Pizza Sales Analysis Project

Tools Used: Python | Pandas | Matplotlib | Seaborn

About the Project

A data-driven analysis of pizza sales designed to uncover key performance insights, understand customer buying patterns, and evaluate revenue trends across categories, sizes, and time periods.

This project leverages Python-based analytics and visualization techniques to support better business decision-making for sales, marketing, and operations teams.

Agenda

- Introduction & Objectives
- KPIs
- Graphs
- Conclusion
- Inferences
- Challenges & Solutions

Introduction & Objectives

Introduction

A data analysis project focused on exploring pizza sales to uncover key business trends and performance metrics.
It helps identify revenue patterns, customer preferences, and operational insights for better decision-making.

Objectives

• Measure total revenue, orders, and pizzas sold.
• Analyse sales trends by category, size, and time.
• Identify top- and least-performing pizzas.
• Evaluate customer buying patterns through AOV and pizza count per order.

KPI 1 – Total Revenue

• The total revenue generated from all pizza orders during the analysis period.
• Reflects overall business performance and sales efficiency across categories.
Total Revenue: $817,860.05

KPI 2 – Total Orders

• Represents the total number of customer orders placed.
• Indicates store activity level and customer demand over time.
Total Orders: 21,350

KPI 3 – Total Pizzas Sold

• Shows the total number of pizzas sold during the analysis period.
• Helps assess overall demand and product popularity across categories.
Total Pizzas Sold: 49,574

KPI 4 – Average Combo

• Measures the average number of pizzas per order, reflecting customer purchasing patterns.
• A higher combo value indicates strong bundle or family-size order trends.
Average Combo: 3.55

KPI 5 – Veg Count

• Represents the total number of vegetarian pizzas sold during the analysis period.
• Helps understand customer preference for veg options and supports menu planning.
Veg Pizzas Sold: 11,449

