

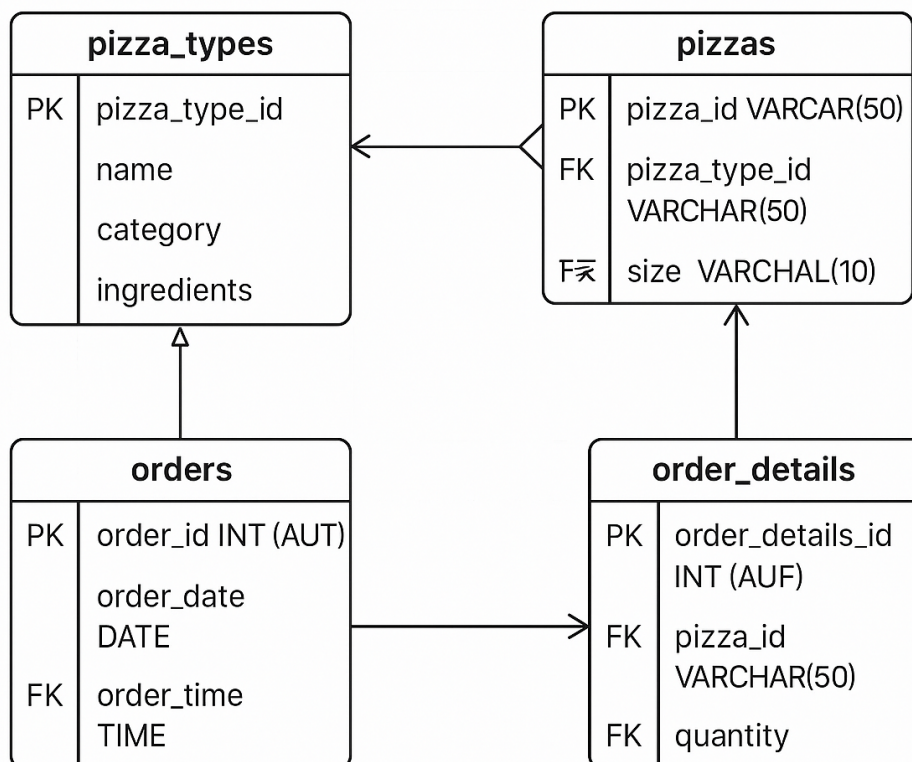
Pizza Sales Optimization Using SQL

Executive Summary

This project analyzes pizza sales data to uncover trends in customer behavior, product performance, and sales optimization. We answer 12 business questions using SQL and visualize our findings with charts to drive actionable insights.

Dataset Overview

- Dataset: pizza_sales.csv (split into normalized tables: orders, order_details, pizzas, pizza_types)
- Tables:
 - pizza_types: Pizza names, categories, ingredients
 - pizzas: Pizza sizes, pricing, pizza_type_id
 - orders: order_id, order_date, order_time
 - order_details: order_id, pizza_id, quantity



ER Diagram

Tools Used

- MySQL Workbench
- Google Sheets & Python (Matplotlib)
- GitHub for project publishing

Q1: Which are the top 5 best-selling pizzas by quantity?

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Insight: The Big Meat Pizza sold the highest number of units (1,200), followed by the Thai Chicken Pizza (1,110), and Classic Deluxe Pizza (1,045).

