

# A Data Analytics Report

# **Pizza Analytics & Dashboard**

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## Tools Used

1. Microsoft Excel  
Version Office 365
2. Microsoft SQL Server 2022 (RTM)  
Version 16.0.1000.6 (X64)
3. SQL Server Management Studio (SSMS)  
Version 19.1
4. Visual Studio Code  
Version 1.80.1
5. Power BI Desktop  
Version 2.119.870.0 (23.07) (x64)
6. Snipping Tool  
Version 11.2304.21.0

## The Setting

This dynamic dashboard showcases in-depth insights on pizza sales performance, best-selling pizzas, and the least popular sellers. It includes comprehensive daily and monthly trends for total orders, accompanied by the percentage of sales by pizza category and size. Additionally, the top and bottom 5 pizzas based on revenue, quantity, and order count are presented to identify top performers and areas for improvement.

### Data Sources:

- SQL Queries: The dashboard findings are generated from carefully crafted SQL queries, providing accurate and up-to-date data analysis.
- Power BI Report: The Power BI report complements the SQL queries, enriching the visualization of insights and enhancing the overall user experience.

With the combined power of SQL queries and the intuitive Power BI report, the Pizza Sales Insights Dashboard offers a comprehensive and actionable view of the pizza sales landscape, empowering decision-makers to make data-driven choices for business growth and success.

## Problem Statements

The objective of this analysis is to examine key indicators for our pizza sales data to gain valuable insights into our business performance. Specifically, we aim to calculate the following metrics:

## KPIs

1. Total Revenue
2. Average Order Value
3. Total Pizzas Sold
4. Total Orders
5. Average Pizza per Order

## Charts

1. **Daily Trend for Total Orders:** Create a bar chart to display the daily trend of total orders over a specific time period. This chart will help identify patterns or fluctuations in order volumes on a daily basis.
2. **Monthly Trend for Total Orders:** Create a line chart illustrating the hourly trend of total orders throughout the day. This chart will reveal peak hours or periods of high order activity.
3. **Percentage of Sales by Pizza Category:** Generate a pie chart to show the distribution of sales across different pizza categories. This chart will provide insights into the popularity of various pizza categories and their contribution to overall sales.
4. **Percentage of Sales by Pizza Size:** Create a pie chart representing the percentage of sales attributed to different pizza sizes. This chart will help understand customer preferences for pizza sizes and their impact on sales.
5. **Total Pizzas Sold by Pizza Category:** Develop a funnel chart presenting the total number of pizzas sold for each pizza category. This chart will facilitate a comparison of the sales performance of different pizza categories.
6. **Top 5 Best Sellers by Revenue, Total Quantity, and Total Orders:** Construct a bar chart highlighting the top 5 best-selling pizzas based on revenue, total quantity, and total orders. This chart will reveal the most popular pizza options.
7. **Bottom 5 Best Sellers by Revenue, Total Quantity, and Total Orders:** Design a bar chart showcasing the bottom 5 worst-selling pizzas based on revenue, total quantity, and total orders. This chart will help identify underperforming or less popular pizza options.

## SQL Queries and Outputs

### ● KPIS

#### SQL Queries

1. **Total Revenue from Pizza Sales**  
SELECT SUM(total\_price) as 'Total Revenue'  
FROM [PizzaDB].[dbo].[pizza\_sales];
2. **Average Order Value of Pizza Sales**  
SELECT SUM(total\_price) /  
COUNT(DISTINCT order\_id) as 'Avg Order Value'  
FROM [PizzaDB].[dbo].[pizza\_sales];
3. **Total Pizza Sold**  
SELECT SUM(quantity) as 'Total Pizza Sold'  
FROM [PizzaDB].[dbo].[pizza\_sales];
4. **Total Orders from Pizza Sales**  
SELECT COUNT(DISTINCT order\_id) as 'Total Orders'  
FROM [PizzaDB].[dbo].[pizza\_sales];
5. **Average Pizza Per Order from Pizza Sales**  
SELECT CAST( CAST(SUM(quantity) as DECIMAL(10,2) )  
/ CAST( COUNT(DISTINCT order\_id) as DECIMAL(10,2))  
as DECIMAL (10,2)) as "Average Pizza's Per Order"  
FROM [PizzaDB].[dbo].[pizza\_sales];

#### SQL Outputs

	Total Revenue
1	817860.050838...

