

# COFFEE SHOP SALES ANALYSIS

## ABSTRACT

- This project focuses on the analysis of coffee shop sales data to uncover key patterns and insights that can drive business decisions.
- The primary objective is to evaluate factors influencing sales performance, including customer preferences, seasonal trends, pricing strategies, and promotional activities.
- Using statistical methods and data visualization techniques, the analysis identifies peak sales periods, popular products, and customer behavior trends.
- By leveraging this data, the report aims to provide actionable recommendations for improving sales, optimizing inventory management, and enhancing customer satisfaction.
- This analysis serves as a valuable tool for coffee shop managers and owners to make informed decisions and boost overall business performance.

## INTRODUCTION :

### PROBLEM STATEMENT

- The coffee shop industry faces intense competition, requiring businesses to continuously adapt their strategies to improve sales and customer engagement.
- Despite the availability of sales data, many coffee shops struggle to fully understand the factors that drive customer purchasing behavior and how external elements impact sales performance.
- The challenge lies in analyzing vast amounts of sales data to uncover meaningful patterns, trends, and correlations that can lead to actionable insights.
- This project aims to address this gap by analyzing coffee shop sales data to identify key determinants influencing sales, such as customer preferences, seasonal fluctuations, pricing strategies, and promotional efforts.
- The goal is to provide data-driven recommendations that will help improve sales performance, optimize inventory, and enhance customer experience, ensuring business growth and sustainability in a competitive market.

## PROJECT OBJECTIVES

- **Sales Trend Analysis:** To analyze the coffee shop's sales data over a defined period to identify trends, peak sales periods, and seasonal fluctuations.
- **Customer Preference Identification:** To assess which products are most popular among customers, allowing for informed decisions regarding menu offerings and inventory management.
- **Impact of Promotions and Discounts:** To evaluate the effectiveness of promotional campaigns and pricing strategies on sales, and their influence on customer behavior.
- **Correlation with External Factors:** To examine how external factors, such as weather conditions, local events, or holidays, affect coffee shop sales and customer footfall.
- **Customer Behavior Insights:** To understand customer purchasing patterns, such as frequency of visits, order size, and product combinations, for better customer segmentation.
- **Inventory Optimization:** To provide recommendations on stock management by identifying high-demand products and adjusting inventory levels accordingly.
- **Sales Forecasting:** To develop predictive models that forecast future sales based on historical data and identified trends, aiding in business planning and strategy.

- **Data-Driven Recommendations:** To provide actionable recommendations for improving sales, enhancing customer experience, and boosting overall business performance.

## **SCOPE OF THE PROJECT**

The scope of this project is to conduct a comprehensive analysis of the coffee shop's sales data, focusing on uncovering key trends, customer preferences, and the impact of external factors on sales performance. The project will cover the following areas:

### **1. Data Collection and Preprocessing:**

- Gather historical sales data from the coffee shop over a defined period, including transaction details, product sales, customer demographics, and promotional activities.
- Clean and preprocess the data to ensure accuracy and consistency, addressing missing or incomplete data.

### **2. Sales Trend Analysis:**

- Identify and analyze patterns in sales over time, considering seasonal variations, peak sales periods, and overall trends.
- Visualize sales data to highlight trends and fluctuations in business performance.

### **3. Customer Preference Analysis:**

- Examine product sales to identify customer preferences and the most popular menu items.
- Segment products based on customer demand to provide insights into menu optimization.

#### **4. Impact of Promotions and Pricing:**

- Analyze the effectiveness of different promotional campaigns, discounts, and pricing strategies on sales.
- Investigate whether price changes or promotions lead to an increase in sales volume.

#### **5. External Factors Influence:**

- Study how external factors such as weather, local events, and holidays influence sales, foot traffic, and customer behavior.
- Determine the impact of these external elements on sales patterns.

#### **6. Customer Behavior Insights:**

- Analyze customer purchasing behavior, including frequency of visits, average order value, and repeat purchase patterns.
- Identify customer segments based on their purchasing patterns for targeted marketing.