KPI 6 – Non-Veg Count

• Indicates the total number of non-vegetarian pizzas sold.
• Useful for comparing demand trends and adjusting stock or marketing strategies.
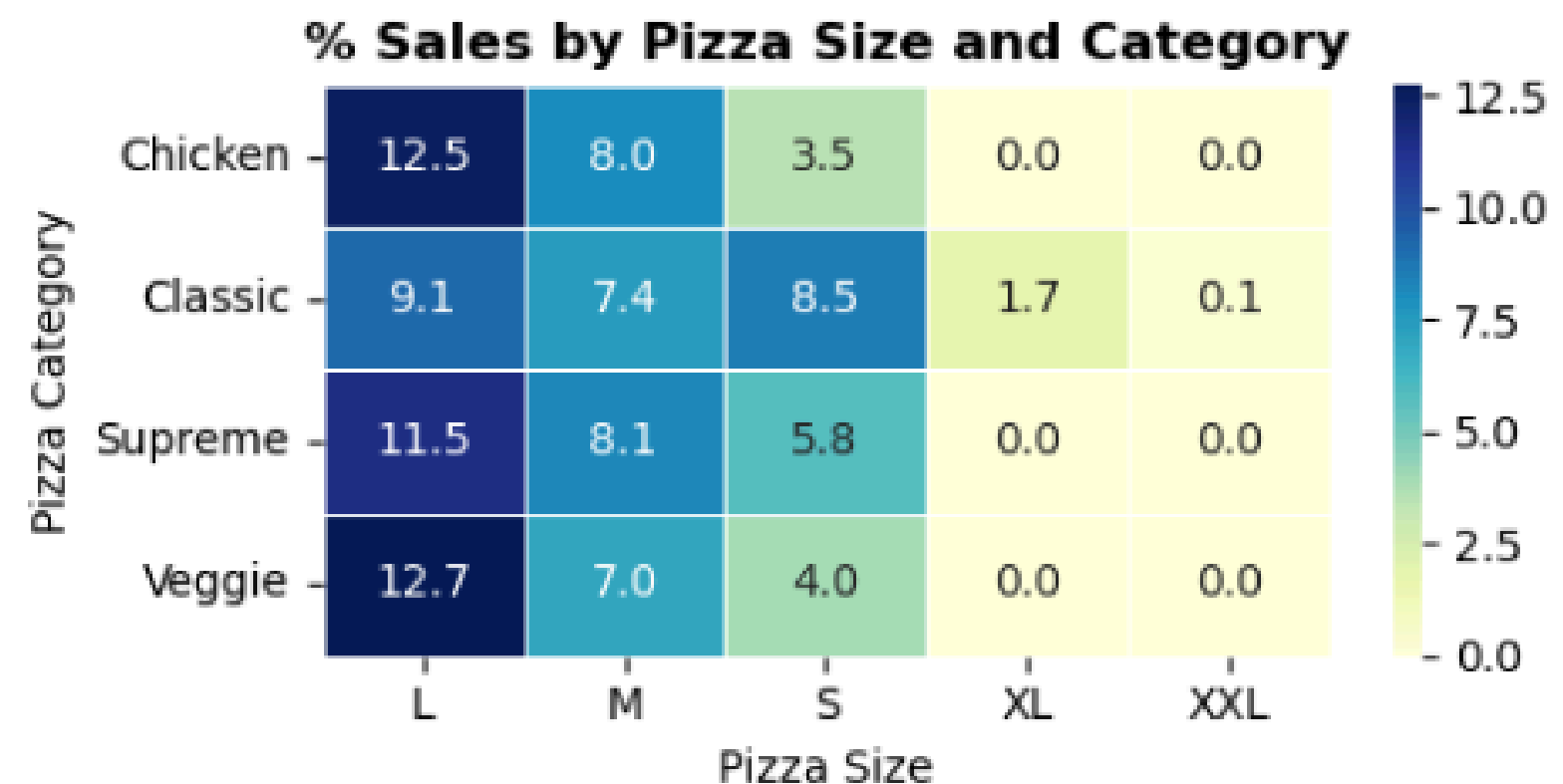**Non-Veg Pizzas Sold: 37,171**
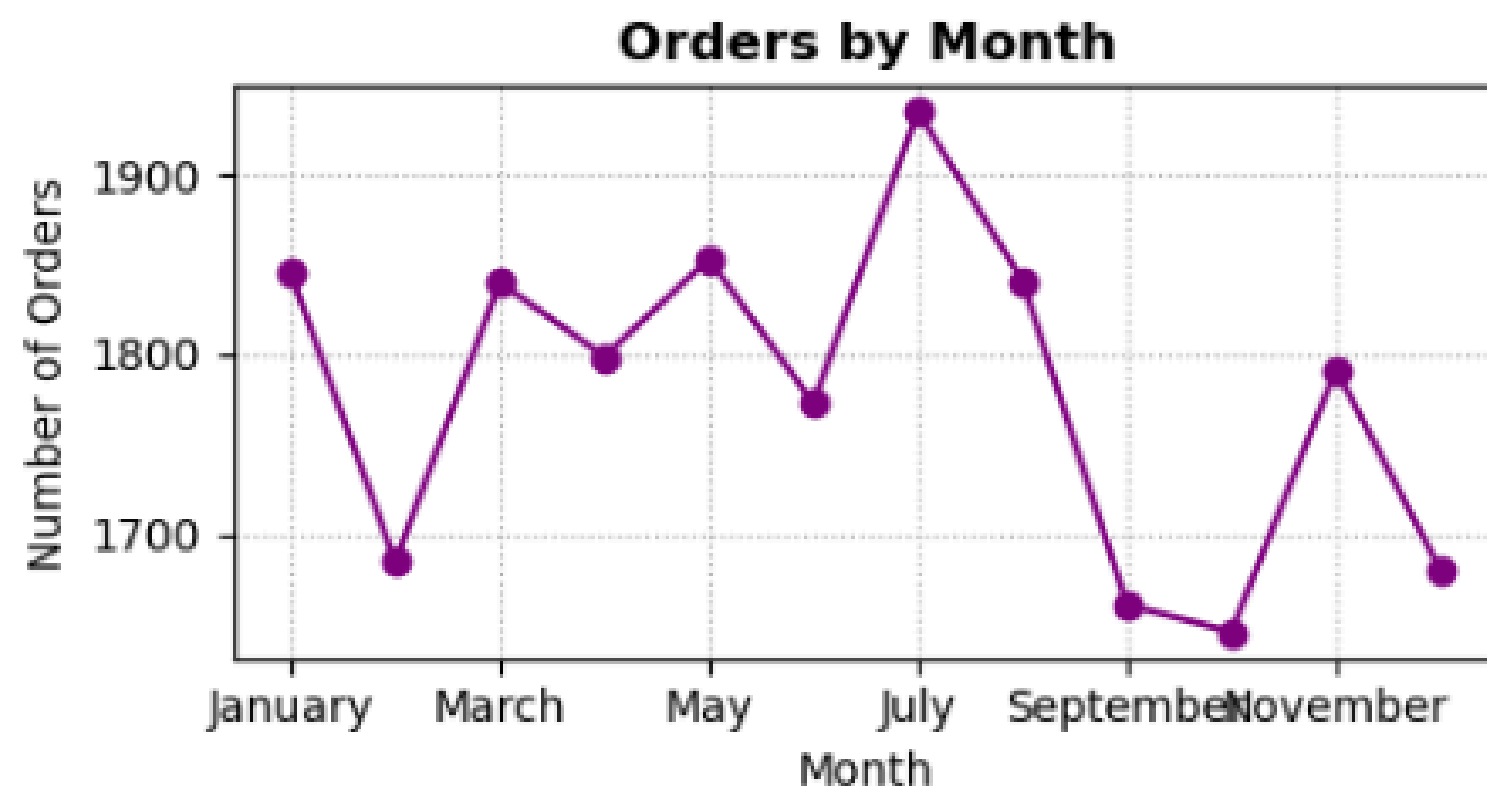