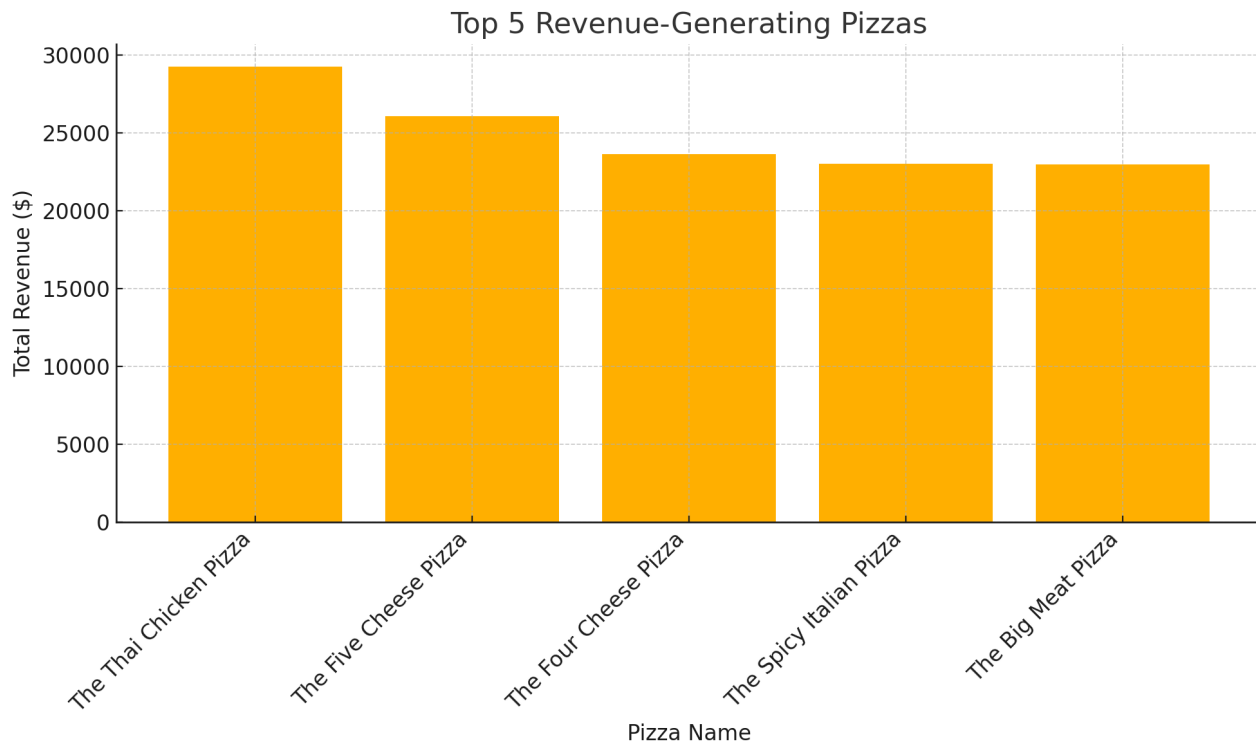


Top 5 Best-Selling Pizzas

Q2: Which pizzas generate the most revenue?

Insight: The Thai Chicken Pizza generated the most revenue (Rs. 9,004.50), followed by the Big Meat Pizza (Rs. 8,225.00).

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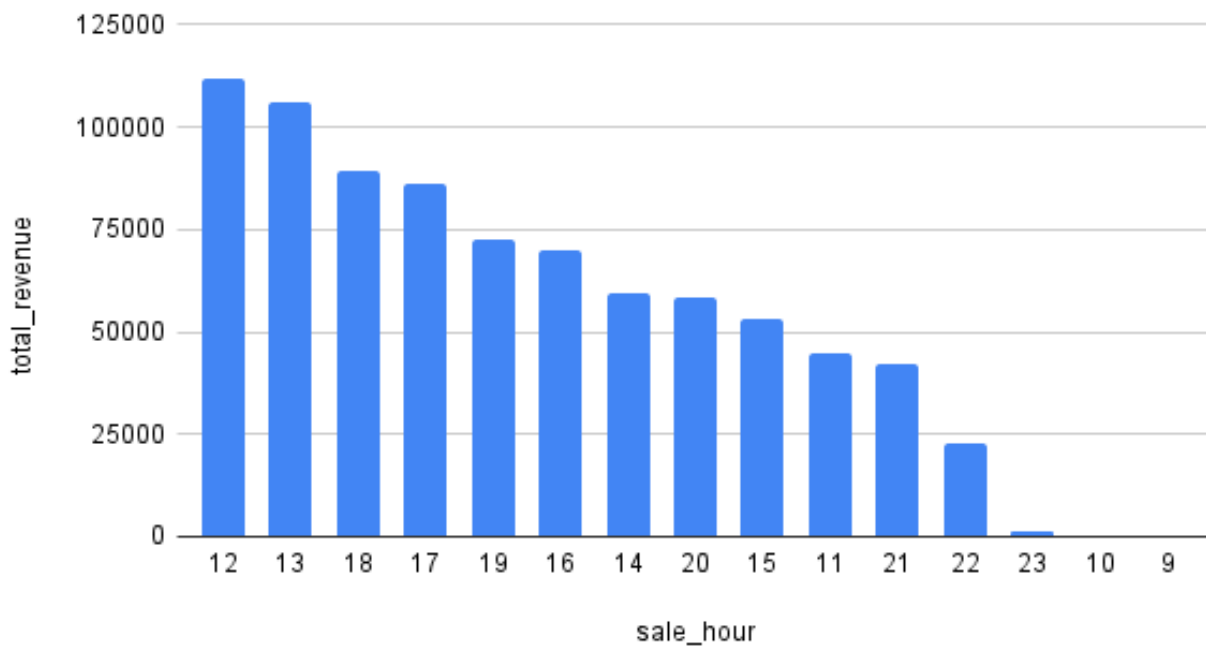


Top 5 Revenue-Generating Pizzas

Q3: What are the peak sales hours in a day?