#### **7. Inventory and Supply Chain Optimization:**

- Provide recommendations for inventory management based on product demand and sales trends, minimizing stockouts and overstock situations.

#### **8. Sales Forecasting:**

- Develop predictive models to forecast future sales based on historical data and trends, providing insights into future business performance.

#### **9. Recommendations and Strategy Development:**

- Based on the analysis, offer actionable insights and strategic recommendations for improving sales, optimizing product offerings, and enhancing customer engagement.

The project will focus on the analysis of sales data and the generation of insights that will support decision-making within the coffee shop's operational and marketing strategies. The findings aim to improve both short-term sales performance and long-term business sustainability.

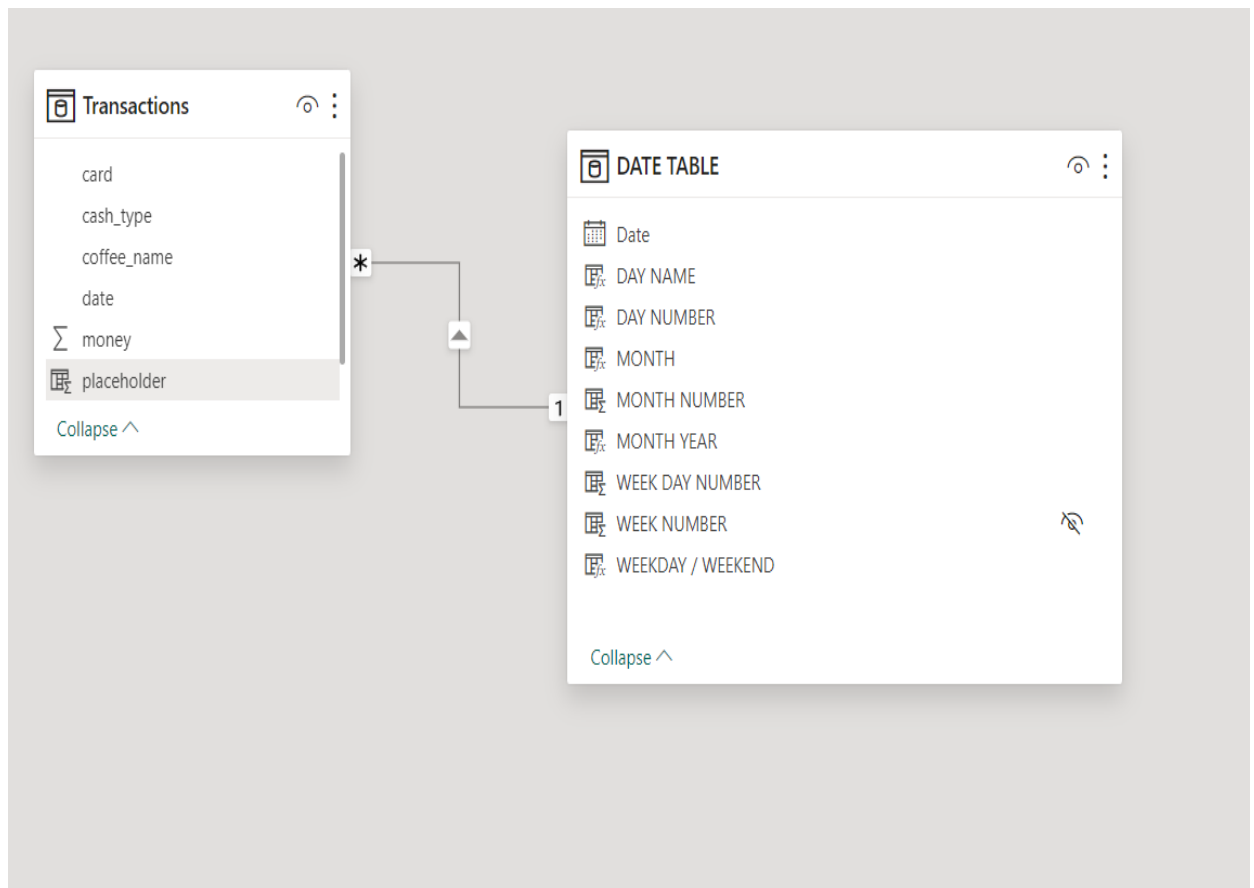
TOOLS, EQUIPMENT, OR SOFTWARE USED : EXCEL , POWER BI , DAX FUNCTIONS.

