Pizza Sales Analysis
(With SQL)

Crust to Crumbs: Exploring Pizza Sales Data, Unveiling Sales Insights & Trends

Presented By- Binoy Patra

CONTENTS

01. Introduction

❖ In the dynamic and competitive landscape of the food industry, understanding customer preferences and revenue drivers is crucial for maximizing profitability and maintaining a competitive edge.

❖ This project delves into the realm of pizza sales analysis, leveraging a comprehensive dataset encompassing orders, pizza types, ingredients, sizes, and pricing.

❖ By scrutinizing this wealth of information, we aim to uncover valuable insights tha illuminate patterns in customer behavior and operational efficiency.

❖ Armed with these insights, businesses can make informed decisions to tailor menus, optimize pricing strategies, and streamline operations, ultimately enhancing customer satisfaction and profitability in the fiercely competitive pizza market.

02. Objective

❖ Gain deep insights into customer preferences for pizza types, sizes, and categories.

❖ Identify key revenue drivers and understand their impact on overall profitability.

❖ Explore trends in order patterns by day, hour, and month to inform operational strategies.

❖ Recommend data-driven approaches for menu optimization, pricing strategies, and operational efficiency improvements.

❖ Provide actionable insights that enable businesses to maximize profitability, delight customers, and maintain a competitive advantage in the pizza market.
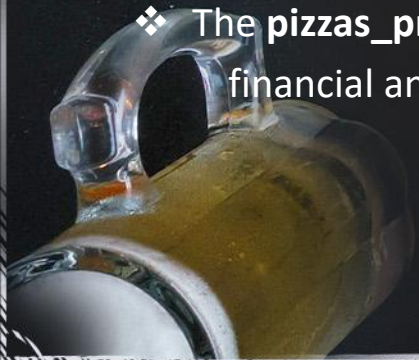
03. Dataset Overview

❖ The dataset for this project comprises four interconnected tables:
**orders, pizza_types, order_details, and pizzas_price.**

The dataset's structure is designed to capture a comprehensive view of the pizza ordering process:

❖ The **orders** table records the overarching details of each order, such as the date and time.

❖ The **pizza_types** table details the various pizzas offered, including their names, categories, and ingredients.

❖ The **order_details** table provides a breakdown of each order, specifying the types and quantities of pizzas ordered.

❖ The **pizzas_price** table links each pizza type to its size and price, enabling detailed financial analysis.

03. Dataset Overview

❖ Data Model and Relationships:
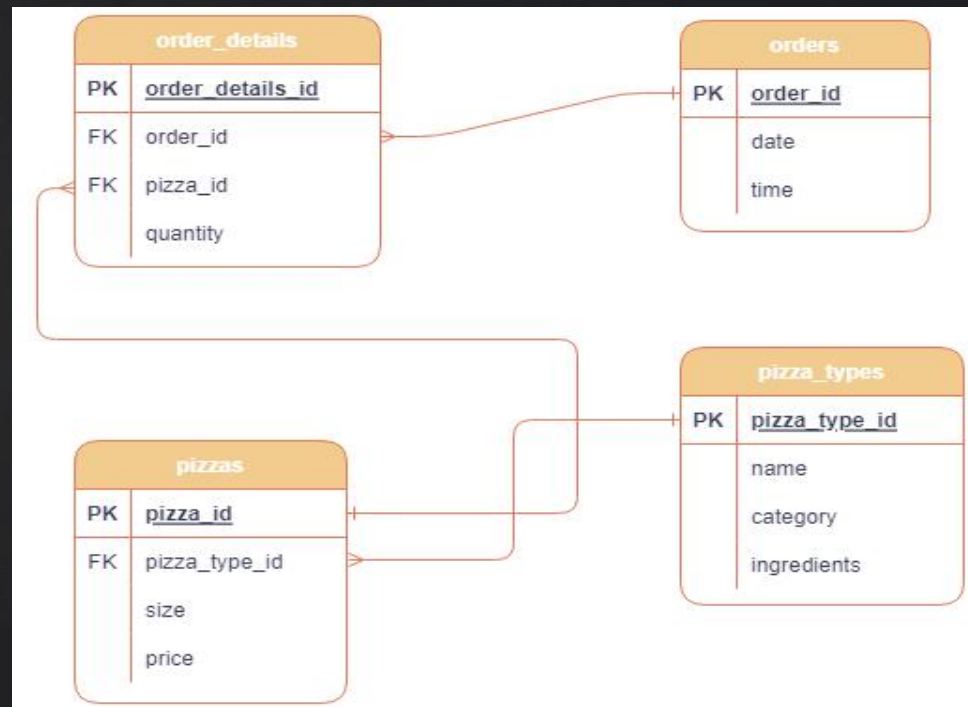
04. Key Findings