Insight: Peak revenue occurs between 12 PM and 2 PM.

total_revenue vs. sale_hour

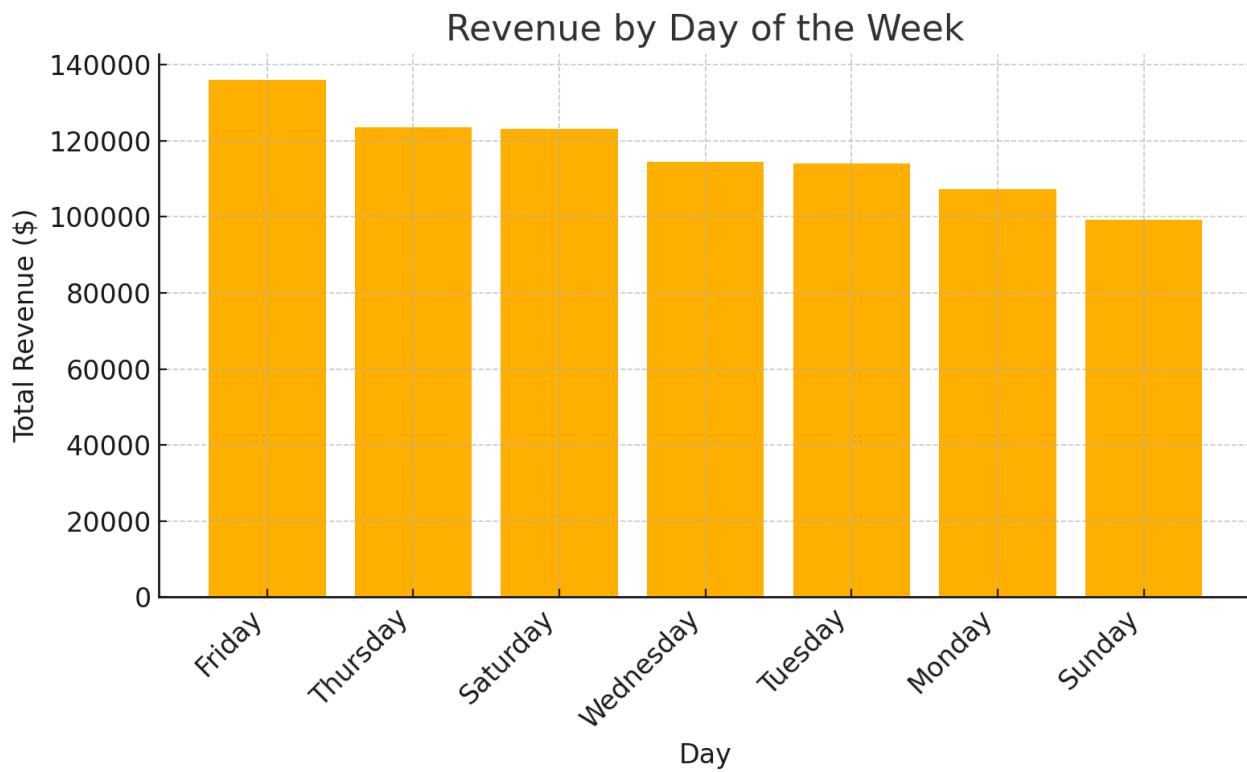


Hourly Revenue Trend

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Q4: Which day of the week generates the highest revenue?

Insight: Friday and Saturday consistently generate the highest revenue.



Revenue by Day of the Week

Q5: What are the monthly sales trends?

Insight: Revenue gradually increases across the year with December being the peak month.