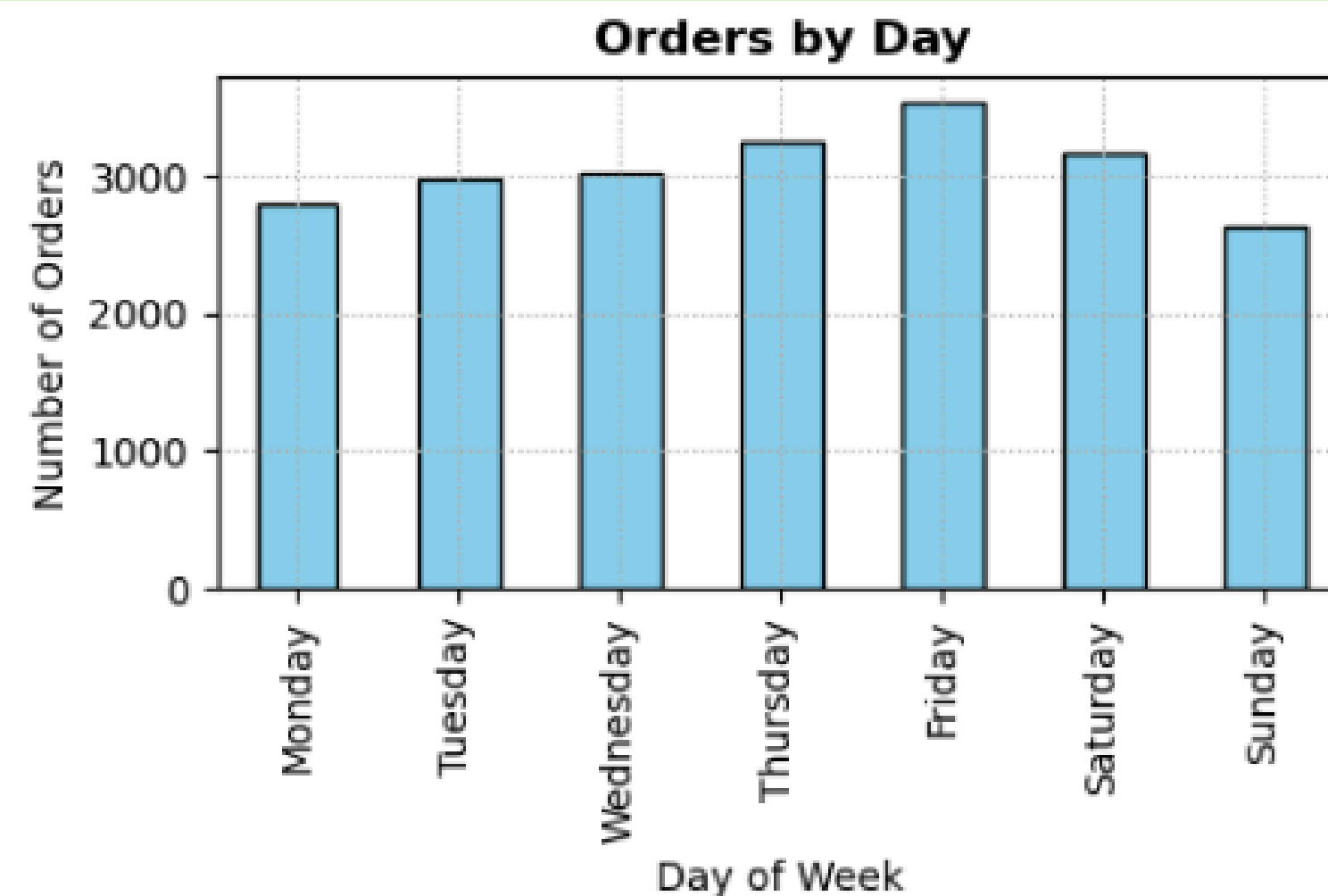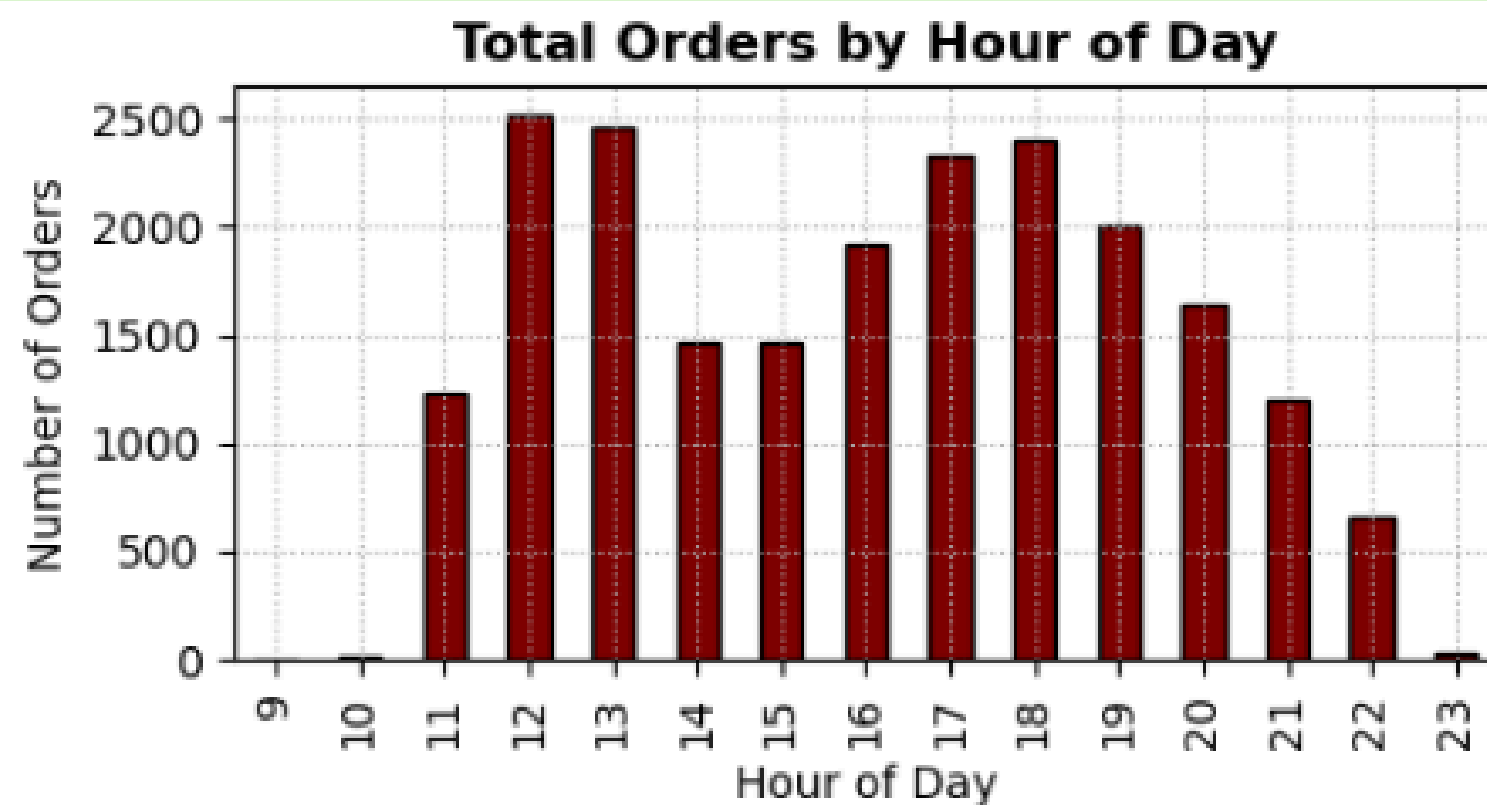
KPI 7 – Average Order Value (AOV)

