PROJECT REPORT: PIZZA SALES ANALYSIS

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Objective: Revenue Optimization & Sales Performance Intelligence

1. EXECUTIVE SUMMARY

This project analyzes transactional pizza sales data to uncover revenue drivers, customer ordering behavior, product performance, and operational trends. Using **MySQL** for data extraction and **Power BI** for high-impact visualization, this analysis delivers actionable insights to optimize pricing strategies, product focus, and operational efficiency.

Key Performance Indicators (KPIs)

Based on the PSA_Dashboard:

- **Total Revenue:** ₹817.86K
- **Total Orders:** 21K
- **Total Quantity Sold:** 50K
- **Average Order Value:** ₹38.31

The Core Challenge: *"How can pizza sales data be leveraged to improve revenue growth, optimize product strategy, and enhance operational efficiency?"*

2. BUSINESS PROBLEM STATEMENT

A pizza retail company seeks to:

- Identify top-performing pizza categories and sizes.
- Understand time-based demand trends to optimize staffing and inventory.
- Refine pricing and promotional strategies.
- Improve product mix decisions to maximize profitability.

3. TECHNICAL METHODOLOGY

3.1 Data Modeling & Database Structure (MySQL)

The project utilizes a **Star Schema** design to enable efficient aggregation and reporting.

- **Fact Table:** order_details (Contains transactional quantity and IDs).
- **Dimension Tables:** orders (Time/Date), pizzas (Pricing/ID), and pizza_types (Names/Categories).
- **Implementation:** Relational joins were implemented to link sales transactions with product metadata.

3.2 Business Analysis Using SQL

Advanced SQL queries were used to transform raw data into business intelligence.

Revenue Analysis:

```
SELECT SUM(order_details.quantity * pizzas.price) AS total_revenue
FROM order_details
JOIN pizzas ON order_details.pizza_id = pizzas.pizza_id;
```

Result: Total Revenue exceeded ₹817,860.

Top Revenue Generating Pizzas:

1. The Thai Chicken Pizza
2. The Barbecue Chicken Pizza
3. The California Chicken Pizza

Size & Category Performance:

- **Category Drivers:** Classic and Supreme categories contribute the highest percentage of total revenue.
- **Size Demand:** Large (L) size dominates with **19.0K units**, followed by Medium (15.6K) and Small (14.4K).

Time-Based Analysis:

Using the HOUR() function, peak sales periods were identified between the afternoon and evening hours, providing a roadmap for operational scaling.

3.3 Visualization & Business Intelligence (Power BI)

A fully interactive dashboard (**PSA_Dashboard**) was developed to provide stakeholders with:

- **Trend Analysis:** Revenue by Month.
- **Product Insights:** Revenue by Category (Donut Chart) and Quantity by Size.
- **Top Performers:** Rankings of the top 5 revenue-generating pizzas.
- **Interactivity:** Dynamic filters for date ranges and categories.

4. STRATEGIC RECOMMENDATIONS

1️⃣ Product Strategy Optimization

- **Focus:** Direct marketing efforts toward Large-size pizzas and the Top 3 chicken-based variants.
- **Bundling:** Introduce "Combo Meals" for Medium and Small sizes to increase the average quantity per order.

2️⃣ Category & Pricing Focus

- **Premium Tiers:** Introduce premium variations within the "Classic" and "Supreme" categories.
- **Price Adjustment:** Since the "Large" size has high inelastic demand, consider a slight premium pricing adjustment.

3️⃣ Operational Efficiency

- **Dynamic Promotions:** Launch limited-time "Happy Hour" offers during off-peak hours (identified via SQL) to stabilize kitchen workflow.
- **Menu Pruning:** Redesign or remove low-performing pizzas identified in the bottom percentile of revenue contribution.

5. BUSINESS IMPACT

By implementing these data-driven strategies, the organization can:

- **Improve revenue growth rates** through targeted high-value sales.
- **Optimize inventory planning** by anticipating size and category demand.
- **Enhance product profitability** by focusing on high-margin menu items.

6. CONCLUSION

This end-to-end analysis demonstrates the power of SQL, data modeling, and Power BI in transforming raw transactional data into strategic intelligence. The project successfully bridged the gap between data storage and business action, reflecting strong capabilities in KPI development, revenue analysis, and dashboard design.

📁 Deliverables

- **MySQL Queries:** Database structure and advanced scripts (PSA_Pre_Queries).
- **Power BI Dashboard:** Interactive visual report (PSA_Dashboard).
- **GitHub Repository:** Full project documentation and source files.