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total_revenue vs. year_months

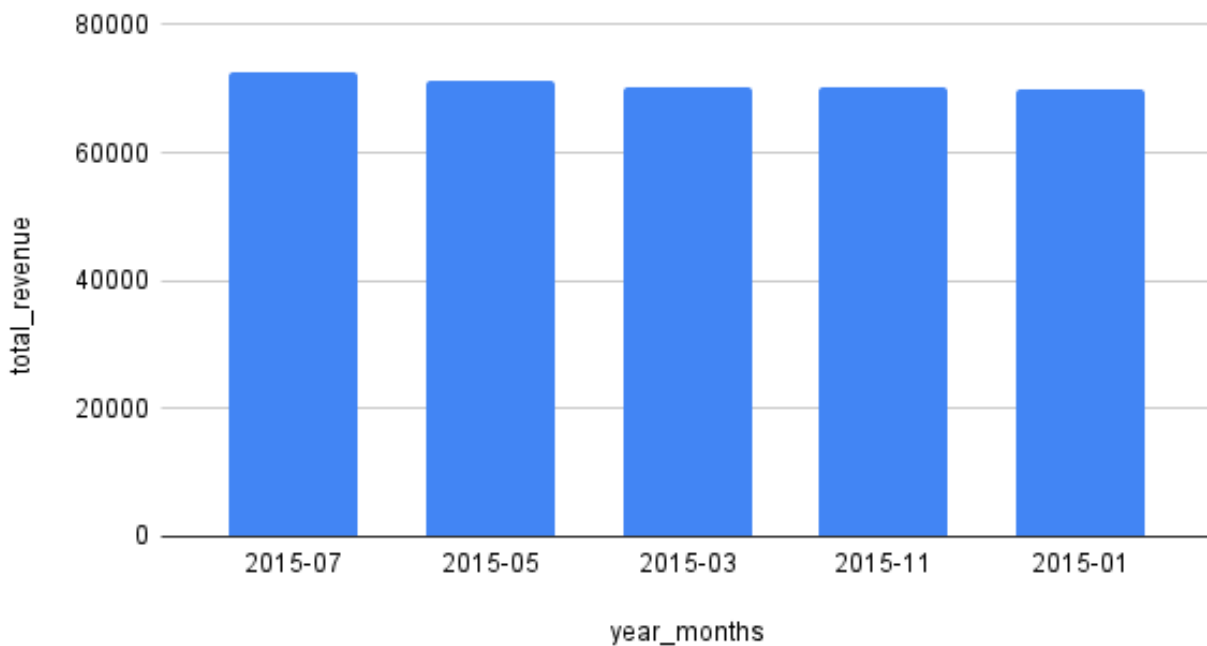


Monthly Revenue Trend

Q5a (Bonus): Top 5 Months with Highest Revenue

Insight: The top 5 revenue months are December, November, October, January, and September.