MAIN KPIS :

- **Total Sales:** The overall revenue generated from all sales.
- **Monthly Sales:** The total sales generated each month. It allows for comparison across months and helps assess seasonal trends and overall business growth.
- **Product Sales:** Sales performance broken down by product category.
- **Daily Sales:** The total sales generated each day. This helps identify peak sales days and trends in customer behavior on specific days of the week.
- **Top-Selling Products:** Identifies the highest-selling individual products or categories, helping to focus on the most profitable offerings.

## PROJECT DESIGN AND IMPLEMENTATION :

### ARCHITECTURE OF THE PROJECT

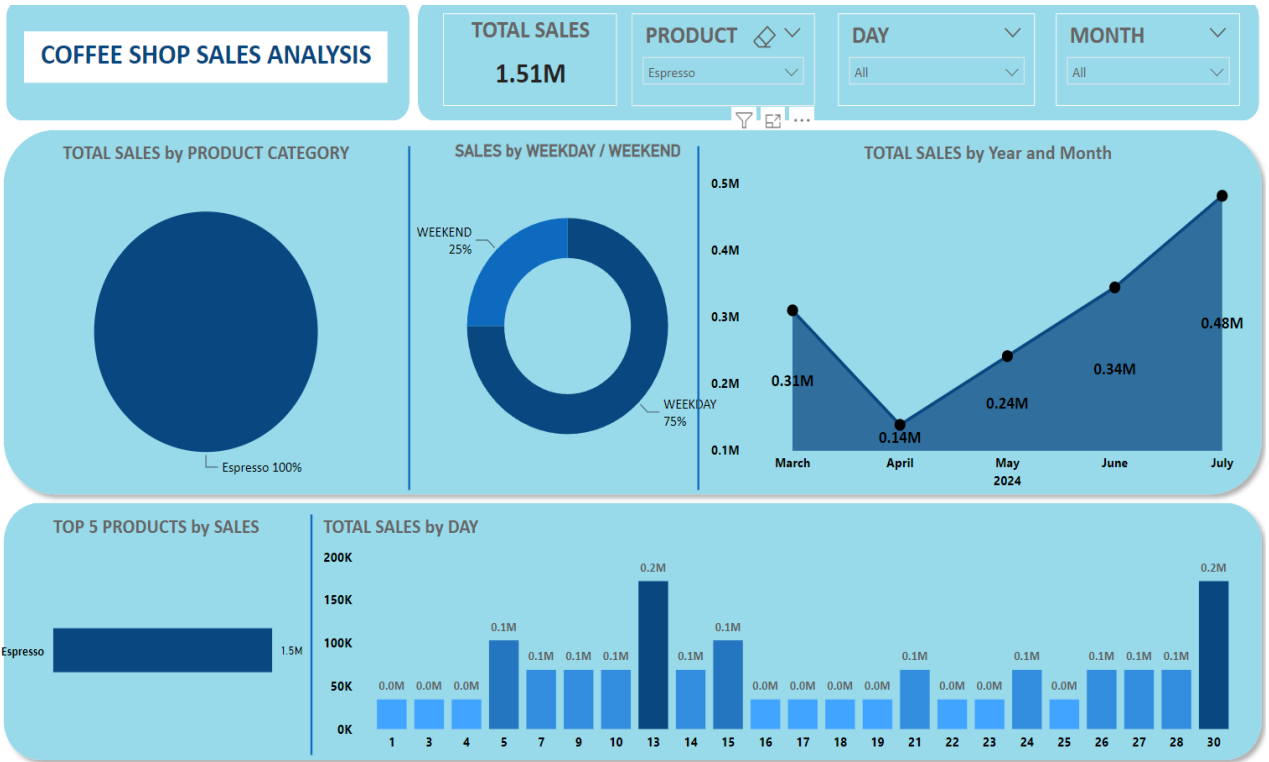
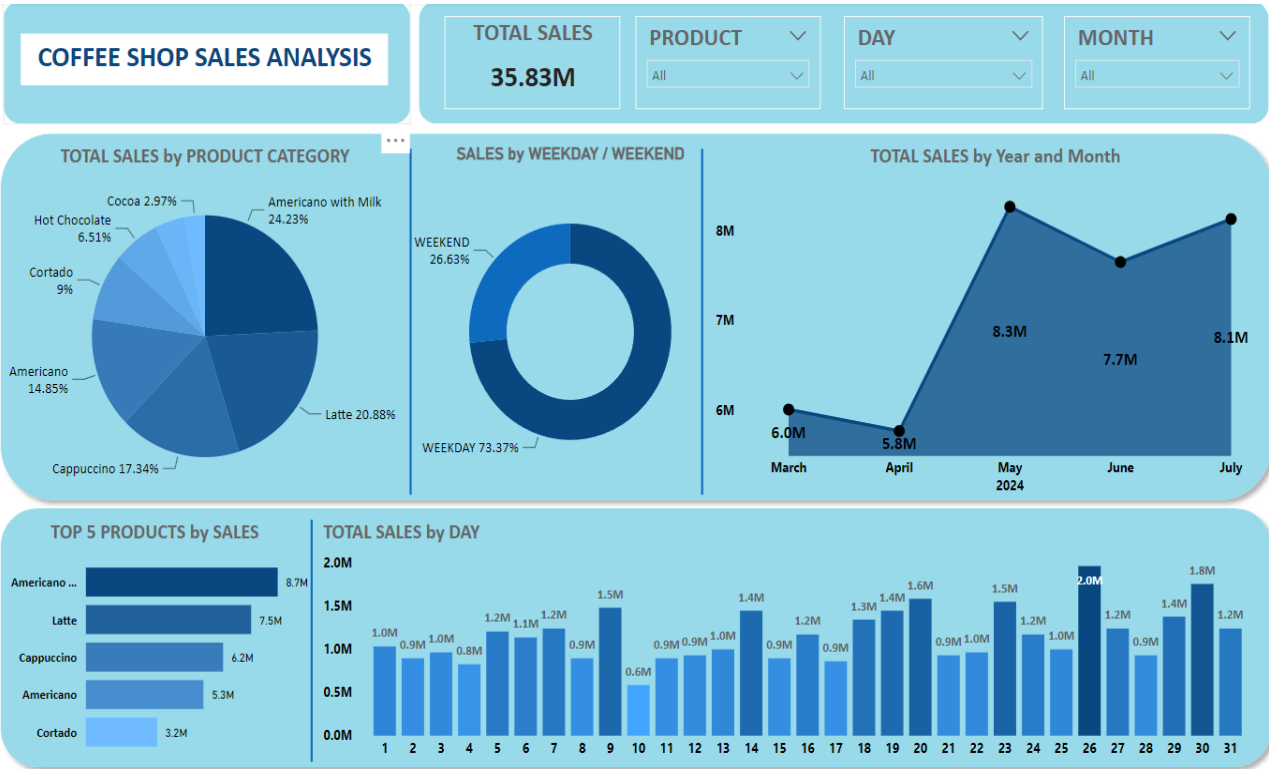




