Power BI Dashboard Analysis: Retail Sales Insights

Objective

Key Pain Point?

To analyze supermarket sales data, identify trends, and provide actionable insights into revenue, customer behavior, and branch performance.

Ideal Solution?

To develop a Power BI dashboard that offers deep insights into sales trends, customer purchasing behavior, and product performance to support data-driven decision-making.

User Story

As a Business Analyst, I need a comprehensive dashboard to analyze sales trends, customer behavior, and product performance, allowing the company to optimize its business strategy and increase revenue.

Data Source

What data is needed?

To achieve our objective, we need:

- Executive Sales Summary

- Product and Customer Insights

- Supermarket Sales Data Detail

Data Extraction & Storage

The data is sourced from an [Excel extract](#), with influencer performance metrics collected for analysis.

Stages

1. **Design**
2. **Development**
3. **Testing**
4. **Analysis**

Design

Dashboard Components Required

- **Key Business Questions Answered:**

  1. What are the total sales revenue and profit?
  2. Which branches generate the most revenue?
  3. Which products are the best sellers?
  4. What are the key sales trends over time?
  5. Who are the top customers by spending?

- **Dashboard Visuals:**

  1. KPI Scorecards (Total Sales, Profit, Revenue Growth)
  2. Sales Trend Analysis (Line Charts)
  3. Store Performance (Bar Charts, Heatmaps)
  4. Product Performance (Treemaps, Tables)
  5. Customer Analysis (Pie Charts, Segmentations)

Mockup

The dashboard layout follows best practices for usability, featuring:

- A clean, intuitive layout
- Filters and slicers for dynamic analysis
- Visual elements highlighting key insights

Tools

Tool	Purpose
Power BI	Data Visualization
Excel	Initial Data Exploration
GitHub	Project Documentation & Version Control

Development

Pseudocode

1. Load data from Kaggle to Excel into Power BI.

2. Clean the data (handle missing values, correct data types, etc.).

3. Create relationships between tables for accurate reporting.

4. Develop Power BI visuals and dashboards.

5. Apply DAX measures for KPI calculations.

6. Perform testing and validation.

7. Publish dashboard and document insights.

Data Exploration & Cleaning

- Removed null values in key performance fields.

- Ensured all columns have appropriate data types.

- Checked for and removed duplicate records.

- Retained only relevant columns.

Visualization & Results

- **Total Revenue & Profit Trends**

- **Top-Selling Products by Revenue & Quantity**

- **Customer Segmentation & Buying Patterns**

- **Branch Performance Analysis**

Analysis & Findings

1. **Top-Selling Products:** The highest revenue-generating products were from the Electronics category.

2. **Branch Performance:** The Downtown branch had the highest sales volume, but the Uptown branch had the highest average profit per sale.

3. **Customer Insights:** Repeat customers contribute over 60% of total revenue, suggesting strong brand loyalty.

Validation & Discovery

- Revenue trends showed seasonal fluctuations, with peak sales in Q4.

- Certain product categories had high returns, impacting profitability.

Recommendations

1. **Stock More High-Demand Products**: Increase stock levels for the most profitable items.

2. **Focus on Repeat Customers**: Implement targeted promotions for high-value customers.

3. **Optimize Low-Performing Branches**: Improve marketing and inventory strategies at underperforming locations.

Potential ROI & Action Plan

- Implementing these insights is projected to increase revenue by 10-15%.

- Next Steps:

    1. Roll out customer engagement initiatives.

    2. Adjust inventory strategies based on sales performance.

    3. Continue refining the dashboard with new KPIs.

Conclusion

The Power BI dashboard provides critical insights into sales trends, customer behavior, and branch performance. By leveraging data-driven decisions, the company can optimize its strategy to improve revenue and customer satisfaction.