1. Total Orders : 21350
2. Total Revenue : $817860.05
3. Total Pizza Quantity Sold : 49574
4. Average Order Quantity (per tranaction) : 2.32
5. Average Order Amount (per tranaction) : $38
6. Unique Pizza Types : 32
7. Unique Pizza Sizes : 5 (S-Small, M-Medium,L-Large, XL- Extra Large, XXL: Double Extra Large)
8. Unique Pizza Categories : 4 (Chicken, Classic, Supreme, Veggie)
9. Category-wise distribution of pizzas:

>   Supreme: 9 Types
>   Veggie: 9 Types
>   Classic: 8 Types
>   Chicken: 6 Types

10. Highest Priced Pizza: The Greek Pizza, $35.95
11. Lowest Priced Pizza: The Pepperoni Pizza, $9.75
12. Average Quantity Sold Per Day: 138
13. Average Revenue Per Day: $2285

Pizza Size-wise Summary

Pizza_Size	Total_Order	Total_Quantity	Revenue
L	18526	18956	375319
M	15385	15635	249382
S	14137	14403	178076
XL	544	552	14076
XXL	28	28	1007

Pizza_Size	Size_wise_Revenue	Total_Revenue	Percent_Contribution(%)
L	375318.7	817860	45.9
M	249382.2	817860	30.5
S	178076.5	817860	21.8
XL	14076	817860	1.7
XXL	1006.6	817860	0.1

Insights:

1. The Large (L) pizzas dominate the sales, contributing 45.9% to the total revenue, with 18,526 orders and generating $375,319.

2. Medium (M) pizzas follow, with 30.5% revenue contribution and 15,385 orders.

3. Small (S) pizzas also make a significant impact with 21.8% of total revenue from 14,137 orders.

4. Extra Large (XL) and Double Extra Large (XXL) pizzas have minimal contributions, with a combined revenue share of only 1.8%.

This suggests a strong customer preference for larger-sized pizzas.

Pizza Category-wise Summary

Pizza_Category	Total_Order	Total_Quantity	Revenue
Classic	10859	14888	220053
Supreme	9085	11987	208197
Chicken	8536	11050	195920
Veggie	8941	11649	193690

Pizza_Category	Category_wise_Revenue	Total_Revenue	Percent_Contribution (%)
Classic	220053.1	817860.1	26.9
Supreme	208197	817860.1	25.5
Chicken	195919.5	817860.1	24
Veggie	193690.5	817860.1	23.7

Insights:

1. The Classic category leads both in terms of total orders (10,859) and revenue (220,053.1 Rupees), contributing the highest percentage (26.9%) to the total revenue.

2. Supreme pizzas follow, with 9,085 orders and 208,197 Rupees in revenue, contributing 25.5% to the total revenue.

3. Chicken pizzas come next, with 8,536 orders generating 195,919.5 Rupees in revenue, accounting for 24% of the total revenue.

4. The Veggie category has 8,941 orders and generates 193,690.5 Rupees in revenue, contributing 23.7% to the total revenue.

Pizza Type-wise Summary

Pizza_Type	Total_ORDER	Total_Quantity	Revenue
Top 5			
The Thai Chicken Pizza	2315	2371	43434
The Barbecue Chicken Pizza	2372	2432	42768
The California Chicken Pizza	2302	2370	41410
The Classic Deluxe Pizza	2416	2453	38180
The Spicy Italian Pizza	1887	1924	34831
Bottom 5			
The Spinach Pesto Pizza	957	970	15596
The Mediterranean Pizza	923	934	15360
The Spinach Supreme Pizza	940	950	15278
The Green Garden Pizza	987	997	13956
The Brie Carre Pizza	480	490	11588

Insights:

1. The Thai Chicken Pizza leads in revenue, generating $43,434 from 2,315 orders, followed closely by the Barbecue Chicken Pizza with $42,768 from 2,372 orders.

2. Popular choices such as the California Chicken Pizza and the Classic Deluxe Pizza also show strong performance with revenues of $41,410 and $38,180, respectively.

3. Conversely, pizzas like the Brie Carre Pizza, despite their unique offerings, contribute the least to overall revenue, suggesting a clear preference for specific popular varieties among customers.

