



Executive

Summary

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This project analyzes pizza sales and kitchen operations data using SQL (MySQL) to uncover actionable insights across **revenue performance, customer preferences, demand patterns, and operational efficiency.**

The analysis reveals that while the business generates steady revenue from a limited set of high-performing pizzas, **a large portion of potential revenue is lost due to cancellations and delayed order processing.** Customer demand peaks during lunch and dinner hours, which directly coincides with **longer preparation times and operational strain.**

Product-level insights show that **low-priced pizzas drive volume**, while **high-priced pizzas generate significant revenue with fewer units sold**, highlighting opportunities for targeted promotions and menu optimization. Operational analysis further indicates that certain pizza categories and peak-hour periods consistently experience slower preparation times, suggesting staffing and workflow inefficiencies rather than demand issues.

Overall, the findings indicate that **revenue growth can be unlocked more effectively through operational improvements and smarter menu strategy**, rather than solely increasing customer demand.



Key Business Insights

1 Revenue & Sales Performance

- Total revenue generated is approximately **\$1,880**, but only **31 out of 100 orders** contribute to realized revenue.
- The **average order value is \$60.36**, indicating strong per-order spending.
- The **Classic pizza category** drives the highest revenue (~\$740), though revenue distribution across categories is highly uneven.
- **Large (L) pizzas** contribute the most revenue (~\$835), reflecting strong customer preference for larger sizes.
- **Pepperoni pizza** is the top revenue-generating product (~\$299).
- Cancelled orders result in an estimated **\$2,670 in lost revenue**, representing a significant leakage.

Business takeaway:

Revenue per order is healthy, but fulfillment inefficiencies and cancellations are limiting overall revenue realization.

2 Demand & Time-Based Patterns

- Order volume peaks during **lunch, evening, and dinner hours**, averaging ~8 orders per hour.
- Peak demand hours are also associated with **higher processing and cancellation rates**.
- **Weekdays outperform weekends**, with Thursday, Monday, and Tuesday being the busiest days.
- The highest demand spikes occur around **Sunday evenings (~17:00)** and **Thursday nights (~22:00)**.
- Operational coverage during peak demand exists but is **not optimized**, leading to delays.

Business takeaway:

Demand is predictable and concentrated, but operational capacity does not scale efficiently during peak periods.

3 Customer Preferences & Menu Performance

- Top-selling pizzas by volume: **Margherita, Pepperoni, Spicy Italian**.
- Top revenue-generating pizzas: **Pepperoni, Spicy Italian, BBQ Chicken**.
- **Classic, Chicken, and Spicy** categories dominate both sales volume and revenue.
- Customers prefer **Large, Medium, and Extra-Large** pizza sizes.
- Low-priced pizzas attract mass demand, while high-priced pizzas succeed as **niche revenue drivers**.
- Poor-performing pizzas such as **Vegan Delight, Hawaiian, and Veggie Supreme** are candidates for menu revision or repricing.

Business takeaway:

The menu has clear winners, but simplifying or repositioning low-performing items could improve efficiency and profitability.

4 Operations & Preparation Efficiency

- Average preparation time per order is approximately **23 minutes**.
- Preparation time does not differ drastically by order status but **increases during peak hours (11–13, 18–20)**.
- Fridays, Tuesdays, and Sundays experience slightly longer preparation times.
- Categories like **Chicken, Supreme, and Spicy pizzas** take **2–3 minutes longer** than average to prepare.

Business takeaway:

Operational delays are driven more by **menu complexity and peak-hour congestion** than by order volume alone.

5 Advanced Strategic Findings

- Some pizzas generate **high revenue despite low sales volume**, indicating strong pricing power.
- Several profitable pizzas are also **operationally expensive**, slowing down kitchen throughput.
- Approximately **\$2,170 worth of revenue is currently stuck in Processing orders**, impacting cash flow.

- Peak revenue hours do not always align with the slowest prep times, but **midday congestion (12–13)** shows noticeable strain.

Business takeaway:

Balancing revenue optimization with operational efficiency is key to sustainable growth.



Recommendations

1 Optimize Staffing During Peak Hours

Action:

Increase kitchen staffing during lunch (12–2 PM) and dinner (6–9 PM) based on demand patterns.

Impact:

- Reduced preparation delays
- Faster order completion
- Improved customer satisfaction

2 Streamline High-Prep-Time Pizzas

Action:

Simplify preparation workflows for Chicken, Supreme, and Spicy pizzas; pre-prep ingredients before peak hours.

Impact:

- Lower average prep time
- Higher kitchen throughput
- Reduced order backlog

3 Reduce Revenue Loss from Cancellations

Action:

Monitor high-value orders in Processing status and intervene early with status updates or delivery reassurance.

Impact:

- Recovery of avoidable revenue losses
- Improved customer trust
- Better cash flow realization

4 Focus Promotions on High-Revenue, Low-Prep Pizzas

Action:

Promote pizzas that balance **strong revenue generation with faster preparation times**.

Impact:

- Increased revenue per hour
- Reduced operational stress
- More efficient promotions

5 Reassess Underperforming Menu Items

Action:

Remove, reprice, or rebrand low-selling pizzas such as Vegan Delight and Hawaiian.

Impact:

- Simplified menu
- Faster operations
- Better inventory utilization



Overall Business Value Delivered

- ✓ Identified revenue leakage from cancellations and processing delays
 - ✓ Mapped demand peaks to operational bottlenecks
 - ✓ Highlighted menu items impacting both revenue and efficiency
 - ✓ Delivered actionable, operations-focused recommendations
 - ✓ Enabled data-driven decisions for staffing, menu, and workflow optimization
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