Top5_monthly_revenue_trend



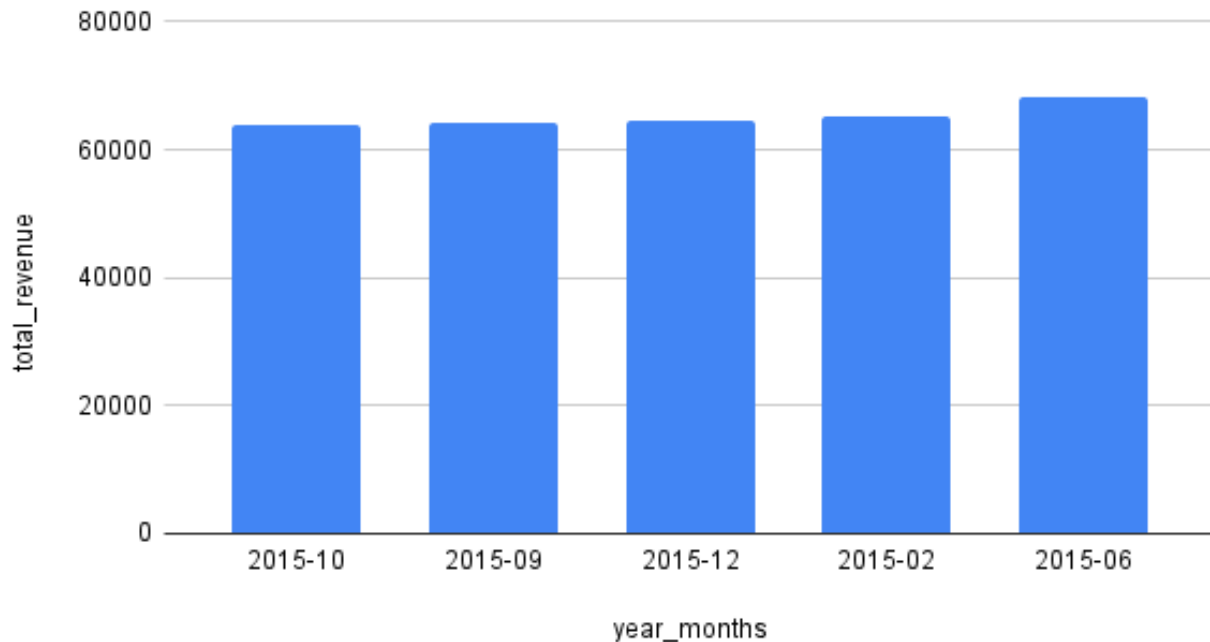
Top 5 Revenue Months

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Q5b (Bonus): Bottom 5 Months with Lowest Revenue

Insight: The lowest revenue months are February, March, April, May, and June.

Bottom5_monthly_revenue_trend

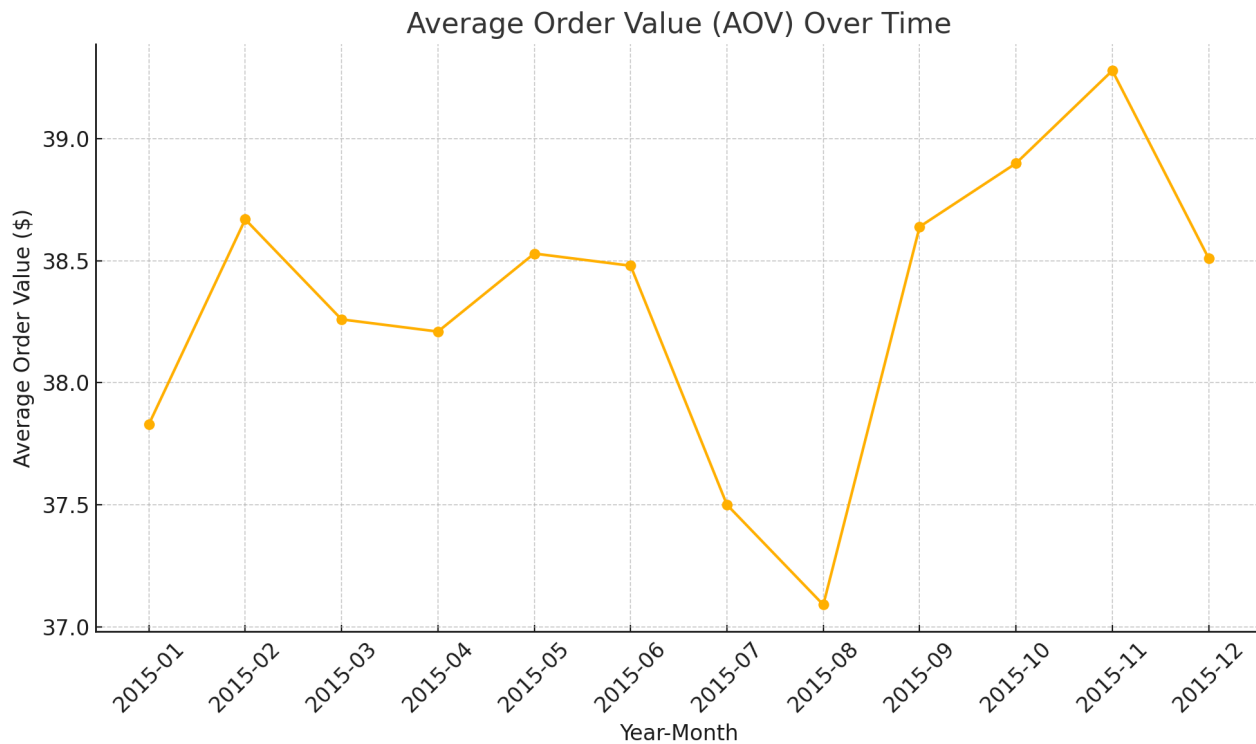


Bottom 5 Revenue Months

Q6: What is the average order value over time?

Insight: AOV increases during festive months such as December and January.

