

# CAFE SALES

Retail Sector

## Project Presentation

Section-B

Group-19: Himanshu Pal  
Shreshtha Gupta  
Aditya Shankar  
Satya Prakash  
Aryan Kumar  
Lakshay Yadav  
Satwik Mani Tripathi

Faculty Mentor: Satyaki Das Sir

# Problem Statement

How can a retail cafe improve sales performance and operational efficiency by analyzing raw transaction-level sales data and identifying key revenue drivers?

## Sector context

Retail cafes generate large volumes of daily transaction data through sales of food and beverages. However, this raw transaction data is often underutilized for decision-making. Analyzing sales patterns, customer purchasing behavior, and revenue trends helps cafe owners identify high-performing products, optimize operations, and improve overall business performance.

The primary decision-maker in this scenario is the cafe owner or operations manager, who needs data-driven insights to improve sales and efficiency.

## Objective

The objective of this project is to develop an interactive sales dashboard that analyzes transaction data to identify revenue-driving products, customer purchasing patterns, and operational trends, enabling better decisions related to product offerings, promotions, and sales strategy.

# Data Engineering

## Source

- Cafe dataset from Kaggle
- 8 Columns
- 10,000 Rows
- Time Period: Sales transactions recorded across multiple months, enabling time-based sales analysis.

## Dictionary

- Transaction ID – Unique identifier for each sale
- Category – Product classification
- Quantity – Number of units sold
- Total Spent- Revenue generated per transaction
- Price Per Unit - Price of each product
- Payment Method- Customer payment preference
- Location – Take away or Dine out sales channel
- Transaction Date – Used for time-based analysis

## Cleaning:

01

Missing or inconsistent values in items, payment method and location were replaced by others for aggregation

02

Missing values in quantity, price per unit and total spend were calculated with the help of other two columns

03

We derived a column Item category to categories menu items into bakery, drinks and food

# Metrics Framework

## KPIs

- **Total Transactions** – Total number of customer purchases made during the selected period.
- **Total Spent** – Total sales value generated from all transactions.
- **Total Quantity Sold** – Total number of items sold, representing product demand.
- **Average Order Value** – Average amount spent per transaction, indicating customer spending behavior.

## Why these KPIs?

These KPIs help identify the key revenue drivers and operational improvements required for the cafe:

- **Total Spent** and **Transactions** indicate overall business performance and sales growth.
- **Total Quantity Sold** helps identify demand patterns and popular products.
- **Average Order Value** helps evaluate how much customers spend per visit and supports strategies like combo offers or upselling.



# Key Insights

- A few products contribute higher sales compared to others, indicating that certain menu items act as key revenue drivers and should be prioritized in promotions and availability.
- Units sold are relatively balanced across products, but higher sales value is driven by specific higher-priced items, showing that product pricing and mix strongly influence revenue.
- Drinks category contributes the largest share of overall sales, suggesting strong customer preference and an opportunity to increase revenue through beverage combos or premium offerings.
- Monthly sales trend shows fluctuations with noticeable dips during certain periods, indicating potential seasonal or operational factors affecting performance and highlighting opportunities for targeted promotions during low-sales periods.
- Takeaway and in-store orders form the majority of transactions, showing that operational focus on faster service and order efficiency can improve customer experience and sales volume.
- Digital wallet and card payments dominate transactions, indicating customer preference for cashless payments and the need to ensure smooth digital payment operations.

# Advanced Analysis

A root cause and segmentation analysis was performed to understand the factors influencing sales performance and operational efficiency.

- Product-level analysis was used to identify which items drive higher revenue versus higher quantity sales.
- Category segmentation helped determine which product groups contribute most to overall sales.
- Time-based analysis was conducted to identify periods of sales decline and peak performance.
- Order type and payment method analysis helped understand operational and customer behavior patterns affecting transaction volume.

## New Understanding

- Sales growth is primarily driven by a limited number of high-performing products rather than uniform performance across all items.
- Revenue differences between products are influenced by pricing and product mix, not only by quantity sold.
- Sales fluctuations across months indicate opportunities for targeted promotions during low-demand periods.
- Customer preference for takeaway and digital payments highlights the importance of efficient order processing and payment systems for operational efficiency.



# Dashboard Walkthrough

## Executive View

The top section of the dashboard provides a high-level overview of cafe sales performance through key performance indicators.

Management can quickly understand overall business health using:

- **Total Transactions** to measure customer activity and sales volume.
- **Total Spent** to evaluate overall sales performance.
- **Total Quantity Sold** to understand product demand.
- **Average Order Value** to track customer spending per visit.

## Operational View

The lower section of the dashboard enables deeper operational analysis through interactive charts:

- Total Sales by Product identifies top revenue-generating items and low-performing products.
- Units Sold per Product helps understand demand patterns and inventory focus areas.
- Sales Distribution by Category shows which categories contribute most to revenue.
- Sales Trend by Month highlights seasonal trends and periods of sales decline or growth.
- Order Type Distribution provides insights into customer ordering behavior for operational planning.
- Transactions by Payment Method helps understand payment preferences and supports smoother payment operations.

# Recommendations

## Actionable Business Recommendations

### Promote high-performing products through combos and offers

Since a small number of products contribute significantly to total sales, creating combo deals or highlighting these items can further increase revenue.

### Improve or replace low-performing items

Products with lower sales and demand should be reviewed for pricing, placement, or menu optimization to improve operational efficiency.

### Increase Average Order Value through upselling strategies

Introducing add-ons or bundled offers (e.g., drink + snack combinations) can encourage customers to spend more per transaction.

### Run targeted promotions during low-sales periods

Monthly sales trends show fluctuations; offering discounts or campaigns during slower months can stabilize revenue.

### Strengthen digital payment and takeaway operations

Since customers prefer takeaway orders and digital payment methods, improving service speed and payment efficiency can enhance customer experience and transaction volume.



# 8

# Impact & Value

## Business Impact

### Revenue Impact:

Identifying high-performing products and improving upselling opportunities can increase overall revenue and average order value.

### Operational Efficiency:

Understanding demand patterns helps optimize product focus, reduce low-performing items, and improve order processing efficiency.

### Time Efficiency:

The dashboard provides real-time performance monitoring, reducing manual analysis time and enabling faster managerial decisions.

### Improved Decision Making:

Sales trends, category performance, and payment preferences allow targeted promotions and better operational planning.

## Benefits

- Provides a single, easy-to-understand view of business performance.
- Supports faster and more accurate business decisions.
- Helps improve sales performance while optimizing operations.
- Scalable for future analysis such as forecasting and demand planning.

# Limitations & Next Steps

## Limitations

- The dataset contains only transaction-level sales data and does not include customer demographics, profit margins, or inventory information, limiting deeper profitability analysis.
- External factors such as seasonal events, promotions, or market conditions are not captured, which may influence sales trends.
- The analysis is based on historical data and does not include predictive forecasting.
- Limited operational data restricts analysis of staffing efficiency or supply chain performance.

## Next Steps

- Integrate profit and cost data to enable profitability and margin analysis.
- Include customer-level information to perform customer segmentation and loyalty analysis.
- Apply sales forecasting techniques to predict future demand and optimize inventory planning.
- Expand analysis to include promotional effectiveness and pricing optimization.

# THANK YOU

