Pizza Sales Data Analysis Report

Summary:-

The data analysis report provides insights into a year's worth of sales from a pizza place. The data includes the date and time of each order, as well as details on the pizzas served, such as type, size, quantity, price, and ingredients. The report also identified areas for potential improvement. Additionally, optimizing pricing strategies could potentially increase sales. Overall, the data analysis provides valuable insights into pizza sales trends, which can inform future business decisions and strategies for the pizza place.

Problem And Background:-

The main problem that the pizza place is facing is a decline in sales and revenue and tracking issues with customer traffic and peak hour timing and also has not taken properly track their pizza orders, bestsellers pizzas. That's why the pizza place wants to analyse the data collected over the past year to identify the underlying causes and find ways to increase profitability and opportunities for improvement.

Recommended analysis:-

1) How many customers do we have each day? Are there any peak hours?

2) How many pizzas are typically in order? Do we have any bestsellers?

3) How much money did we make this year? Can we identify any seasonality in the sales?

4) Are there any pizzas we should take off the menu, or any promotions we could leverage?

Datasets given:- Data is given in 4 tables with columns

1) Pizza- | Pizza_id, Pizza_name, Size, Price |

2) Pizza_type- | Pizza_id, Pizza_type, Ingredient |

3) Order- | Order_id, Date, Time |

4) Order_details- | Order_details_id, Order_id, Pizza_id, Quantity

Background:- The background is Microsoft Excel. It's a widely-used software program that can be used to analyze data.

The pizza place is a popular pizza restaurant that specializes in freshly made pizzas with a variety of toppings. The pizza place restaurant has built a loyal customer base. However, the pizza places have noticed a decline in sales and revenue over the past year and are looking for ways to optimize their operations and increase profitability.

To address these challenges, the pizza place has decided to analyse its sales data and customer behaviour to identify opportunities for improvement. The pizza place restaurant has collected data on customer orders, sales revenue, and customer feedback over the past year and has created an Excel spreadsheet to organize and analyzed this data.
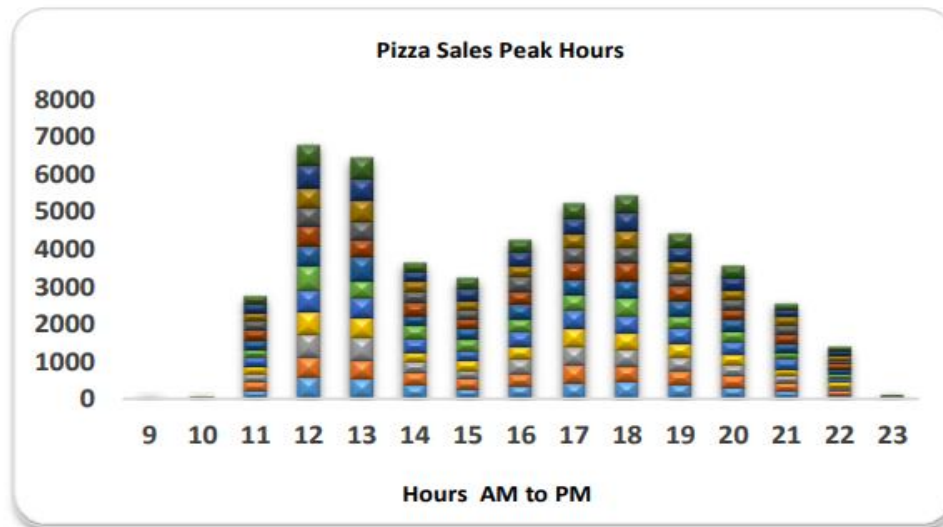
The pizza place aims to analyse this data in Excel to identify patterns and trends in customer behaviour, optimize its menu and pricing strategies, and improve overall sales and profitability. By using data driven insights to make informed business decisions, the pizza place can offer high-quality pizzas to its customers while increasing its revenue and profitability.

Solution: There are some solutions to help analyze data of the pizza place sales using Excel. There are a few steps:

1) **How many customers do we have each day? Are there any peak hours?**

   To track the number of customers visiting the pizza place daily and identify peak hours. The 'Orders' table is used. By counting the number of order quantities made each day and time, the pizza place has estimated the number of customers visiting the place. Pivot tables have been created to

group the data by date and time, making it easy to identify peak hours and fluctuations in demand throughout the day and visualize them in charts.

Pizza Sales Peak Hours

(Chart: Stacked bar chart showing pizza sales by hour from 9 to 23, labeled "Hours AM to PM", with y-axis from 0 to 8000)

Trends and Causes:-

1. Lunch-time orders: The peak hour for orders being between 12-01 pm could be due to many customers ordering pizza for lunch, possibly from nearby offices or schools.

