Sales Performance Analysis of Maven Roasters

1. Project Overview

This analysis focuses on **Maven Roasters**, a well-established coffee shop franchise with multiple locations in New York City. The franchise owner sought to gain a deeper understanding of customer purchasing behaviors across **three key locations: Lower Manhattan, Hell's Kitchen, and Astoria**. By analyzing transactional data, the objective was to identify operational inefficiencies, revenue trends, and areas for business improvement.

To achieve this, data was gathered from **January to June 2023**, capturing six months of sales transactions. The analysis aimed to uncover key insights that would help streamline operations, optimize inventory management, and enhance customer experience across all locations.

The primary outcome of this project was the development of a **dynamic Power BI dashboard**, providing an interactive platform for the franchise owner to monitor sales patterns, assess product performance, and make data-driven business decisions. This tool enables real-time insights into revenue trends, peak purchasing periods, and the effectiveness of different product categories, ultimately supporting strategic planning and business growth.

2. Dataset Overview

The dataset utilized in this analysis, sourced from Maven Analytics, consists of **149,116 transaction records** spanning across **three key store locations**: Lower Manhattan, Hell's Kitchen, and Astoria. It includes **11 columns** categorized into four data types:

- **Integer:** transaction_id, transaction_qty, store_id, product_id

- **Float:** unit_price

- **Date & Time:** transaction_date, transaction_time

- **Text:** store_location, product_category, product_type, product_detail

Key Analytical Objectives

The primary objectives of this analysis are:

1. **Develop a Sales Overview** – Understand the overall revenue and sales distribution.

2. **Analyze Monthly Sales Trends** – Examine patterns in sales growth and fluctuations.

3. **Identify Customer Purchasing Behaviors** – Investigate peak sales periods and product performance.

4. **Provide Business Recommendations** – Offer insights to optimize business operations and profitability.

3. Analysis Process

Step 1: Data Preparation & Cleaning

To ensure data consistency and accuracy, the raw dataset was pre-processed using **Power BI's Power Query**. Key data-cleaning steps included:

- Standardizing product names and categories.

- Resolving missing values and correcting inconsistencies.

- Creating a **Date Table** to enable time-based filtering.

These enhancements facilitated efficient data exploration and visualization.

Step 2: Data Modeling

A structured **relational data model** was developed to optimize analysis. The following relationships were established:

- The Transactions Table was linked to the Date Table via transaction_date, allowing seamless time-based analysis.

This modeling approach ensured the efficient retrieval of insights and enhanced analytical accuracy.

Step 3: Data Analysis

Overall Sales Performance

- Over a six-month period, **total revenue amounted to $698,812**, with **214,470 units sold** across all locations.

- **Hell's Kitchen contributed the highest revenue share (33.84%)**, followed closely by Lower Manhattan (33.45%).

- The **average monthly sales stood at $116,000**, demonstrating consistent growth.

- The top three best-selling product categories were:

  - **Coffee ($270K revenue, 38.6% share)**

  - **Tea ($196K revenue, 28% share)**

  - **Bakery items ($82K revenue, 11.7% share)**

Monthly Sales Trends

- Sales exhibited a **steady upward trajectory**, culminating in a peak of **$166K in June**, reflecting a **6.32% increase from May**.

- Notable growth rates:

  - **April sales grew by 20.34% compared to March.**

- o **May saw a 31.28% increase in sales volume over April**.

- o **Transactions and quantity sold followed a similar upward pattern**.

- Although **Coffee remained the highest-selling category**, the **Branded Clothing & Homeware** segment witnessed the most substantial **growth rate (+33.48%)** compared to previous months.

Customer Purchasing Patterns

- Peak shopping hours were observed **between 7:00 AM – 11:00 AM**, accounting for the majority of daily transactions across all three store locations.

- The busiest days for transactions were **Mondays, Tuesdays, and Fridays**, suggesting these could be optimal days for promotions and targeted marketing campaigns.

- The **top 5 products contributed to over 30% of revenue growth**, while the **bottom 5 products showed significantly lower contribution to overall sales**.

Step 4: Data Visualization

An **interactive Power BI dashboard** was developed to facilitate easy interpretation of key insights. The dashboard featured:

- **KPI indicators** for sales performance monitoring.

- **Trend charts** illustrating monthly sales fluctuations.

- **Pie charts** breaking down revenue contribution by store location.

- **Bar charts** detailing product category performance.

- **Time-series analyses** for sales forecasting and pattern recognition.

4. Business Recommendations

1. Optimize Inventory & Promotional Strategies for High-Performing Categories

- Given that **Coffee ($270K) and Tea ($196K) drive 67% of total sales**, inventory should be optimized to prevent stockouts.

- Implement **bundle promotions (e.g., "Buy 2, Get 1 Free")** and **loyalty rewards** to enhance customer retention and repeat purchases.

2. Expand Operations at Hell's Kitchen

- **Hell's Kitchen generates the highest revenue (33.84%)**, suggesting a high footfall and customer engagement.

- Consider extending operating hours, expanding store space, or increasing staffing levels to cater to the rising demand.

- Leverage **localized marketing strategies** (e.g., targeted online ads, loyalty discounts) to capitalize on existing customer interest.

3. Diversify Product Offerings in the Branded Category

- The **Branded Clothing & Homeware category saw the highest growth (+33.48%)**, indicating a growing demand for these products.

- Expand the product line by introducing **seasonal collections, limited-edition items, and custom designs**.

- Partner with **local artists and designers** to create exclusive product lines that appeal to niche audiences.

4. Implement Dynamic Pricing & Upselling Techniques

- Given the **consistent month-over-month growth in Coffee, Tea, and Bakery sales**, test dynamic pricing strategies such as:

  - Time-based discounts (e.g., morning vs. evening pricing).

  - Demand-driven pricing during peak hours.

  - Special bundle pricing for bulk purchases.

- Train staff to **suggest complementary products** (e.g., recommending a pastry with a coffee order) to increase **average transaction value**.

5. Improve Service Efficiency During Peak Hours

- With **7 AM – 11 AM being the busiest period**, long queues and waiting times could impact customer satisfaction.

- Implement **mobile ordering, express pickup counters, or pre-order discounts** to streamline service and reduce congestion.

6. Reposition Low-Performing Products

- The **bottom 5 products contributed minimal revenue**, requiring a reassessment of their market viability.

- Consider strategies such as **discounting, rebranding, or discontinuing underperforming items**.

- Alternatively, bundle slow-selling products with best-sellers to increase their visibility and demand.

5. Conclusion

This analysis provides valuable insights into **Maven Roasters' sales performance, customer behavior, and product trends**. By leveraging **data-driven strategies** such as **inventory optimization, targeted marketing, and dynamic pricing**, the business can maximize revenue, improve operational efficiency, and sustain long-term growth.

By implementing these recommendations, Maven Roasters can enhance customer satisfaction, boost sales performance, and strengthen its competitive advantage in the market.