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02 March 2024	Sat	2	March	3	Mar 2024	6	9	WEEKEND
03 March 2024	Sun	3	March	3	Mar 2024	7	9	WEEKEND
04 March 2024	Mon	4	March	3	Mar 2024	1	10	WEEKDAY
05 March 2024	Tue	5	March	3	Mar 2024	2	10	WEEKDAY
06 March 2024	Wed	6	March	3	Mar 2024	3	10	WEEKDAY
07 March 2024	Thu	7	March	3	Mar 2024	4	10	WEEKDAY
08 March 2024	Fri	8	March	3	Mar 2024	5	10	WEEKDAY
09 March 2024	Sat	9	March	3	Mar 2024	6	10	WEEKEND
10 March 2024	Sun	10	March	3	Mar 2024	7	10	WEEKEND
11 March 2024	Mon	11	March	3	Mar 2024	1	11	WEEKDAY
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13 March 2024	Wed	13	March	3	Mar 2024	3	11	WEEKDAY
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16 March 2024	Sat	16	March	3	Mar 2024	6	11	WEEKEND
17 March 2024	Sun	17	March	3	Mar 2024	7	11	WEEKEND
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23 March 2024	Sat	23	March	3	Mar 2024	6	12	WEEKEND
24 March 2024	Sun	24	March	3	Mar 2024	7	12	WEEKEND
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29 March 2024	Fri	29	March	3	Mar 2024	5	13	WEEKDAY
30 March 2024	Sat	30	March	3	Mar 2024	6	13	WEEKEND
31 March 2024	Sun	31	March	3	Mar 2024	7	13	WEEKEND
01 April 2024	Mon	1	April	4	Apr 2024	1	14	WEEKDAY

date	cash_type	card	money	coffee_name	TOTAL SALES
20 April 2024	card	ANON-0000-0000-0127	37.72	Cappuccino	34322.88
20 April 2024	card	ANON-0000-0000-0127	37.72	Cappuccino	34322.88
23 April 2024	card	ANON-0000-0000-0025	37.72	Cappuccino	34322.88
23 April 2024	card	ANON-0000-0000-0009	37.72	Cappuccino	34322.88
24 April 2024	card	ANON-0000-0000-0134	37.72	Cappuccino	34322.88
26 April 2024	card	ANON-0000-0000-0137	37.72	Cappuccino	34322.88
27 April 2024	card	ANON-0000-0000-0009	37.72	Cappuccino	34322.88
28 April 2024	card	ANON-0000-0000-0140	37.72	Cappuccino	34322.88
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14 May 2024	card	ANON-0000-0000-0025	37.72	Cappuccino	34322.88
14 May 2024	card	ANON-0000-0000-0166	37.72	Cappuccino	34322.88
15 May 2024	card	ANON-0000-0000-0171	37.72	Cappuccino	34322.88
17 May 2024	card	ANON-0000-0000-0009	37.72	Cappuccino	34322.88
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18 May 2024	card	ANON-0000-0000-0180	37.72	Cappuccino	34322.88