2. Dinner-time orders: The second peak hour for orders being between 06-07 pm could be due to many customers ordering pizza for dinner, possibly from nearby hostels or any house functions.

3. Customer traffic: The average number of customers per day being around 138 indicates that the pizza place has a consistent customer base, and this can help them plan their inventory and resources accordingly.
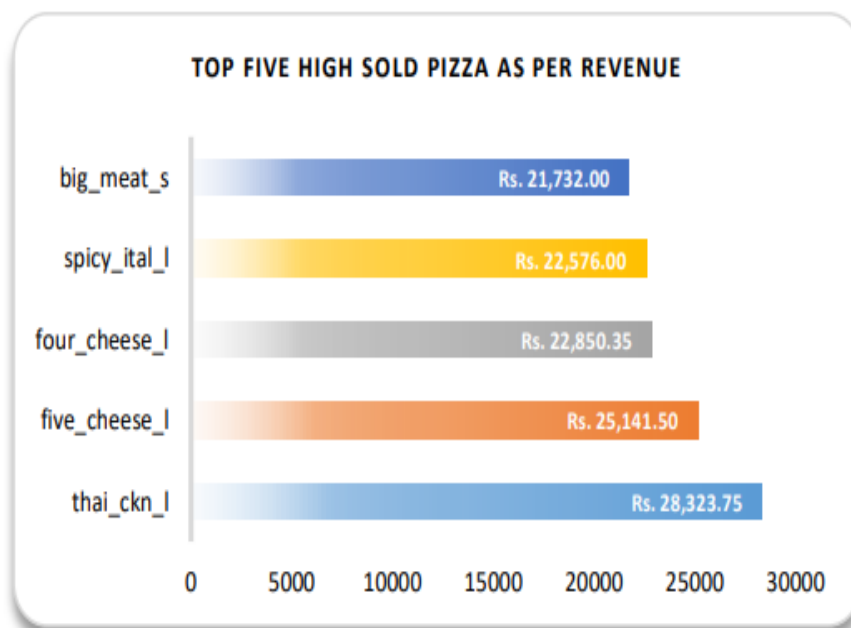
Insights:

1. The first peak hour for orders is between 12 pm - 1 pm, which could suggest that many customers order pizza for lunch, and the second peak hour for orders is between 06 pm – 07 pm, which could suggest that evening customers order pizza for dinner.

2. On average, around 138 customers order pizza each day, which provides a rough estimate of the pizza place's daily sales.
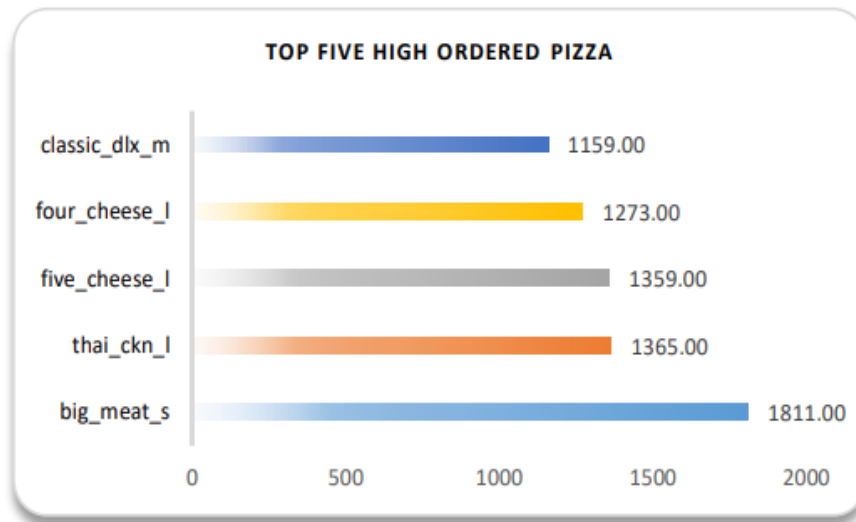
Recommendations:

Concentrate on the lunch and dinner sales: The peak hour for orders is between 12 pm - 01 pm and 05 pm – 06 pm, the pizza place could concentrate on promoting its lunch and dinner time menu to attract more customers during this time. This could include offering lunch and dinner specials or quick lunch and dinner options.

2) **How many pizzas are typically in order? Do we have any bestsellers?**

To identify the bestsellers and determine whether there are any pizzas that should be taken off the menu, the Pizza Place can analyse its order details table data in Excel. By aggregating the number of times each pizza was ordered, the restaurant can identify its most popular pizzas and adjust its menu accordingly. Pivot tables have be used to group the data by pizza, order quantity and sales as per price (revenue), making it easy to identify the bestsellers and most popular items.