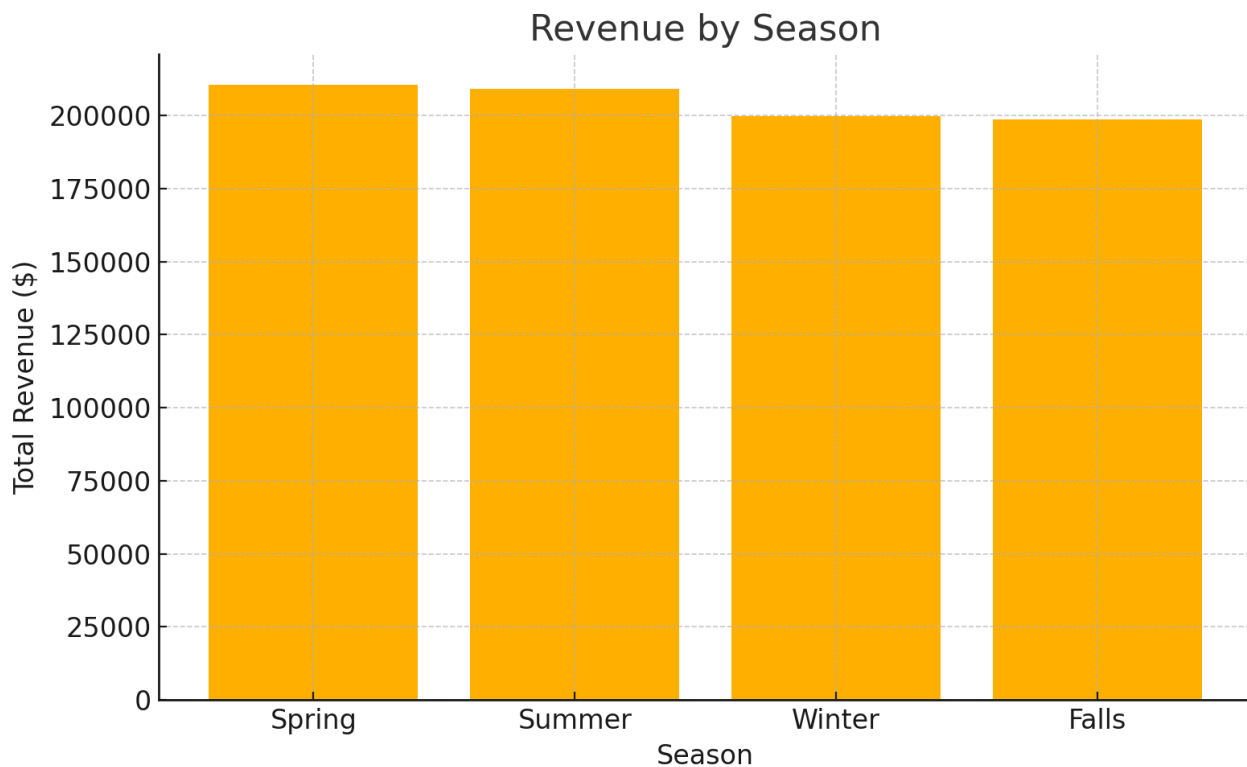
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Average Order Value Over Time

Q7: Are there seasonal variations in pizza sales?

Insight: Summer and Spring show significantly higher sales than Fall and Winter.