Hourly Order Summary

Hour	Number_of_Order
9	1
10	8
11	1231
12	2520
13	2455
14	1472
15	1468
16	1920
17	2336
18	2399
19	2009
20	1642
21	1198
22	663
23	28

Insights:

1. Peak ordering hours are from 11 AM to 1 PM, with a sharp increase, reaching the highest at 12 PM with 2520 orders.

2. There is another significant rise from 5 PM to 6 PM with 2399 orders at 6 PM, likely due to dinner time.

3. Minimal orders are observed early in the morning (9 AM to 10 AM) and late at night (10 PM to 11 PM).

Monthly Order Summary

Months	Number_of_Order
January	1845
February	1685
March	1840
April	1799
May	1853
June	1773
July	1935
August	1841
September	1661
October	1646
November	1792
December	1680

Insights:

1. The orders are relatively consistent throughout the year, with slight peaks in July (1935 orders) and May (1853 orders).

2. September (1661 orders) and October (1646 orders) had the lowest number of orders, suggesting a potential seasonal dip.

Weekday Order Summary

Days	Number_of_Order
Sunday	2624
Monday	2794
Tuesday	2973
Wednesday	3024
Saturday	3158
Thursday	3239
Friday	3538

Insights:

1. Friday (3538 orders) and Thursday (3239 orders) see the highest number of orders, indicating a trend towards increased end-of-week dining.

2. Saturday (3158 orders) and Wednesday (3024 orders) also show strong order volumes.

3. The least orders are placed on Sunday (2624 orders), suggesting lower demand at the start of the week.

Best 3 Pizza of Each Category

Pizza_Category	Pizza_Name	Revenue	Ranking
Chicken	The Thai Chicken Pizza	43434	1
Chicken	The Barbecue Chicken Pizza	42768	2
Chicken	The California Chicken Pizza	41410	3
Classic	The Classic Deluxe Pizza	38180	1
Classic	The Hawaiian Pizza	32273	2
Classic	The Pepperoni Pizza	30162	3
Supreme	The Spicy Italian Pizza	34831	1
Supreme	The Italian Supreme Pizza	33477	2
Supreme	The Sicilian Pizza	30940	3
Veggie	The Four Cheese Pizza	32266	1
Veggie	The Mexicana Pizza	26781	2
Veggie	The Five Cheese Pizza	26066	3

Insights:

The Thai Chicken Pizza, Classic Deluxe Pizza, Spicy Italian Pizza, and Four Cheese Pizza lead their respective categories in revenue, showcasing customer preferences for both unique and traditional flavors.
Each category's top three pizzas significantly contribute to overall sales, highlighting key products that drive business success.

07. Conclussion

Our comprehensive pizza sales analysis reveals critical insights into customer preferences and revenue drivers.

1. Large pizzas dominate the market, contributing 45.9% to the total revenue, followed by medium and small sizes.

2. Popular pizza types like the Thai Chicken, Classic Deluxe, and Spicy Italian generate the highest revenues, reflecting strong customer preferences for specific flavors.

3. Weekday analysis indicates Friday as the peak day for orders, while noon to early afternoon (11 AM - 1 PM) sees the highest order volume.

4. Category-wise, Classic pizzas lead in sales, closely followed by Supreme and Chicken pizzas. Understanding these trends allows us to optimize our menu, pricing, and marketing strategies, ultimately enhancing customer satisfaction and maximizing profitability.

08. Reccomendations

1. Menu Optimization:
- ❖ Promote top-selling pizzas like Thai Chicken, Classic Deluxe, and Spicy Italian to maximize revenue.
- ❖ Expand the variety of large-sized pizzas to cater to customer preferences and increase sales volume.

2. Marketing Enhancements:
- ❖ Increase marketing efforts during peak times (noon to early afternoon) and high-traffic days (especially Fridays) to capitalize on demand surges.
- ❖ Implement targeted promotions and discounts mid-week to stimulate sales on slower days.

3. Pricing Strategy:
- ❖ Evaluate pricing strategies for top-performing pizzas, considering modest increases to leverage their popularity while maintaining customer satisfaction.
- ❖ Introduce bundle deals or meal combinations featuring popular pizzas to encourage larger transactions.

08. Reccomendations

4. Customer Engagement:

❖ Launch loyalty programs or rewards focused on frequent buyers of popular pizza categories (e.g., Classic, Supreme, Chicken) to foster customer loyalty.

❖ Solicit customer feedback on favored pizzas to innovate and introduce new variants or limited-time offers based on preferences.

5. Operational Efficiency:

❖ Optimize operational workflows during peak hours with adequate staffing and streamlined processes to handle high order volumes effectively.

❖ Explore advanced order options or reservations to manage peak periods efficiently and enhance overall customer experience.

THANK YOU

Dataset Credit: [Maven Analytics](#)
LinkedIn: [Binoy Patra](#)
GitHub: [Binoy Patra](#)
Special Thanks: Ayushi Jain