

# Business Requirements Document (BRD)

## Pizza Sales Analysis

### Project Overview

The Pizza Sales Analysis project is designed to analyse transactional sales data from a pizza store. The goal is to identify key business insights, trends, and KPIs that will help management make informed decisions related to sales, marketing, and operations.

### Business Objectives

- Identify overall revenue, total pizzas sold, and total number of orders.
- Determine sales distribution by pizza category, size, and type.
- Analyse time-based trends in sales (daily, monthly, and yearly).
- Highlight best-selling and least-selling pizzas by revenue and quantity.
- Understand customer purchasing behaviour through **Average Order Value (AOV)** and **Average Pizza per Order**.
- Provide visualization dashboards for effective decision-making.

### Data Source & Description

**Dataset:** pizza\_sales.csv

**Key fields:**

- **order\_id** → Unique identifier for each order
- **pizza\_id** → Unique identifier for each pizza
- **pizza\_name** → Name of the pizza sold
- **quantity** → Number of pizzas sold per order
- **total\_price** → Total revenue for each transaction
- **date, time** → Order timestamp for time-based analysis
- **pizza\_category, pizza\_size** → Attributes for pizza classification

## Key Performance Indicators (KPIs)

- **Total Revenue** = Sum of total\_price
- **Total Pizzas Sold** = Sum of quantity
- **Total Orders** = Count of unique order\_id
- **Average Order Value (AOV)** = Total Revenue ÷ Total Orders
- **Average Pizza per Order** = Total Pizzas Sold ÷ Total Orders

## Analysis & Visualizations

### Ingredient Analysis

The pizza business aims to understand which ingredients are most frequently used across different pizza types. By identifying the most common ingredients, the store can

### Daily Trend

A **line/bar chart** showing sales by day of the week.

- Useful for staffing and operations planning.

### Hourly Trend

A **line/bar chart** showing sales by hour of the day.

Useful for staffing, ingredients, customer rush and operations planning

### Monthly Trend

A **line chart** depicting monthly revenue and orders.

- Helps track seasonality and identify peak sales months.
- Summer months show higher sales due to promotional campaigns.

### % of Sales by Category

A **bar chart** representing revenue and quantity sold for each pizza category (Classic, Supreme, Veggie, Chicken).

- Helps identify customer preferences.
- Classic pizzas dominate sales, while Veggie has lower demand.

### **% Sales by Pizza Size & Category**

A **bar/ donut chart** comparing sales revenue and quantity by pizza size (S, M, L, XL).

- Highlights demand distribution by size and assist inventory planning.
- Large (L) pizzas contribute the highest revenue.

### **Total Pizzas Sold by Pizza Category**

- Manage inventory by stocking ingredients used in the most popular categories.
- Evaluate if low-performing categories should be optimized, redesigned, or discontinued.

### **Top 5 Best-Selling Pizzas**

A **horizontal bar chart** showing pizzas with the highest sales (by revenue, orders or quantity).

- Supports promotional and menu strategy.

### **Bottom 5 Least-Selling Pizzas**

A **horizontal bar chart** of pizzas with the lowest sales.

- Identifies products for improvement or possible removal from the menu.

## **Business Questions Answered**

- What is the total revenue generated?
- How many pizzas were sold in total?
- Which category and size of pizzas perform best?
- Which pizzas are the top and bottom performers?
- What is the average order value and average pizzas per order?
- What are the sales trends by day, month, and time of day?

## **Deliverables**

- Jupyter Notebook with complete Python analysis.
- Visualizations (bar charts, line charts, trend charts).

- Business Requirements Document (BRD).
- Insights and recommendations for management.

## **Conclusion & Recommendations**

The analysis provides a comprehensive view of pizza sales performance. Management can leverage these insights to:

- Focus marketing on high-performing categories.
- Optimize the menu by reconsidering least-selling pizzas.
- Plan inventory and staffing based on sales peaks.
- Monitor KPIs regularly through dashboards for continuous improvement.