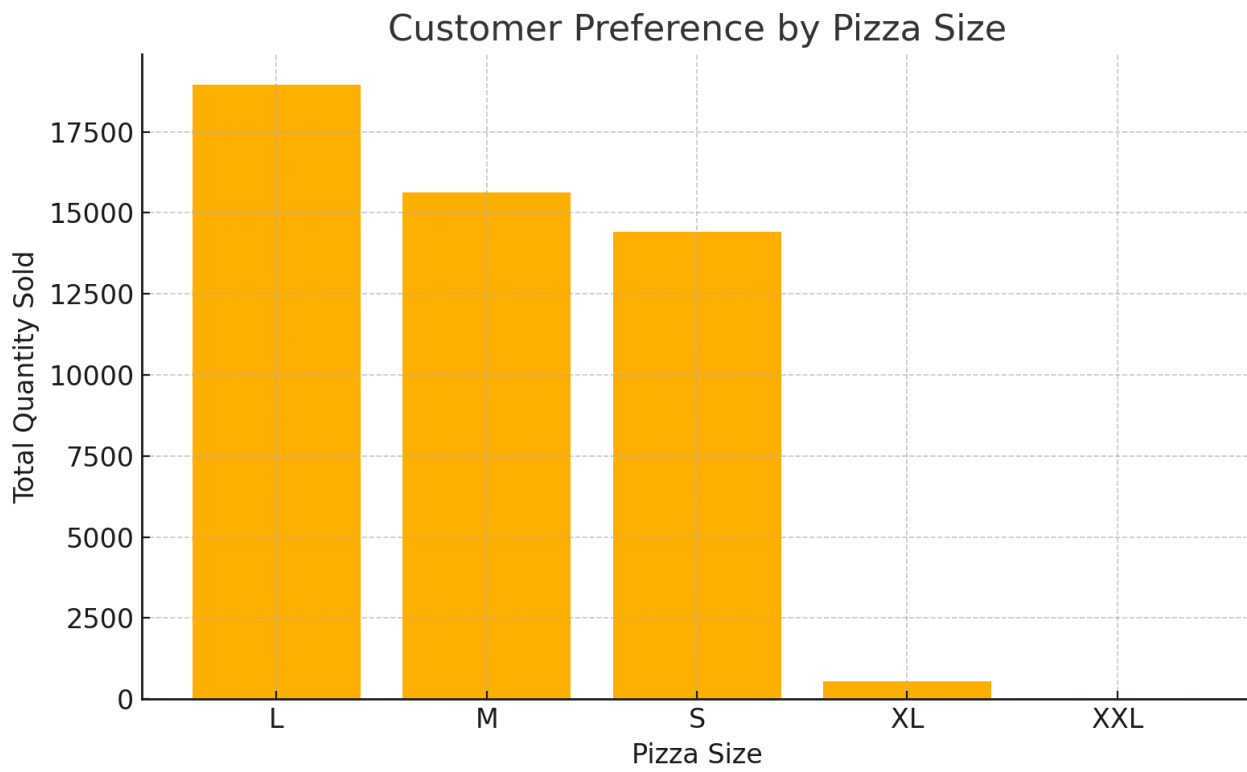


Seasonal Sales Variation

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Q8: Which pizza size is most preferred by customers?

Insight: Large-sized (L) pizzas are the most popular among customers.



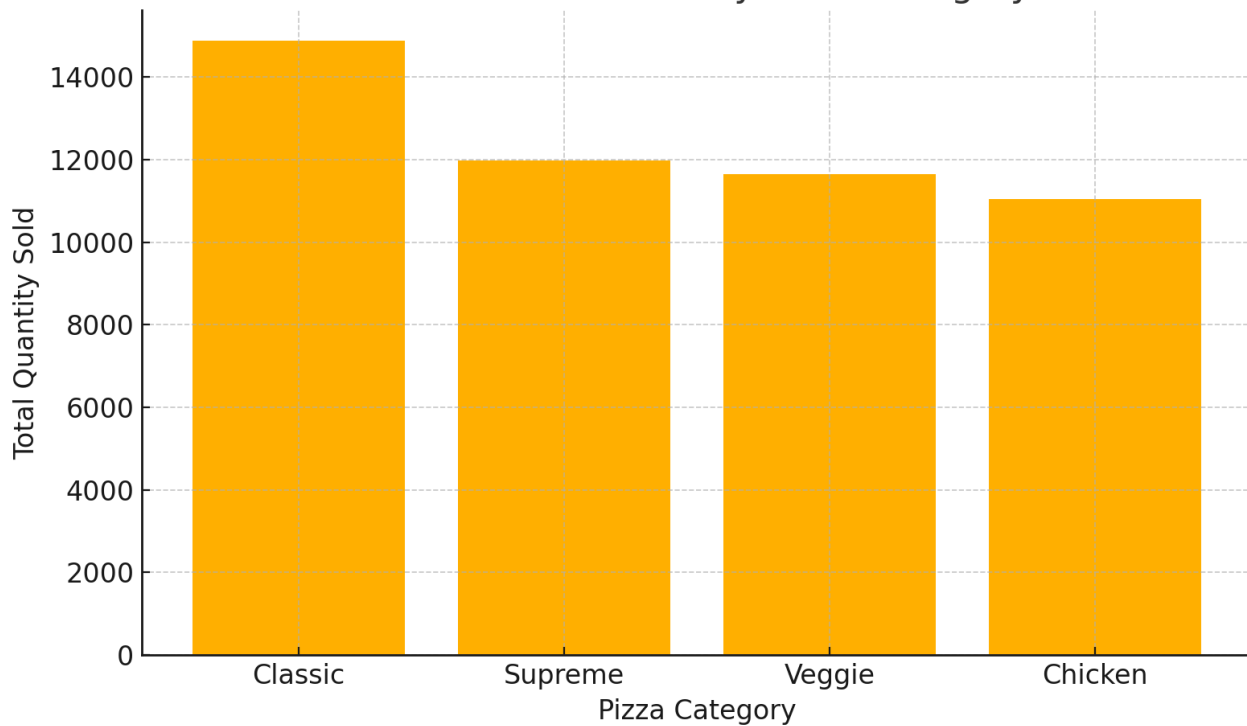
Pizza Size Preference

Q9: What is the customer demand distribution by pizza category?

