Pizza Sales Data Analysis Report

Executive Summary

This report summarizes the findings from the **Pizza Sales Data Analysis** project, which utilized **SQL (Structured Query Language)** for comprehensive data extraction and calculation, and **Power BI** for creating an interactive, visual dashboard. The analysis focuses on tracking key business metrics, identifying sales trends over time, and evaluating product performance to provide actionable insights for optimizing operations, marketing, and inventory management.

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1. Key Performance Indicators (KPIs)

The foundation of the analysis is a set of core financial and operational KPIs, calculated using aggregate SQL queries on the primary sales data.

KPI	Metric Focus	Calculation (SQL Snippet)	Business Value
Total Revenue	Financial Performance	round(sum(total_price),0)	Overall sales volume.
Total Orders	Customer Activity	count(distinct order_id)	Measure of customer traffic.
Total Pizzas Sold	Product Volume	sum(quantity)	Raw demand for product.
Average Order Value (AOV)	Order Size/Pricing Efficiency	sum(total_price) / count(distinct order_id)	Average spend per transaction.
Average Pizzas per Order	Order Composition	sum(quantity) / count(distinct order_id)	Efficiency of upselling/combos.

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(These metrics are typically displayed as large, prominent cards on the Power BI dashboard for quick reference.)

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2. Sales Trend and Time-Series Analysis

Analyzing order and revenue trends by time period is crucial for operational planning, such as staffing and promotional scheduling.

Daily and Monthly Trends

The SQL queries calculate the total orders by day of the week and month name, revealing periods of highest demand.

- **Busiest Days:** Orders grouped by datename(DW,order_date) identify the days with the highest traffic (e.g., Fridays and Saturdays are typically peak days).
- **Busiest Months:** Orders grouped by datename(MONTH,order_date) reveal monthly seasonality (e.g., Q2 and Q3 often show peak sales months).

(The Power BI dashboard features line or bar charts to visualize these trends, showing clear spikes on peak days/months.)

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3. Product Performance and Distribution

This section uses aggregation and percentage calculations to understand customer preferences and product profitability.

A. Revenue Distribution by Category and Size

Analysis of the pizza_category and pizza_size fields is essential for inventory stocking and menu pricing.

- **Sales by Pizza Size:** Calculations like round(sum(total_price) * 100 / (select sum(total_price) from sales),1) show the percentage of total sales for each pizza size. This typically indicates that **Large** and **Medium** sizes contribute the most revenue.
- **Sales by Pizza Category:** Similar percentage calculations for pizza_category reveal the most popular pizza styles (e.g., Classic, Veggie, Supreme).

(The Power BI dashboard uses Pie or Donut charts to clearly illustrate these percentage distributions.)

B. Top and Bottom Selling Pizzas

The analysis identifies the best and worst-performing individual pizzas based on total revenue.

- **Top 5 Sellers:** A SELECT TOP 5 query ordered by sum(total_price) DESC identifies the top revenue-generating pizzas.

- **Bottom 5 Sellers:** A SELECT TOP 5 query ordered by sum(total_price) ASC identifies the lowest revenue-generating pizzas. This insight helps determine candidates for menu removal or promotional campaigns.

(Bar charts in the Power BI file provide a ranked view of the top and bottom performers.)

Conclusion

The **SQL** foundation provided accurate, aggregated data for crucial KPIs and segmented performance metrics. The **Power BI** dashboard (pizza_sales_analysis_dashboard.pbix) transforms these metrics into dynamic visualizations, allowing stakeholders to easily monitor the business, identify peak sales periods, and make informed decisions on product strategy, such as promoting top-selling items and optimizing inventory levels for popular sizes and categories.