• Represents the average revenue generated per order.
• Helps evaluate customer spending habits and pricing effectiveness.
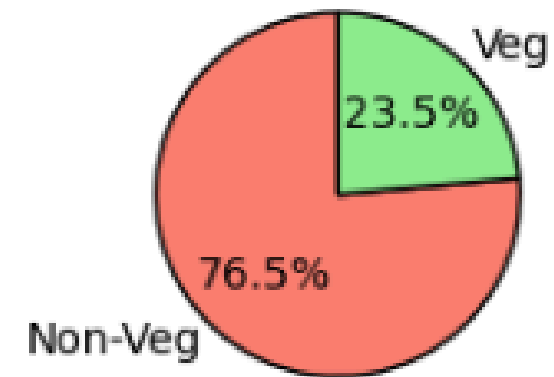**Average Order Value: $38.31**

KPI 8 – Average Pizzas per Order

• Measures the typical number of pizzas purchased in a single transaction.
• Indicates buying behavior and supports combo or family offer strategies.
Average Pizzas per Order: 2.32

Total Orders by Hour of Day

Orders by Day

Orders by Month

% Sales by Pizza Size and Category

Pizza Category	L	M	S	XL	XXL
Chicken	12.5	8.0	3.5	0.0	0.0
Classic	9.1	7.4	8.5	1.7	0.1
Supreme	11.5	8.1	5.8	0.0	0.0
Veggie	12.7	7.0	4.0	0.0	0.0

Proportion of Veg vs Non-Veg Pizzas

Veg 23.5%

Non-Veg 76.5%

Top 5 Pizzas by Revenue

Total Revenue ($)