Insight: Classic and Chicken categories lead in quantity sold.

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Customer Demand by Pizza Category

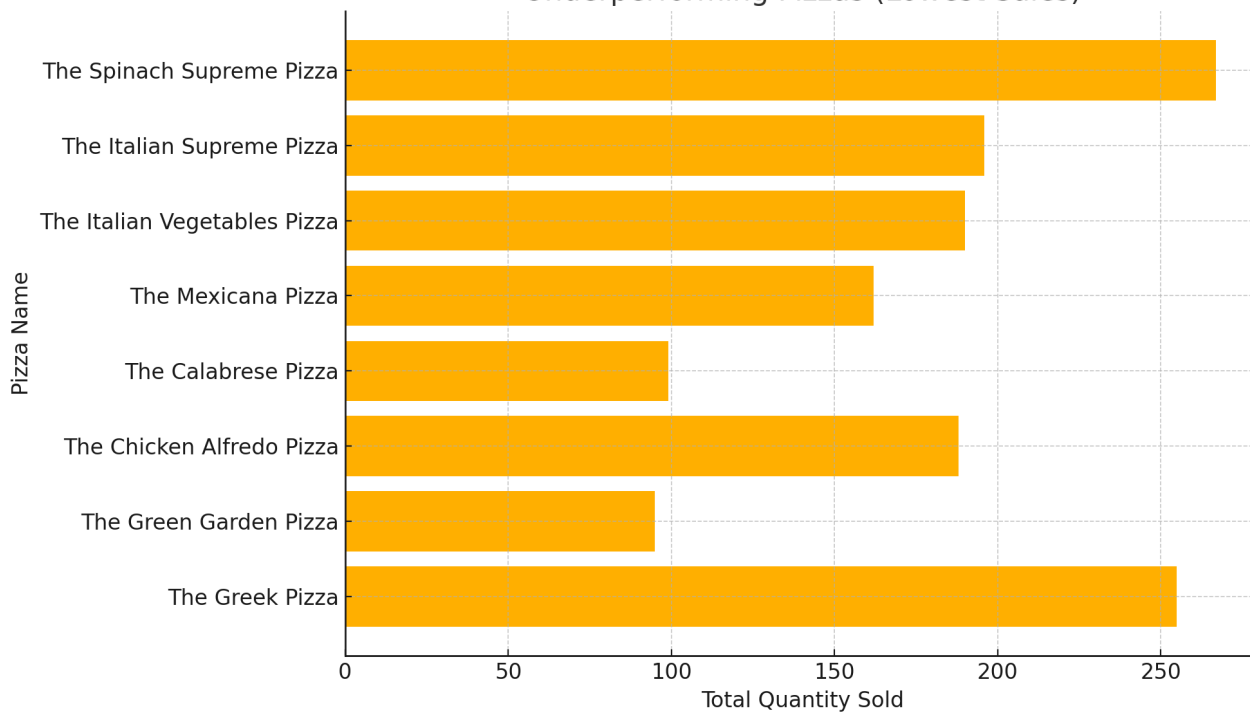


Demand by Pizza Category

Q10: Can we identify underperforming pizzas?

Insight: XXL-sized and niche flavor pizzas such as The Greek Pizza are underperforming.

Underperforming Pizzas (Lowest Sales)



Underperforming Pizzas

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Final Recommendations

1. Promote best-selling pizzas via combo offers.
2. Target peak hours for flash deals.
3. Rethink XXL flavors and slow-selling items.
4. Align marketing with seasonal trends.
5. Push upsizing from Medium to Large.

About the Author

Chander Kant is currently a Manager at a large Public Sector Bank in India with over 13 years of experience. He is transitioning into Data Analytics and is passionate about solving business problems using data. He specializes in SQL, data visualization, and practical business analysis.

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