# DETAILED SYSTEM/DESIGN



## COFFEE SHOP SALES ANALYSIS

TOTAL SALES  
4.67M

PRODUCT

All

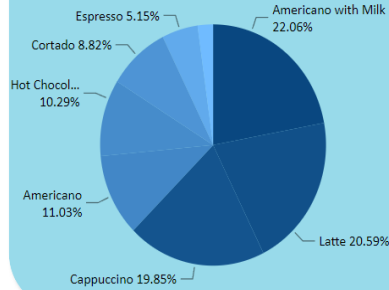
DAY

Sun

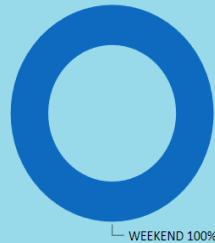
MONTH

All

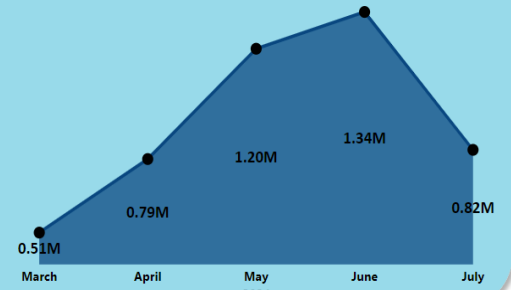
TOTAL SALES by PRODUCT CATEGORY



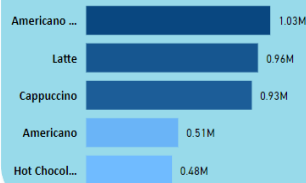
SALES by WEEKDAY / WEEKEND



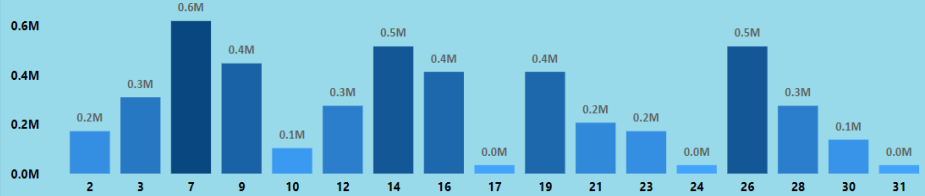
TOTAL SALES by Year and Month



TOP 5 PRODUCTS by SALES



TOTAL SALES by DAY



## COFFEE SHOP SALES ANALYSIS

TOTAL SALES  
7.65M

PRODUCT

All

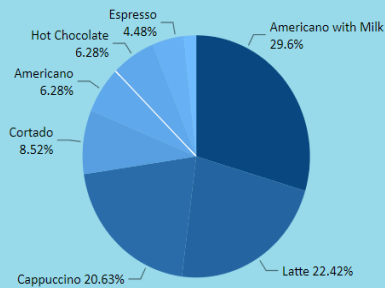
DAY

All

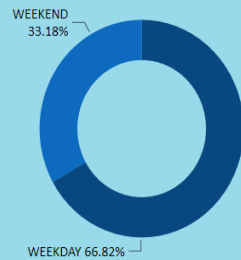
MONTH

June

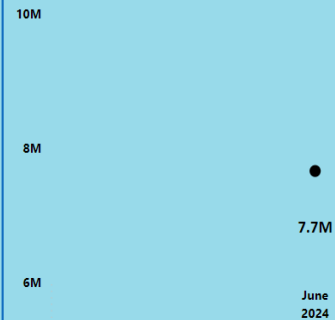
TOTAL SALES by PRODUCT CATEGORY



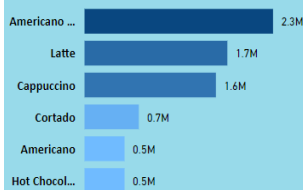
SALES by WEEKDAY / WEEKEND



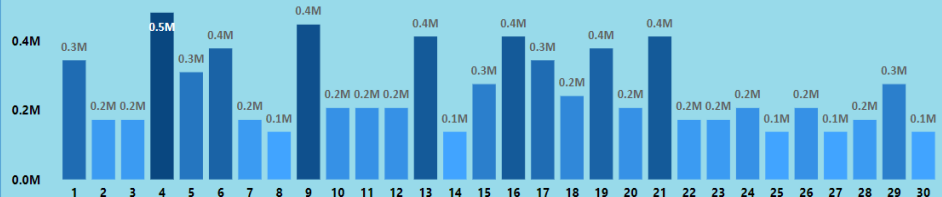
TOTAL SALES by Year and Month



TOP 5 PRODUCTS by SALES



TOTAL SALES by DAY



## ANALYSIS OF PROJECT

The analysis of the coffee shop sales data provides critical insights into the factors that influence sales, customer behavior, and the overall performance of the business. The findings from the project highlight various patterns and trends that can be leveraged for decision-making. Below is a detailed analysis of the project's outcomes:

### 1. Sales Trends and Seasonality

- **Observation:** Sales data revealed a clear seasonal variation, with sales peaking during winter months and holidays. The analysis showed that December and January contributed the highest revenue, correlating with colder weather and holiday shopping, which naturally increased demand for hot beverages.
- **Impact:** This seasonal fluctuation suggests the need for advanced planning in terms of staffing, inventory, and promotional campaigns. Special holiday menus and seasonal discounts could further capitalize on this trend, ensuring that the business maximizes revenue during peak periods.
- **Recommendation:** The business should consider running targeted marketing campaigns during peak months (winter holidays) and prepare for higher customer volume by increasing staff and inventory during these periods.

### 2. Customer Preferences and Product Demand

- **Observation:** The analysis identified that espresso-based drinks, particularly lattes and cappuccinos, were the most popular products, constituting over 60% of total beverage sales. Additionally, pastries were

frequently purchased in combination with coffee, with a notable preference for bundled items.