- The Thai Chicken Pizza
- The Barbecue Chicken Pizza
- The California Chicken Pizza
- The Classic Deluxe Pizza
- The Spicy Italian Pizza

Pizza Name
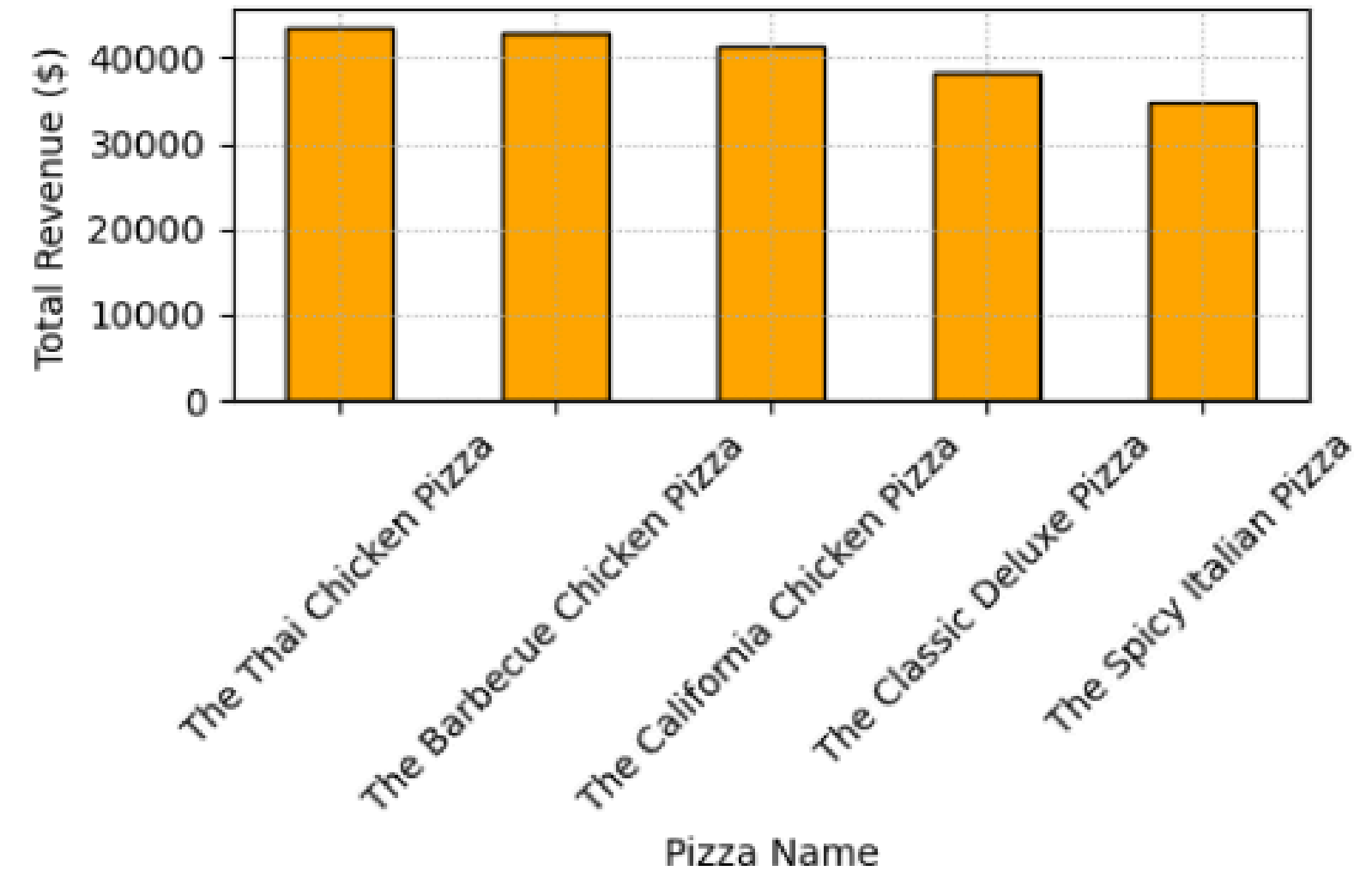
Ingredient Count vs Total Price

