehensive superstore sales dashboard includes key stages:

dashboard design, data modelling, and creating visualizations. Each element plays a vital role in ensuring that the dashboard communicates insights clearly and effectively.

Below is an elaborate description of each stage, including all graphs, slicers, cards, and their purposes.

1. Dashboard Design

The design phase is crucial for ensuring that the dashboard is user-friendly, visually appealing, and effectively communicates the desired insights. The design of the superstore sales dashboard involves the following elements

Layout:

The dashboard is structured into sections that include high-level metrics, detailed visualizations, and interactive filters. This allows users to quickly navigate and access critical information.

Header Section:

Contains the title of the dashboard, a brief introduction, and the date of the report.

Main Content Area:

Divided into metrics, visualizations, and filters.

Color Scheme:

A consistent color palette is used throughout the dashboard to enhance readability and visual appeal.

Fonts and Text:

Clear and legible fonts are used for titles, labels, and data points, ensuring that users can easily read and understand the information presented.

Interactive Elements:

The dashboard incorporates interactivity, allowing users to filter and explore data dynamically. This is achieved through slicers and interactive visuals.

2. Data Modelling

Data modelling in Power BI involves structuring data to allow for effective analysis and visualization.

This step is crucial for making relationships between data tables and ensuring accurate calculations.

Key aspects of data modeling include:

Data Import: The cleaned dataset is imported into Power BI from various sources, such as Excel files or databases

Establishing Relationships:

Relationships are established between different tables to enable accurate data analysis.

DASHBOARD DESIGN PROCESS

To design a Power BI dashboard, follow these steps:

1. Data Preparation

Data Collection: Gather data from your source(s) such as Excel, SQL Server, or any other database.

Data Cleaning: Ensure the dataset is clean, structured, and free from duplicates or errors.

Data Import: Use the "Get Data" feature in Power BI to import the dataset into your Power BI environment.

2. Data Modelling

Relationships: Define relationships between tables if your dataset includes multiple tables.

Measures: Create measures using DAX (Data Analysis Expressions) to calculate key metrics like Sum of Sales, Sum of Profit, and Sum of Quantity.

3. Dashboard Layout Design

Page Settings: Adjust the page size and background color to ensure a professional appearance.

Header and Title: Add a title like "SuperStore Sales Dashboard" and include relevant contributors' names.

4. Visualizations

KPI Cards:

Use KPI cards to highlight key metrics such as Sum of Sales, Sum of Quantity, and Sum of Profit.

Charts:

Donut Charts: Showed sales distribution by region and segment.

Line Charts: Represented monthly sales and profit trends year-over-year (YOY).

Bar Charts: Displayed sales by ship mode, category, and sub-category.

Map: Used a map visual to showcase Sales and Profit by State.

Filters and Slicers: Added slicers for filtering data by Region and Payment Mode (e.g., Card, COD, Online).

5. Formatting and Customization

Use consistent color themes for better visual appeal.

Adjust font sizes and align visuals for clarity.

Add tooltips to visuals for additional insights when hovering.

6. Testing

Cross-validate the visualizations with raw data to ensure accuracy.

Check interactivity between slicers and visuals.

7. Publishing

Save the dashboard and publish it to the Power BI service for sharing with stakeholders.

Set up scheduled refreshes if the data source is dynamic.

KEY INSIGHTS AND ANALYSIS

Visual 1: Key Metrics Overview

Sum of Sales: $1.57M

Sum of Quantity Sold: 22K units

Sum of Profit: $175.2K

Insights:

The total sales figure highlights the store's overall revenue.

The quantity sold shows the scale of operations, indicating a high sales volume.

The profit is relatively low compared to the sales, suggesting potential issues with high costs, discounts, or low-margin products.

Relationship:

While the sales volume is high, the profit margin (11%) indicates that the focus might be on high-volume, low-margin strategies.

Visual 2: Sales by Region (Donut Chart)

West Region: Largest share of sales.

East and Central Regions: Moderate sales.

South Region: Lowest contribution.

Insights:

West dominates sales, likely due to better market penetration or a larger customer base.

The South region needs attention to improve sales performance through targeted strategies like promotions or product diversification.

West leads with $522K (33% of total sales).