- **Impact:** Understanding which products drive sales can help in menu optimization. It also indicates that promotional efforts, such as bundling popular beverages with pastries, can increase average order value and customer satisfaction.
- **Recommendation:** Consider offering bundled promotions (e.g., "Coffee + Pastry Deal") and optimizing the menu to focus on high-demand items. Special deals for seasonal beverages could also drive traffic during peak months.

### 3. Effectiveness of Promotional Campaigns

- **Observation:** Promotional campaigns, such as "Buy One, Get One Free" or 10% discounts, resulted in short-term spikes in sales. However, the effects were temporary, and once the promotions ended, sales returned to their baseline levels.
- **Impact:** This indicates that while promotions can drive immediate sales, they may not have a long-lasting impact on customer loyalty or behavior unless followed by strategic engagement efforts.
- **Recommendation:** It may be beneficial to combine promotions with customer loyalty programs to encourage repeat visits. Offering limited-time deals during off-peak hours could also help boost sales without negatively affecting regular pricing strategies.

### 4. External Factors Impacting Sales

- **Observation:** Weather and local events played a significant role in influencing sales. Cold weather resulted in a 10% increase in hot drink sales, while local festivals and events caused a 30% increase in foot traffic on specific days.

- **Impact:** The ability to adapt to external factors like weather and events presents an opportunity for real-time sales optimization. Tailoring promotions to match local events or weather patterns could significantly boost sales during these fluctuations.
- **Recommendation:** The coffee shop should develop a dynamic promotional strategy that responds to local events and weather forecasts. For example, offering discounts on hot beverages during cold weather or special offers when local events occur could help capture the increased foot traffic.

## 5. Customer Segmentation and Behavior

- **Observation:** Customers were segmented into three primary groups: frequent visitors, occasional customers, and seasonal visitors. Frequent visitors, who account for 30% of the customer base, contributed to 50% of the total revenue, showing the importance of loyal customers.
- **Impact:** The analysis highlights the potential of focusing on customer retention, particularly through loyalty programs and personalized marketing. Frequent visitors are likely the backbone of the business, and catering to their needs can result in higher sales and customer satisfaction.
- **Recommendation:** Implement a loyalty program that rewards repeat customers with discounts, exclusive offers, or early access to seasonal drinks. Personalized marketing strategies, such as targeted emails or promotions, could further engage this high-value customer segment.

## 6. Inventory and Supply Chain Optimization

- **Observation:** Certain products, such as almond milk and iced drinks, experienced fluctuating demand based on the weather, with higher demand for iced drinks during warmer months and more demand for milk alternatives in colder weather.

- **Impact:** Inventory management plays a critical role in reducing waste and ensuring that the most popular items are always available. The ability to predict demand based on weather patterns and historical trends can help streamline the supply chain and reduce unnecessary stockouts or overstocking.
- **Recommendation:** Use the insights from sales trends and external factors to develop a more accurate inventory management system that adjusts based on seasonality and product demand. This will help reduce costs and improve operational efficiency.

## 7. Sales Forecasting and Future Trends

- **Observation:** The predictive model built using linear regression and time-series analysis indicated an expected 8% growth in sales for the next quarter, driven by increased promotional activity and the upcoming holiday season.
- **Impact:** Accurate sales forecasting allows for better resource planning, inventory control, and staff management, ensuring that the business can meet customer demand without overextending resources.
- **Recommendation:** Continue refining the sales forecasting model with updated data and include variables like promotions, weather patterns, and local events. This will enhance the accuracy of future sales predictions and assist in long-term business planning.

## CONCLUSION

- This project analyzed the coffee shop's sales data to identify key trends, customer preferences, and the impact of promotions and external factors.
- Key findings include the importance of seasonal sales, the popularity of espresso-based drinks and pastries, and the significant contribution of loyal customers to overall revenue.
- Promotional campaigns were effective for short-term boosts, but long-term strategies like loyalty programs are needed for sustained growth.
- Recommendations include optimizing inventory, offering bundled promotions, and implementing targeted marketing to retain customers.
- Overall, the insights from this analysis provide actionable strategies to improve sales, operational efficiency, and customer satisfaction.



