

Pizza Company Analysis Project

Client Brief Document

Objective

We aim to gain actionable insights into our pizza business to improve sales performance, customer experience, and operational efficiency. Your analysis will help us identify trends, optimize processes, and make strategic decisions.

Dataset Overview

You are provided with four datasets in csv format:

1. **Pizzas**
 - Details about each pizza, including type, size, and price.
 - Fields: pizza_id, pizza_type_id, size, price
 2. **Pizza Types**
 - Categories and ingredient details for each pizza type.
 - Fields: pizza_type_id, name, category, ingredients
 3. **Orders**
 - Information about each order placed, including date and time.
 - Fields: order_id, date, time
 4. **Order Details**
 - Data about the specific pizzas in each order, including quantities.
 - Fields: order_details_id, order_id, pizza_id, quantity
-

Business Goals

1. **Sales Performance**
 - We want to know which pizzas are performing well and which aren't.
 - Identify top-performing and underperforming pizzas to guide menu decisions.
 - Understand revenue trends across pizza sizes, categories, and time periods.
2. **Customer Behavior**
 - Can we identify any trends in customer ordering behavior?
 - Determine popular pizza combinations, peak ordering times, and average order sizes.
 - Analyze how customer preferences vary across sizes, types, and categories.
 - Correlation analysis between pizza size and customer preferences.
3. **Operational Insights**
 - Help us optimize our ingredient supply chain. What are the monthly requirements for each ingredient?
 - Provide insights into high-demand periods and inventory needs.
 - Highlight inefficiencies in operations or ordering patterns.
4. **Strategic Decisions**
 - Are there pizzas that we should consider removing from the menu due to low performance?

- Should we introduce a new pizza size or type based on sales and customer trends?
- How can we better manage costs through ingredient procurement?

Scope of Work

You are required to analyze the datasets using SQL and deliver insights through clear and actionable recommendations.

Key Questions to Address

Sales Performance

1. What is the total revenue generated by the company?
2. We want to know which pizzas are performing well and which aren't. Break down sales performance by type, size, and category.
3. Which pizza type, size, and category generate the highest and lowest revenue?
4. Identify the top-performing and underperforming pizzas to evaluate potential menu adjustments.
5. What are the top 5 pizzas by quantity sold?
6. What is the revenue contribution of each pizza size (e.g., small, medium, large)?
7. What is the revenue contribution of each category (e.g., vegetarian vs. non-vegetarian)?
8. Provide insights into revenue trends across different time periods (e.g., daily, weekly, monthly).
9. What is the average monthly revenue, and how does it vary by category?
10. Which pizzas are performing poorly?

Customer Behavior

11. Can we identify any trends in customer ordering behavior?
12. Analyze the average order size and revenue per order.
13. What is the average number of pizzas sold per order?
14. Identify popular pizza combinations often ordered together.
15. How many unique orders contained only vegetarian pizzas?
16. Which size of pizza is most popular among customers?
17. How does customer behavior vary during weekends compared to weekdays?
18. What is the revenue breakdown by pizza type for orders placed during weekends?
19. When do customers place the most orders (hour of the day, day of the week)?
20. Determine peak ordering times and customer preferences for pizza size, type, and category.
21. What is the average quantity of pizzas per order during the peak sales hours?

Operational Insights

22. How many pizzas are sold each month, and what is the trend over time?
23. What are the total quantities of each pizza type sold?
24. How much of each ingredient is required to meet the sales demand?
25. Which ingredients are the most and least utilized based on current trends?
26. What are the monthly requirements for the top 3 most used ingredients?

27. Help us optimize our ingredient supply chain. Which ingredients are used most frequently, and what are the monthly requirements?
28. Provide insights into high-demand periods where operational adjustments may be required.
29. Suggest ways to improve efficiency based on trends in pizza preparation and delivery.

Strategic Decisions

30. Are there pizzas that consistently generate low sales, and what action should we take regarding them?
31. How can we optimize inventory management to minimize waste and maximize efficiency?
32. The company is considering expanding its vegetarian pizza line. Does the data support this decision?
33. Is there an opportunity to introduce a new pizza size or category based on sales trends?
34. Are there patterns suggesting the need for a new ingredient combination?
35. Should we introduce a 'family-size' pizza to increase revenue? Use the data to justify your recommendation.
36. Based on ingredient usage, should we negotiate better pricing with suppliers for high-demand ingredients?

Deliverables

- SQL scripts addressing the above questions.
- A summary report highlighting key findings and actionable recommendations.

Timeline:

The analysis is expected to be completed within two weeks, with intermediate updates at the end of the first week.

Expectations from a Data Analyst

- **Technical Analysis:** Use SQL to extract meaningful insights aligned with the business requirements. Ensure all findings are accurate and supported by the data.
- **Problem Solving:** Use the provided questions as a guide but feel free to explore additional insights or patterns in the data that could benefit the business.
- **Presentation of Results:** Document your queries and findings clearly, and prepare a short summary of recommendations that can be shared with stakeholders.

Additional Notes

- You may encounter data anomalies such as missing or duplicate entries. Address these issues as part of your analysis.
- Think strategically. Beyond the numbers, we're looking for recommendations that can drive business growth and efficiency.

- Simulate a real-world experience by organizing your workflow, collaborating with peers, and presenting findings effectively.

Last Minute Request

- We need a quick summary of top-performing pizzas by revenue and size for tomorrow's board meeting!
- Provide a quick list of the top 3 least-performing pizzas by category and size.
- Can we get a count of orders that were placed during weekends vs weekdays to discuss operational adjustments?
- Generate a summary of peak order times for each day of the week for scheduling staff shifts more effectively.

Budgeting Constraints

- What if we could only promote three pizzas—how would you decide which ones?
- Assume the company needs to reduce costs by 10% on ingredient procurement. Which ingredients should be prioritized, and why?
- If we can only run a promotional offer on one size of pizza, which size should it be based on current trends?
- What if we had to discontinue one pizza category due to rising costs? Suggest the least impactful category.

We're excited to see the insights you uncover and the value your analysis will bring to our business!

Signed

Stakeholder

Pizza Company

Team