Coffee Shop Sales Analysis - Business Intelligence Case Study

Project Overview

This case study showcases how Excel was used to transform raw transactional data from a coffee shop chain into a clear and actionable dashboard. The objective was to support business decisions related to operations, sales optimization, and customer behavior through data-driven insights.

Problem Statement

A multi-location coffee shop chain approached us with the following challenges:

1. What are the peak business hours?

-> Answer:

Most orders occur between 8 AM and 11 AM, peaking at 9 AM and 10 AM with over 27,000 orders per hour. This indicates a strong morning rush, likely from office-going customers.

2. Which product categories contribute most to sales?

-> Answer:

The Coffee category dominates, accounting for 39% of total sales, followed by Tea (28%) and Drinking Chocolate (12%). This shows hot beverages are the primary revenue drivers.

3. Which store locations have the highest performance?

-> Answer:

- Astoria has the highest footfall (50,699) and leads with $232,249 in sales.

- Hell's Kitchen closely follows with $236,511 in sales and 50,735 footfall.

- Lower Manhattan shows relatively lower activity with 47,782 footfall and $230,057 in sales.

Astoria and Hell's Kitchen should be prioritized for inventory and promotions.

4. What are the ordering patterns based on size and day?

-> Answer (Size Distribution):

- Regular and Large size drinks are nearly equally popular at 31% and 30% respectively.

- 30% of orders are tagged as "Not Defined," indicating possible data quality issues.

-> Answer (Day Distribution):

- Friday sees the highest sales with 21,701 orders, followed by Saturday and Wednesday.

- Sunday has the lowest with 20,965 orders, possibly due to reduced weekday footfall or shorter hours.

5. How can we identify our best-performing products?

-> Answer:

Top products by sales value:

- Barista Espresso: $91,406

- Hot Chocolate: $72,416

- Brewed Chai Tea: $77,081

- Gourmet Brewed Coffee: $70,034

Focusing marketing and combo offers on these products can increase sales efficiency.

Solution

I built a single-screen, interactive dashboard in Microsoft Excel using:

- Pivot Tables for flexible aggregation

- Slicers for Month and Day filters

- Dynamic charts (line, pie, bar) to visualize time, category, and location data

- Clear KPIs at the top: Total Sales, Footfall, Avg. Bill, Avg. Orders

 Impact

- Provided the business with real-time visibility into operational patterns.

- Enabled targeted marketing campaigns based on product and time preferences.

- Reduced manual reporting time by 70%.

- Encouraged data-driven decisions around staffing, inventory, and product offerings.