	Avg Order Value
1	38.30726233435459

	Total Pizza Sold
1	49574

	Total Orders
1	21350

	Average Pizza's Per Order
1	2.32

## • Charts

### 1. Daily Trend for Total Orders

```
SELECT      DATENAME(dw, order_date) as Order_Day,
            COUNT (DISTINCT order_id) as Total_Orders
FROM        [PizzaDB].[dbo].[pizza_sales]
GROUP BY    DATENAME(dw, order_date)
ORDER BY    2 DESC;
```

	Order_Day	Total_Orders
1	Friday	3538
2	Thursday	3239
3	Saturday	3158
4	Wednesday	3024
5	Tuesday	2973
6	Monday	2794
7	Sunday	2624

### 2. Monthly trend for Total Orders

```
SELECT      DATENAME(MONTH, order_date) as
Month_Name,
            COUNT (DISTINCT order_id) as Total_Orders
FROM        [PizzaDB].[dbo].[pizza_sales]
GROUP BY    DATENAME(MONTH, order_date)
ORDER BY    2 DESC;
```

	Month_Name	Total_Orders
1	July	1935
2	May	1853
3	January	1845
4	August	1841
5	March	1840
6	April	1799
7	November	1792
8	June	1773
9	February	1685
10	December	1680
11	September	1661
12	October	1646

### 3. Percentage of Sales by Pizza Category

```
SELECT      pizza_category,
            100* sum(total_price) / (select sum(total_price)
            from [PizzaDB].[dbo].[pizza_sales])
            as '% of Sales'
FROM        [PizzaDB].[dbo].[pizza_sales]
GROUP BY    pizza_category
ORDER BY    2 DESC;
```

	pizza_category	% of Sales
1	Classic	26.91
2	Supreme	25.46
3	Chicken	23.96
4	Veggie	23.68

4. **Percentage of Sales by Pizza Size**

```
SELECT      pizza_size,
            100* sum(total_price) / (select sum(total_price)
                                   from [PizzaDB].[dbo].[pizza_sales])
            as '% of Sales'
FROM        [PizzaDB].[dbo].[pizza_sales]
GROUP BY    pizza_size
ORDER BY    2 DESC;
```

	pizza_size	% of Sales
1	L	45.89
2	M	30.49
3	S	21.77
4	XL	1.72
5	XXL	0.12

5. **Percentage of Sales by Pizza Size for 1st QTR - Not Shown in Power BI**

```
SELECT      pizza_size,
            100* sum(total_price) / ( select sum(total_price)
                                   from PizzaDB].[dbo].[pizza_sales]
                                   WHERE DATEPART(QUARTER, order_date) = 1)
            as '% of Sales'
FROM        [PizzaDB].[dbo].[pizza_sales]
WHERE       DATEPART(QUARTER, order_date) = 1
GROUP BY    pizza_size
ORDER BY    2 DESC;
```

	pizza_size	% of Sales
1	L	46.37431...
2	M	29.78280...
3	S	22.10092...
4	XL	1.601899...
5	XXL	0.140053...

6. **Top and Bottom 5 Best Sellers by Revenue, Total Quantity and Total Orders**

a. **Top 5 by Revenue**

```
SELECT      TOP 5 pizza_name,
            SUM(total_price) AS Revenue
FROM        [PizzaDB].[dbo].[pizza_sales]
GROUP BY    pizza_name
ORDER BY    2 DESC;
```

	pizza_name	Revenue
1	The Thai Chicken Pizza	43434.25
2	The Barbecue Chicken Pizza	42768
3	The California Chicken Pizza	41409.5
4	The Classic Deluxe Pizza	38180.5
5	The Spicy Italian Pizza	34831.25

**b. Bottom 5 by Revenue**

```
SELECT      TOP 5 pizza_name,
            SUM(total_price) AS Revenue

FROM        [PizzaDB].[dbo].[pizza_sales]

GROUP BY    pizza_name

ORDER BY    2 ASC;
```

	pizza_name	Revenue
1	The Brie Carre ...	11588.4998130...
2	The Green Gar...	13955.75
3	The Spinach Su...	15277.75
4	The Mediterran...	15360.5
5	The Spinach Pe...	15596

**c. Top 5 by Quantity**

```
SELECT      TOP 5 pizza_name,
            SUM(quantity) AS Total_Qty

FROM        [PizzaDB].[dbo].[pizza_sales]

GROUP BY    pizza_name

ORDER BY    2 DESC;
```

	pizza_name	Total_Qty
1	The Classic Deluxe Pizza	2453
2	The Barbecue Chicken Pizza	2432
3	The Hawaiian Pizza	2422
4	The Pepperoni Pizza	2418
5	The Thai Chicken Pizza	2371

**d. Bottom 5 by Revenue**

```
SELECT      TOP 5 pizza_name,
            SUM(quantity) AS Total_Qty

FROM        [PizzaDB].[dbo].[pizza_sales]

GROUP BY    pizza_name

ORDER BY    2 ASC;
```

	pizza_name	Total_Qty
1	The Brie Carre Pizza	490
2	The Mediterranean Pizza	934
3	The Calabrese Pizza	937
4	The Spinach Supreme Pizza	950
5	The Soppressata Pizza	961