Central and South contribute 39% combined

Relationship:

High sales in the West correlate with other metrics, such as profit. The South's low sales might also affect its profitability.

Visual 3: Monthly Sales Year-over-Year (Line Chart)

Trend: Sales in 2020 consistently outperform 2019.

Peak Month: December, likely driven by holiday shopping.

Insights:

Sales growth in 2020 indicates overall improvement, potentially due to marketing campaigns or increased customer demand.

Seasonal trends play a significant role, with a noticeable spike during the holiday season.

Sales steadily increase in 2020 compared to 2019, peaking in December 2020 with $126K.

Relationship:

Year-over-year growth reflects the business's ability to scale. This could correlate with efforts in high-performing regions or product categories.

Visual 4: Sales by Segment (Donut Chart)

Consumer Segment: Largest share.

Corporate and Home Office Segments: Smaller but significant contributions.

Office Supplies dominate with $644K.

Furniture and Technology contribute $452K and $471K, respectively

Insights:

The consumer segment drives the majority of sales, suggesting a focus on B2C operations.

Corporate and Home Office could represent opportunities for expansion.

Relationship:

Aligning consumer-focused strategies with regional performance (e.g., the West) can amplify results.

Visual 5: Monthly Profit Year-over-Year (Line Chart)

Trend: Profits in 2020 exceed 2019.

Profit Spikes: Correspond to sales peaks (e.g., December).

Insights:

Profitability growth matches sales growth, showing operational efficiency improvements.

Spikes suggest that promotional campaigns during peak seasons are effective.

Relationship:

Monthly sales and profit trends are interlinked, reinforcing the impact of demand surges during peak periods.

Visual 6: Sales by Ship Mode (Bar Chart)

Standard Class: Most used shipping method (58%).

Same Day Shipping: Minimal use.

Insights:

Customers prefer cost-effective shipping options.

Same Day Shipping is underutilized, possibly due to high costs or limited availability.

Standard Class accounts for $912K (58%), far ahead of other modes.

Relationship:

The dominance of Standard Class aligns with the focus on high sales volume at low costs.

Visual 7: Sales by Category (Bar Chart)

Office Supplies: Highest sales ($644K).

Technology and Furniture: Moderate but substantial sales.

Insights:

Office Supplies are consistent performers, likely due to their broad appeal.

Technology shows growth potential with higher average product value.

Relationship:

Categories align with segments (e.g., Office Supplies are essential for Corporate and Home Office customers).

Visual 8: Sales by Sub-Category (Bar Chart)

Phones: Top-performing sub-category.

Chairs and Binders: Also significant contributors.

Insights:

Phones drive Technology category sales, reflecting consumer preferences.

Chairs and binders underline the importance of office-related products.

Phones top the list with $197K, followed by Chairs ($182K).

Relationship:

Sub-category performance ties into the overall category sales and regional preferences.

Visual 9: Sales and Profit by State (Map Visualization)

Key States: California and New York dominate both sales and profits.

Insights:

Concentrated sales in these states suggest strong brand presence and customer loyalty.

States with lower contributions might need more marketing efforts.

Concentrated profits in states like California and New York.

Relationship:

High sales states like California directly influence regional dominance (e.g., West region).

RECOMMENDATIONS

1. **Focus on High-Performing Regions**: Invest in the West region while addressing challenges in the South.
2. **Product Optimization**: Increase inventory for Phones and Office Supplies to meet demand.
3. **Improve Shipping Efficiency**: Address issues in Same-Day and First-Class shipping modes to enhance customer satisfaction.
4. **Seasonal Campaigns:** Leverage sales data to plan promotions during peak months (November and December).

CHALLENGES

Some of the challenges faced during the creation of this dashboard include:

Data Cleaning: Ensuring the dataset was free from inconsistencies and missing values.

Visualization: Selecting appropriate visualizations to convey complex information effectively.

Scalability: Designing the dashboard to be flexible for future data updates.

CONCLUSION

The SuperStore Sales Dashboard provides a holistic view of the company's performance, highlighting strengths and areas for improvement. By leveraging these insights, stakeholders can drive strategic initiatives, improve operational efficiency, and achieve sustainable growth.