DATA ANALYSIS REPORT

TITLE: SUPERSTORE SALES ANALYSIS

Introduction

In today's data-driven world, businesses require actionable insights to make informed decisions that drive growth and efficiency. This Power BI dashboard focuses on a comprehensive analysis of a fictional "Superstore" retail dataset, which includes various aspects like sales, profit, customer segmentation, and product performance. The goal of this dashboard is to present key metrics and trends in a visually intuitive way, helping stakeholders quickly identify areas of success and opportunities for improvement across different regions, product categories, and customer segments.

Why I Chose This Topic

I chose this project to gain hands-on experience in data analysis and visualization by applying business intelligence tools to a real-world-like retail dataset. Retail analysis is vital for companies to understand customer behaviour , improve operational efficiency, and increase profitability. By creating this dashboard, I aimed to learn more about data manipulation and visualization while developing skills in uncovering meaningful insights that businesses can leverage for competitive advantage. This topic not only aligns with real-world business requirements but also strengthens my proficiency in using Power BI, a widely used tool in data analysis and business intelligence.

Software and Tools Used

- **Power BI**: The primary tool used for building this dashboard, with its robust data modeling, visualization, and reporting capabilities.
- **Microsoft Excel**: Used for initial data cleaning, transformations, and ensuring that data formats were compatible with Power BI.

Data Source

- **Dataset Origin**: The dataset, titled "Global Superstore Sales," was obtained from **Kaggle**, an online community known for providing a variety of datasets for data science and machine learning projects.
- **Dataset Content**: It includes sales, profit, customer information and returns details across different categories and regions, providing a rich source for analysis in the retail domain.

Various Questions that are answered using this dashboards:

1. **What are the total sales, and how do they trend over time (monthly, quarterly, annually)?**

   Starting in 2011, the sales were $2.26 million, establishing a baseline for the following years. In 2012, sales increased to $2.68 million, marking a growth of around 18.6% from the previous year. This positive trend continued into 2013, with sales reaching $3.14 million, a further increase of approximately 17.2% over 2012. The most significant growth occurred in 2014, where sales jumped to $4.30 million, an impressive increase of about 36.9% compared to 2013.

Overall, total sales over the four years amounted to $12.64 million, with an average annual growth rate of 24%. The sales trend shows promising growth potential, and it's likely beneficial to explore the factors driving this growth, particularly the strategies or market conditions that contributed to the significant sales boost in 2014.

2. **Which regions or states contribute the most and least to overall sales?**

   Analysing sales by state reveals that **California** leads with the highest sales, amounting to **$0.46 million**. This indicates that California is a key market for the business, likely due to its large population, high demand for products, or strong customer base in this area. On the other end of the spectrum, **Lagos** has the lowest recorded sales, totalling **$0.02 million**.
   This contrast highlights potential opportunities for growth in underperforming markets like Lagos. It could be beneficial to investigate factors such as market conditions, distribution channels, or targeted marketing efforts that could drive increased sales in these regions. California's performance may serve as a benchmark for strategies to apply in other areas to elevate sales and market penetration.

3. **How does sales performance vary across different product categories (e.g., Furniture, Office Supplies, Technology)?**

   The analysis of sales by category shows that **Technology** leads with the highest sales, totalling **$4.74 million**. This category's performance indicates strong customer demand for tech products, possibly driven by ongoing advancements and consumer reliance on technology. Following Technology, **Furniture** generated **$4.11 million** in sales, indicating that it also holds significant value for customers, likely due to consistent demand in both corporate and home office segments.
   Office Supplies ranks third, with sales amounting to **$3.79 million**. While it has the lowest sales among the three categories, this segment still represents a vital part of the business, meeting the continuous needs of customers for everyday office essentials. This hierarchy in sales by category suggests that the business may benefit from investing further in technology offerings while exploring opportunities to boost growth in the furniture and office supplies categories.

4.What is the average order value, and how has it changed over time?

The data analysis shows that the average order quantity remains constant at **3** across all years. This consistency indicates stable purchasing behavior among customers, suggesting that while total sales may fluctuate due to variations in order frequency or customer base expansion, the number of items per order has not significantly changed.

This steady average order volume reflects a consistent demand pattern, potentially influenced by standard purchasing needs or established customer preferences within each order. It also suggests that while upselling or increasing order size could be challenging, strategies could focus on increasing order frequency or expanding the customer base to drive additional sales growth.

5.What is the total profit, and discuss trend over time?

The total profit of 1.64 million shows a steady and positive growth trend over the years. In 2011, the profit started at 248.94k, and by 2012, it increased to 307.42k, reflecting a growth of approximately 58.48k. The following year, 2013, saw an even stronger rise to 406.94k, marking an increase of about 99.52k. By 2014, the profit reached 504.17k, continuing the upward trajectory with a growth of around 97.23k. This consistent growth indicates that the company successfully expanded its operations, improved efficiency, or capitalized on market opportunities, resulting in a steady upward trend in profits over the four years.

6.How do different customer segments (e.g., corporate, home office, small business) affect overall sales and profit?

The **Corporate segment** generally brings the highest sales, followed by **Consumer** and **Home Office** segments. However, the **Home Office** segment has lower profit margins, which could be due to higher discount rates or smaller order sizes. Optimizing pricing strategies could increase profitability for the Home Office segment.

7.Which products have the highest and lowest sales?

The sales data reveals a significant disparity between subcategories, with "Phone" leading at 1.706 million in sales, and "Labels" trailing with only 0.07 million. This stark contrast highlights the dominant market demand for phones compared to the relatively low demand for labels. The higher sales of phones could be attributed to factors like consumer preference, market trends, and effective marketing strategies. In contrast, the low sales of labels might reflect limited customer interest, a niche market, or the need for improved visibility and promotion. Understanding these trends can help focus resources on high-performing subcategories while exploring ways to boost sales in lower-performing ones.

8.What is trend in returns in product category?

The **highest return rates** are observed in **the "Office Supplies"** category, while the **lowest return rates** are seen in **"Technology."** The higher return rates in office supplies could be attributed to factors such as customer dissatisfaction with product quality, incorrect ordering, or misalignment with expectations. In contrast, technology products tend to have lower return rates, possibly due to more informed purchasing decisions, better product descriptions, and higher customer satisfaction. Addressing the reasons behind returns in office supplies, such as improving product information or offering better customer support, could help reduce these rates and enhance profitability.

9.How does that returns rates change over time?

The total number of returns stands at **1,173,** with a consistent upward trend observed over the years. In **2011**, there were **209** returns, which increased to **258** in **2012**, showing a rise of 49 returns. This upward trajectory continued in **2013**, with returns reaching **317**, reflecting a growth of 59 returns. By **2014**, the number of returns further increased to **389**, marking an additional 72 returns compared to the previous year. This steady increase suggests that either customer dissatisfaction has risen, or there have been operational challenges contributing to higher return rates over the years. Analysing the root causes of these returns can help identify areas for improvement in both product offerings and customer experience.