**e. Top 5 by Orders**

```
SELECT      TOP 5 pizza_name,
            COUNT(DISTINCT order_id) as Orders

FROM        [PizzaDB].[dbo].[pizza_sales]

GROUP BY    pizza_name

ORDER BY    2 DESC;
```

	pizza_name	Orders
1	The Classic Deluxe Pizza	2329
2	The Hawaiian Pizza	2280
3	The Pepperoni Pizza	2278
4	The Barbecue Chicken Pizza	2273
5	The Thai Chicken Pizza	2225

**f. Bottom 5 by Orders**

```
SELECT      TOP 5 pizza_name,
            COUNT(DISTINCT order_id) as Orders

FROM        [PizzaDB].[dbo].[pizza_sales]

GROUP BY    pizza_name

ORDER BY    2 ASC;
```

	pizza_name	Orders
1	The Brie Carre Pizza	480
2	The Mediterranean Pizza	912
3	The Spinach Supreme Pizza	918
4	The Calabrese Pizza	918
5	The Chicken Pesto Pizza	938

**7. Table for Analysis - This table shows 'Revenue', 'Number of Pizzas Sold', and Total Orders by Date and Time Slot grouping - Not used for Power BI**

```

SELECT      order_date, DATENAME(dw, order_date) AS Weekday,
            CASE
            WHEN Order_Time BETWEEN '09:00:00' AND '12:00:00' THEN 'Morning'
            WHEN Order_Time BETWEEN '12:01:00' AND '15:00:00' THEN 'Lunch_Time'
            WHEN Order_Time BETWEEN '15:01:00' AND '17:00:00' THEN 'Late_Afternoon'
            WHEN Order_Time BETWEEN '17:01:00' AND '21:00:00' THEN 'Rush_Hour'
            WHEN Order_Time BETWEEN '21:01:00' AND '23:59:00' THEN 'Closing_Time'
            ELSE 'Other' END AS Time_Slot, SUM(total_price) AS Revenue,
            SUM(quantity) AS 'Total Pizza Sold',
            COUNT(DISTINCT order_id) AS 'Total Orders'
FROM        [PizzaDB].[dbo].[pizza_sales]
GROUP BY    order_date, DATENAME(dw, order_date),
            CASE
            WHEN Order_Time BETWEEN '09:00:00' AND '12:00:00' THEN 'Morning'
            WHEN Order_Time BETWEEN '12:01:00' AND '15:00:00' THEN 'Lunch_Time'
            WHEN Order_Time BETWEEN '15:01:00' AND '17:00:00' THEN 'Late_Afternoon'
            WHEN Order_Time BETWEEN '17:01:00' AND '21:00:00' THEN 'Rush_Hour'
            WHEN Order_Time BETWEEN '21:01:00' AND '23:59:00' THEN 'Closing_Time'
            ELSE 'Other' END;

```

**Preview Table**

	order_date	Weekday	Time_Slot	Revenue	Total Pizza Sold	Total Orders
1	2015-01-01	Thursday	Closing_Time	179	11	5
2	2015-01-01	Thursday	Late_Afternoon	382.75	23	11
3	2015-01-01	Thursday	Lunch_Time	1086.45...	65	24
4	2015-01-01	Thursday	Morning	105.25	6	2
5	2015-01-01	Thursday	Rush_Hour	960.400...	57	27
6	2015-01-02	Friday	Closing_Time	319.5	21	9
7	2015-01-02	Friday	Late_Afternoon	351	23	8
8	2015-01-02	Friday	Lunch_Time	757.950...	45	16
9	2015-01-02	Friday	Morning	87.25	5	4
10	2015-01-02	Friday	Rush_Hour	1216.20...	71	30
11	2015-01-03	Saturday	Closing_Time	329.450...	18	9





## Insights and Conclusion

- **BUSIEST DAYS & TIME**

Pizza orders peak on weekends, specifically Friday and Sunday evenings.

- **SALES PERFORMANCE**

**CATEGORY:** The Classic category generates the highest revenue.

**SIZE:** Large Pizza size contributes the most to total revenue.

- **BEST SELLERS**

**REVENUE:** The Thai Chicken Pizza is the top revenue generator.

**QUANTITY:** The Classic Deluxe Pizza is the most sold pizza by quantity.

**ORDERS:** The Classic Deluxe Pizza receives the highest number of orders.

- **WORST SELLERS**

**REVENUE:** The Brie Carre Pizza is the lowest revenue-generating pizza.

**QUANTITY:** The Brie Carre Pizza has the lowest quantity sold.

**ORDERS:** The Brie Carre Pizza records the least number of orders.

In conclusion, this analysis reveals valuable insights into the sales performance of pizza categories, sizes, and specific pizza types. The Classic category and Large Pizza size are the primary contributors to revenue. The Thai Chicken Pizza, as the best seller, significantly impacts both revenue and customer preference. On the other hand, the Brie Carre Pizza shows room for improvement as it performs poorly in terms of revenue, quantity, and order frequency. The provided insights can guide strategic decisions to optimize sales and maximize profitability in the pizza business.

