Pizza Sales Performance Dashboard Report

1 Introduction

1.1 Project Overview

This project focused on analyzing pizza sales data in order to gain meaningful business insights and performance trends. This process included pulling data from an SQL Server database, calculating key performance indicators (KPIs), and building an interactive dashboard in Microsoft Power BI.

1.2 Project Objectives & Problem Statement

The main objective was to analyze sales data to answer important business questions and track performance through KPIs and visual trends.

Key Requirements:

- Calculate essential business KPIs (Total Revenue, Average Order Value, etc.).
- Visualize sales trends daily and monthly to identify patterns.
- Analyze sales distribution across categories and sizes.
- Identify top and bottom performers by revenue, quantity, and number of orders.

1.3 Technology Stack

- **Database:** Microsoft SQL Server 2022
- **BI & Visualization Tool:** Microsoft Power BI
- **Data Transformation:** Power Query (within Power BI)

2 Key Performance Indicators (KPIs)

The following KPIs were calculated using SQL queries and later implemented as measures in Power BI:

KPI	Formula	Value
Total Revenue	Sum of all order prices	$817,860.05
Average Order Value	Total Revenue / Total Orders	$38.31
Total Pizzas Sold	Sum of all quantities	49,574
Total Orders	Count of distinct order IDs	21,350
Average Pizzas Per Order	Total Pizzas Sold / Total Orders	2.32

3 Data Analysis & Visualizations

A. Sales Trends

- Daily Trend for Total Orders (Bar Chart):
    - **Insight:** Friday and Saturday are the busiest days, with 3,538 and 3,158 orders respectively. Sunday has the lowest volume.
- Monthly Trend for Total Orders (Line/Area Chart):
    - **Insight:** July is the peak sales month with 1,935 orders, followed by January and May. October has the lowest order volume.

B. Sales Distribution

- Percent of Sales by Pizza Category (Donut Chart):
    - Classic (26.91%) > Supreme (25.46%) > Chicken (23.96%) > Veggie (23.68%).
- Percent of Sales by Pizza Size (Donut Chart):
    - Large (L) pizzas dominate, contributing 45.89% of total revenue, followed by Medium (M) at 30.49%. XXL size has negligible sales (0.12%).

C. Product Performance

- Total Pizzas Sold by Category (Funnel Chart):
    - The Classic category significantly outperforms others in units sold.
- Top 5 / Bottom 5 Pizzas:
    - Visualized through interactive horizontal bar charts.
    - Top by Revenue: The Thai Chicken Pizza, The Barbecue Chicken Pizza, The California Chicken Pizza.
    - Bottom by Revenue & Quantity: The Brie Carre Pizza consistently ranks as the lowest performer.
    - Top by Orders: The Classic Deluxe Pizza is the most frequently ordered item.

4 Technical Implementation

Data Extraction:

- SQL Server Management Studio (SSMS) was used to host the database and execute complex SQL queries.
- Queries were written and run for each KPI and chart data requirement to validate the results before building the Power BI dashboard.

Data Modeling (Power BI):

- **Connection:** Imported data from SQL Server into Power BI Desktop.
- **Data Transformation (Power Query):**
    - Extracted day names and month names from the order_date field.
    - Created abbreviated columns (e.g., "MON", "TUE") for clean axis labels.
    - Added numeric columns for Month Number and Day of Week to enable correct chronological sorting in visuals.

- **Measures:** Created DAX measures to accurately calculate all KPIs and percentages within the Power BI model, and cross checked these measures with the sql query results.

5 Key Insights & Business Implications

1. **Peak Periods:** Staffing and inventory should be optimized for Thursdays, Fridays, and during the months of January and July.
2. **Product Strategy:** The Classic category and Large (L) size are the most critical to revenue generation. Menu and marketing efforts should focus on these winners.
3. **Underperforming Products:** The Brie Carre Pizza and similar bottom performers should be reviewed for potential removal from the menu or revamping through new recipes or promotions.
4. **Customer Behavior:** The average customer orders 2.32 pizzas, spending approximately $38.31 per order. This is a key metric for evaluating deals and combo offers.

6 Conclusion

The project turned raw data from pizza sales into clear, actionable insights. The Power BI dashboard serves as an interactive tool for management to track performance, spot trends, and make data-driven decisions to improve operations, marketing, and menu planning. By validating the SQL data and applying thoughtful data modeling in Power BI, the analysis made sure that all results were accurate and reliable.