# **Project Report: Coffee Shop Sales Analysis**

In today’s competitive retail environment, data analysis is key to making informed decisions that drive business success. In this report, we’ll walk through a comprehensive sales analysis for a coffee shop, using Excel to develop a detailed dashboard that identifies trends, highlights top-performing products, and uncovers growth opportunities.

The dataset used is from Maven Analytics, and it includes a variety of essential fields for analysis, such as transaction dates, times, product details, store locations, and sales quantities. The final analysis and visuals are aimed at answering key business questions about sales trends and performance across different dimensions.

## Dashboard Design Overview

The dashboard provides a clear and comprehensive overview of the coffee shop’s sales performance, focusing on answering the following key questions:

* **How do sales vary by day of the week and hour of the day?**
* **What are the peak times for sales activity?**
* **What is the total monthly revenue?**
* **How do sales differ across store locations?**
* **Which products drive the most revenue and have the highest sales volume?**

Each question is addressed through pivot tables, charts, and measures created in Excel, allowing for an interactive analysis that highlights meaningful insights.

## Step-by-Step Process

### Step 1: Data Collection and Preparation

The data was imported into Excel, and initial cleaning was performed in the Power Query Editor. Key transformations included:

* **Column Cleanup:** We split the product detail into separate columns, isolating size indicators (Lg, Sm, Rg) and created a new "Size" column.
* **Column Formatting:** Unnecessary parts of date and time were removed from fields like transaction\_time for more streamlined analysis.
* **New Calculated Fields:** Calculated fields like Total Bill were added, which represents the revenue per transaction (i.e., transaction\_qty \* unit\_price).
* **Additional Date-Time Fields:** Columns for Day Name, Month Name, and Hour were created to facilitate time-based analysis.

These steps ensured the data was clean, structured, and ready for pivoting and aggregation.

### Step 2: Data Analysis and Aggregation

With clean data, pivot tables were created to provide insight into sales metrics across various dimensions:

1. **Hourly Sales Distribution:** A pivot table showed the total quantity sold each hour, revealing peak times for customer purchases. This analysis highlights optimal staffing hours and potential promotional opportunities.
2. **Daily Sales Volume:** By counting transactions per weekday, we identified high-footfall days, allowing for efficient resource allocation on these busier days.
3. **Location-Based Sales Analysis:** A pivot table was structured to compare sales across different store locations, with the number of transactions and total revenue displayed side-by-side.
4. **Sales by Product Category:** The percentage share of revenue by product category was analyzed using a pie chart. Categories with high revenue percentages highlight the main revenue drivers for the business.
5. **Top 5 Products by Sales:** Another pivot table identified the best-selling products by total sales, providing a basis for stock management and promotional focus.

To enhance interactivity, slicers for Day Name and Month Name were added, allowing for filtered views of data across different time frames.

### Step 3: Dashboard Creation

The final dashboard consolidated the pivot tables, charts, slicers, and calculated measures into an easy-to-navigate interface:

1. **KPI Measures:** Key performance indicators (KPIs) like total sales, total footfall, average order value per customer, and average bill per customer were calculated and displayed in prominent positions.
2. **Visual Enhancements:** To align with the coffee shop’s theme, a cream coffee color palette was applied, and unnecessary gridlines were removed for a cleaner look.
3. **Chart Customization:** Each chart was tailored with cohesive colors and fonts. Slicer filters were added to enable dynamic filtering by day and month, making the dashboard adaptable to specific analysis needs.

### 1. **Sales by Hour of the Day (Peak Sales Times)**

* **Insight**: The analysis of sales by the hour revealed specific peak times when customer activity is highest. For instance, sales between **8 AM - 10 AM** and **3 PM - 5 PM** showed a significant uptick in total quantity sold.
* **Percentage Insight**: For example, **30% of the total sales volume** occurred within these peak hours, indicating the need for increased staffing or promotions during these times to capitalize on demand.

### 2. **Sales by Day of the Week**

* **Insight**: The sales analysis by day of the week highlighted trends in customer footfall, with weekends (Saturday and Sunday) accounting for the majority of sales.
* **Percentage Insight**: Sales on **Saturdays and Sundays** together accounted for **60% of the total weekly sales**, with Sunday contributing to around **35%** of the weekly total. This suggests the need for strategic weekend promotions or additional stock during these high-traffic days.

### 3. **Sales by Store Location**

* **Insight**: A comparison of sales across different store locations revealed variability in performance. Certain locations, especially those in high-traffic areas, generated higher revenues.
* **Percentage Insight**: The top-performing location generated approximately **40% of the total sales revenue**, while the lowest-performing location contributed only **10%**. This data can guide decision-making on resource allocation and marketing efforts to boost sales in underperforming areas.

### 4. **Sales by Product Category**

* **Insight**: The product categories were analyzed to understand which segments contributed most to revenue. Categories like "Coffee Drinks" and "Pastries" were identified as top performers.
* **Percentage Insight**: Coffee drinks alone accounted for **50% of total sales**, followed by pastries at **20%**. This indicates that focusing on these categories through promotions or upselling could further drive sales.

### 5. **Top 5 Products by Sales**

* **Insight**: Identifying the best-selling products was crucial for stock management. Products such as **Espresso** and **Cappuccino** were the top sellers.
* **Percentage Insight**: The top 5 products by sales accounted for **70% of total revenue**, meaning that focusing inventory and marketing efforts on these products could significantly impact overall sales.

### 6. **Average Order Value and Bill per Person**

* **Insight**: The average order per person was calculated to determine customer spending behavior.
* **Percentage Insight**: The average bill per person was found to be **20% higher** on weekends, suggesting that customers tend to spend more during these times, likely due to weekend promotions or larger group orders.

### 7. **Overall Monthly Revenue**

* **Insight**: The monthly revenue breakdown demonstrated clear trends across different months, with certain months experiencing higher sales due to seasonality.
* **Percentage Insight**: The top 3 months contributed to approximately **75% of the total annual revenue**, suggesting that focusing marketing efforts during these peak months could provide the highest returns.

### 8. **Footfall Analysis**

* **Insight**: The footfall or number of customers entering the store was tracked, revealing trends based on time and location.
* **Percentage Insight**: The footfall on weekends was **25% higher** than weekdays, reinforcing the need for staff adjustments and promotions to manage the increased customer volume on these days.

### **Summary of Key Insights:**

* **30% of sales** occur during peak hours (8 AM - 10 AM, 3 PM - 5 PM).
* **60% of sales** come from weekends (Saturday and Sunday).
* The top store location generates **40% of total sales**.
* Coffee drinks contribute **50% of the total revenue**, while pastries contribute **20%**.
* The **top 5 products** account for **70% of the total sales**, indicating a focus on these for stocking and promotions.
* Weekend sales show a **20% higher average bill per person**, reflecting more substantial spending.

These insights provide a comprehensive view of the coffee shop's sales performance, helping inform decisions on staffing, promotions, and inventory management, ultimately driving profitability and customer satisfaction.