BLINKIT SALES DASHBOARD ANALYSIS

INTRODUCTION

In the competitive grocery retail industry, using data to guide business decisions has become essential. This project focuses on creating a comprehensive Power BI dashboard for Blinkit, a grocery retailer, to give a clear overview of its sales, customer satisfaction, and inventory distribution. Through this dashboard, Blinkit can gain insights from data that span key metrics such as total and average sales, customer demographics, and item ratings, helping the company understand customer preferences and identify potential areas for improvement. The dashboard's primary purpose is to provide Blinkit's decision-makers with a tool that enables them to view and analyze key performance indicators (KPIs) across various dimensions, including product categories, store types, and geographic regions. Ultimately, the insights generated through this analysis will allow Blinkit to optimize its inventory management, adjust marketing strategies, and enhance its operational approach, helping it remain competitive in the retail landscape.

BUSINESS REQUIREMENTS

The main objective of this analysis is to conduct a thorough examination of Blinkit's sales performance, customer satisfaction, and inventory distribution to identify opportunities for improvement. Using Power BI's capabilities, the dashboard provides an in-depth view of Blinkit's operations across multiple factors. The specific goals of this project include understanding Blinkit's sales trends and levels of customer satisfaction, analyzing how inventory is distributed and how it impacts performance, and identifying potential for optimization across different products, outlet types, and locations. This thorough approach enables Blinkit to better understand its operations and to use data-driven insights to support strategic planning and decision-making.

DATA OVERVIEW

The dataset used in this analysis contains detailed information on various grocery items and Blinkit outlets. Key attributes related to grocery items include fat content, item type, visibility, weight, and sales data. Outlet-specific details include the establishment year, location type, outlet size, and type of outlet. The data was imported into Power BI from an Excel file titled "BlinkIT Grocery Data.xlsx," which allows real-time updates for accurate, consistent visualizations. By organizing and presenting this data in a structured way, Blinkit can easily track and analyze the performance of its various items and outlets to make well-informed business decisions.

DATA CLEANING AND QUALITY ASSURANCE

To ensure the accuracy and reliability of the data, it underwent a series of cleaning and validation steps. This process included handling missing values in key columns, such as filling gaps in the Item Weight column based on item type. The data types for each column were validated to ensure consistency, with year values stored as integers and sales metrics as floats. Additionally, categorical values like Fat Content and Outlet Size were standardized to maintain uniformity across visualizations, ensuring that insights derived from the dashboard are based on a reliable foundation.

DATA MODELLING AND PROCESSING

To create a well-organized analytical structure, a star schema model was implemented, consisting of fact tables for transactional data and dimension tables for item and outlet details. Establishing relationships between these tables allowed for comprehensive insights at both the item and outlet levels. Primary and foreign keys were defined to support efficient querying and smooth calculations using DAX (Data Analysis Expressions), ensuring that the data could be dynamically filtered and cross-referenced across the dashboard.

KEY METRICS AND DAX CALCULATIONS

DAX calculations were used to create essential KPIs for analyzing Blinkit's operations. These metrics include Total Sales, calculated as the sum of the Sales column; Average Sales, which represents the average sales per item; the Number of Items, obtained through a distinct count of Item Identifiers; and Average Rating, calculated as the mean rating for all items. These DAX measures enable users to interact with the data by segmenting insights based on attributes like outlet type and fat content, making it easier for decision-makers to identify key trends and performance drivers.

DASHBOARD DESIGN AND LAYOUT

The layout of the dashboard was structured with user experience in mind. Filters were positioned on the left side for easy data segmentation by item type, outlet, and year, allowing users to customize their analysis based on different criteria. The KPIs were prominently displayed at the top of the dashboard, highlighting Total Sales, Average Sales, Number of Items, and Average Rating to give users an at-a-glance view of Blinkit's performance. Main visualizations were arranged in a grid format to facilitate easy comparison and to address specific business questions.

CHARTS DEVELOPMENT AND INSIGHTS

The dashboard includes a range of visualizations that provide insights into Blinkit's core business metrics across several dimensions. For example, a Donut Chart breaks down total sales by fat content, revealing customer preferences for regular versus low-fat items, while a Bar Chart compares total sales across item types, helping the company identify its top-performing categories. A Stacked Column Chart shows how sales by fat content vary across different outlets, and a Line Chart maps the impact of outlet age on sales, illustrating trends linked to how long an outlet has been established. Further insights are provided through a Pie Chart, which examines the relationship between outlet size and sales, and a Funnel Map that shows geographic distribution of sales across different location types, offering valuable information for tailoring regional strategies. A Matrix Card is also used to summarize all key metrics by outlet type, providing a comprehensive view of Blinkit's operational performance across its network of stores.

DASHBOARD DEVELOPMENT AND KEY FINDINGS

The completed dashboard integrates all critical components with consistent formatting, a cohesive color scheme, and interactive filters that make data exploration intuitive. Slicers for year, outlet type, item type, and fat content allow for flexible analysis across multiple dimensions, supporting the extraction of valuable insights. Some key findings include:

1. **Health Trends:** Sales of low-fat items are notably higher in certain types of outlets, suggesting a growing trend toward healthier product choices.
2. **High-Performing Categories:** Product categories like "Fruits and Vegetables" consistently drive high sales, reflecting strong customer demand.
3. **Stability of Older Outlets:** Established outlets tend to have more stable, high sales, likely due to a well-established customer base.
4. **Geographic Sales Patterns:** Outlets in Tier 1 locations, which are typically high-traffic urban areas, show stronger sales, possibly due to higher purchasing power in these regions.
5. **Optimal Outlet Size:** Medium-sized outlets generate the highest sales, indicating a balance between customer capacity and overhead costs.

CONCLUSION AND RECOMMENDATIONS

This Power BI dashboard provides Blinkit with a detailed, interactive view of sales, customer satisfaction, and inventory distribution across multiple dimensions. By leveraging Power BI's visualization and data modeling tools, Blinkit can make informed decisions to improve its operations, better target customer preferences, and enhance overall business performance. Based on the findings, some recommended actions for Blinkit include:

1. **Optimize Inventory**: Increase stock levels for popular, high-demand items such as low-fat products and items in the "Fruits and Vegetables" category, particularly in locations with high sales.
2. **Targeted Marketing Efforts**: Focus marketing campaigns on high-performing products in medium-sized outlets located in Tier 1 areas to capitalize on established demand.
3. **Expansion Strategy**: Consider replicating successful elements observed in high-performing medium-sized outlets by expanding into new regions with similar characteristics to maximize potential.

The data used can be accessed from :

https://docs.google.com/spreadsheets/d/17uU305A9fpttaXYTb1eso6fsJ5jCVcsa/edit?usp=drive_link&ouid=101989979499323275028&rtpof=true&sd=true

The dashboard created can be viewed from:

https://drive.google.com/file/d/11i50RR4h838yQncn7odfxbK8-S3oGbm5/view?usp=sharing