Total Price ($)

Type
- Non-Veg
- Veg

Number of Ingredients
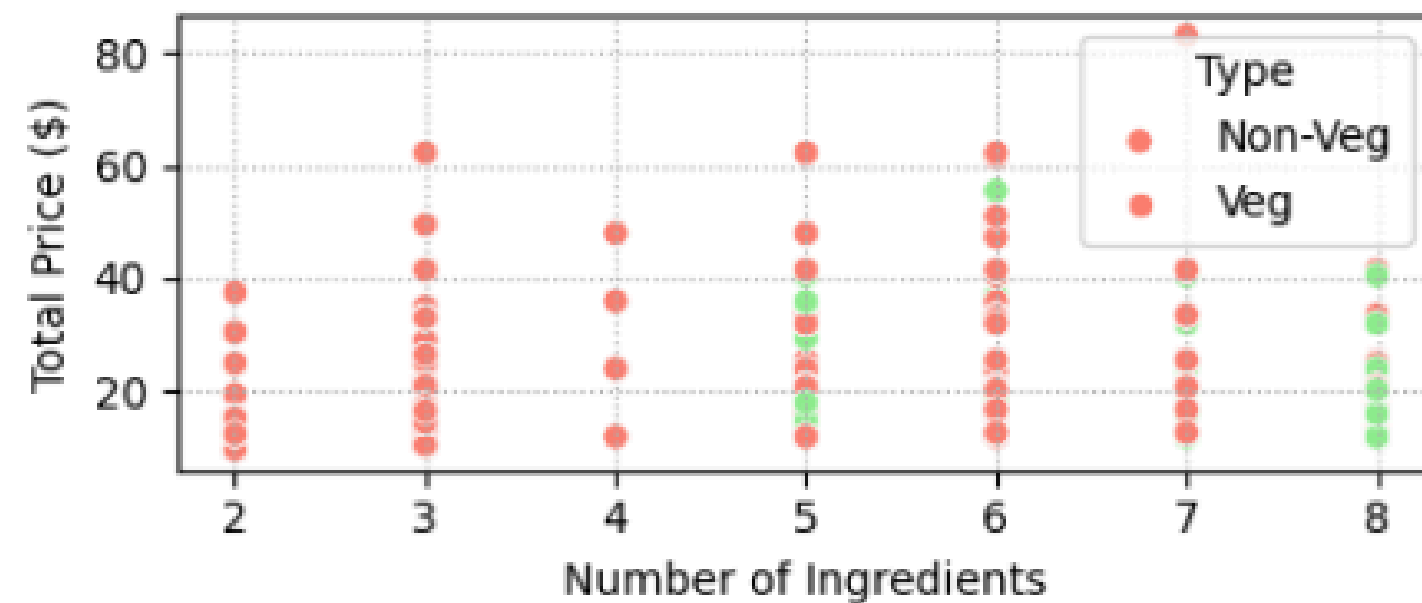
Distribution of Pizzas per Order

Number of Orders

Number of Pizzas in Order
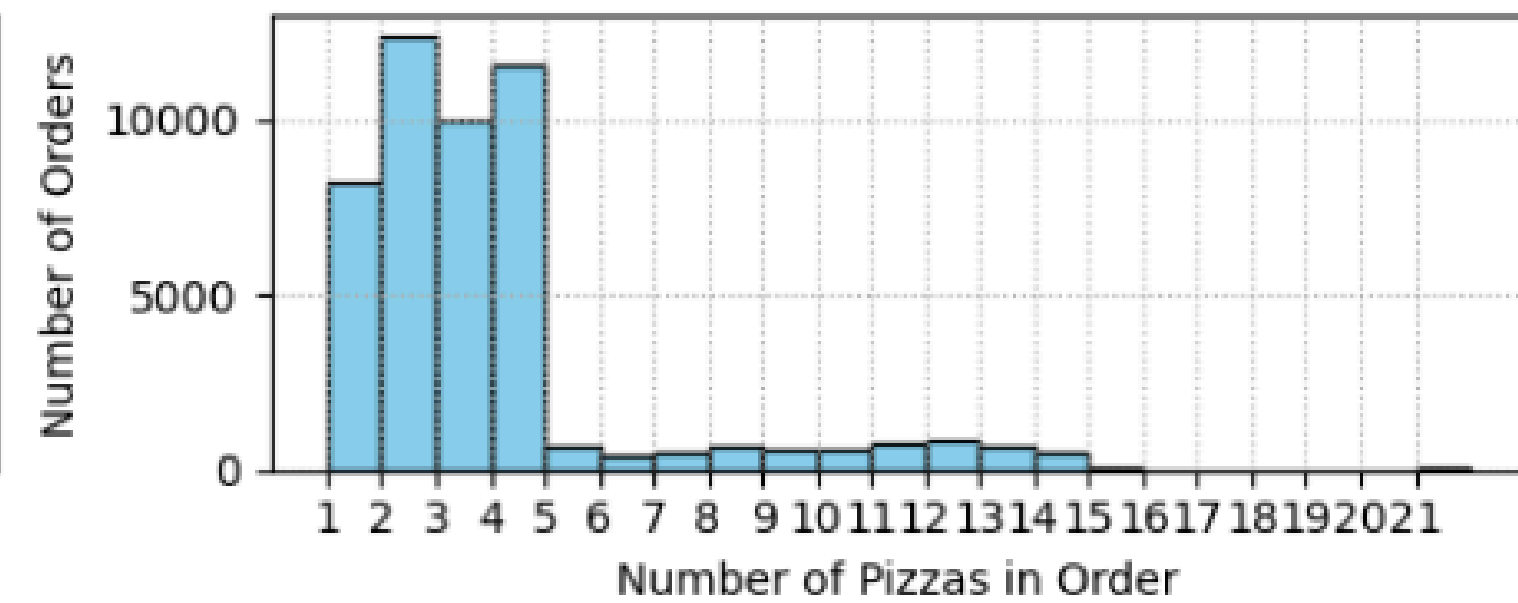
Conclusion

- Peak sales were observed during weekends and evenings, indicating strong leisure-time consumption.
- Classic and Supreme pizzas were top performers in both revenue and quantity sold.
- Seasonal variations showed slight dips in mid-year months, useful for promotional planning.
- Average Order Value and Pizza-per-Order ratios confirmed consistent customer spending behavior.
- Visualization insights help bridge operational planning with customer demand forecasting.

Inferences

• Sales are highest for Non-Veg and Medium-sized pizzas, showing strong customer preference.

• Ingredients like Garlic and Tomatoes are core to most pizzas, driving inventory priorities.

• Low-selling ingredients such as Pears and Thyme indicate niche or premium usage.

• Consistent AOV and order size suggest stable customer spending patterns.

• Insights can guide pricing, marketing, and menu optimization for higher profitability.

Challenges & Solutions

Ingredient Column Formatting

- *Challenge:* Ingredients were stored as long comma-separated strings.
- *Solution:* Used string splitting and data transformation for accurate ingredient-level analysis.

Visual Clarity

- *Challenge:* Some graphs were cluttered due to overlapping labels.
- *Solution:* Adjusted figure sizes, label rotation, and applied concise titles for better readability.

Key Takeaway

Key Takeaway: Customer demand peaks during weekends and evenings, with non-veg medium pizzas driving revenue — actionable insight for marketing and inventory strategy.

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Thank You !