TOP FIVE HIGH SOLD PIZZA AS PER REVENUE

Pizza	Revenue
big_meat_s	Rs. 21,732.00
spicy_ital_l	Rs. 22,576.00
four_cheese_l	Rs. 22,850.35
five_cheese_l	Rs. 25,141.50
thai_ckn_l	Rs. 28,323.75

TOP FIVE HIGH ORDERED PIZZA

Pizza	Value
classic_dlx_m	1159.00
four_cheese_l	1273.00
five_cheese_l	1359.00
thai_ckn_l	1365.00
big_meat_s	1811.00

Trends And Causes:-

Bestseller Pizzas: As per revenue the most sales pizza is thai_chn_l, and according to ordered the best seller pizza is big_meat_s.

Insights:-

1. As per high revenue generated bestseller pizza is thai_chn_l. The thai_chn_l pizza revenue is the ₹ 28,323.75, and also this pizza is give the most profit of the pizza place in this year.
2. As per high ordered bestseller pizza is big_meat_s. This big_meat_s pizza is 1811.00 time ordered, and this pizza is bestseller pizza of the pizza place in this year.
3. The top 5 bestsellers are: five_cheese_l, thai_chn_l, classic_dlx_m, four_cheese_l, and big_meat_s.

Recommendations:-

1. The top 5 bestsellers: The top 5 bestsellers pizzas generate the most sales (as per orders and revenue), the pizza place could consider promoting these pizzas more prominently on the menu or offering special deals on these pizzas to encourage customers to try them.

3) How much money did we make this year? Can we identify any seasonality in the sales?

To analyse sales and revenue over time and identify patterns and seasonality, the order details and order tables are used. By joining these tables on 'order_id', the restaurant can calculate the total revenue generated by each order and group the data by date to track sales over time. Pivot tables are used to analyse seasonal sales and identify trends and patterns.

MONTHS-WISE SALES AS PER ORDERS RATIO

Trends And Causes:-

1. Seasonality Sales: The month of July has the highest number of orders demanded, could be due to summer vacations, outdoor activities, and gatherings.
2. Special offers and promotions: If you offered any summer-themed specials or promotions during July, this could have contributed to your increased pizza sales.

Insights:

1. According to the highest number of pizza orders, July is the busiest month of the year. This could have increased demand due to various
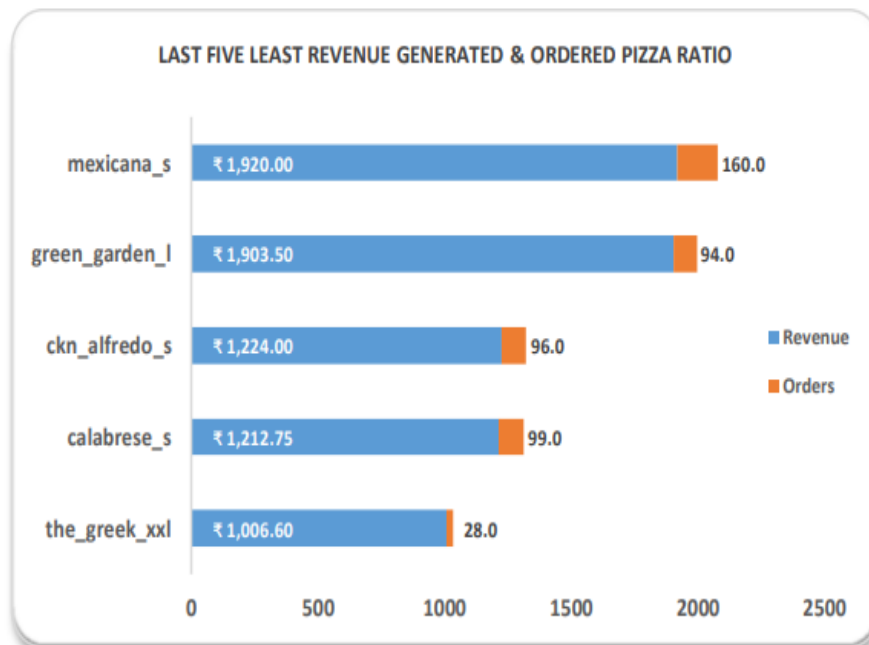
factors, such as summer holidays, special events or family functions, birthdays, etc.

Recommendations:

1. Expand pizza menu: If certain pizza toppings were particularly popular during July, consider adding these toppings to your regular menu offerings to attract more customers

4) Are there any pizzas we should take off the menu, or any promotions we could leverage?

To optimize the menu and promotions, the 'Pizza type' and 'Order details' tables are used. By joining these tables on Pizza_id, the pizza place has identified the most commonly ordered pizza types and as well as the least popular items. Customer feedback can also be analysed to understand which items are popular and which ones need improvement. Based on this information, the restaurant can make informed decisions about which items to promote or remove from the menu.

LAST FIVE LEAST REVENUE GENERATED & ORDERED PIZZA RATIO

Pizza	Revenue	Orders
mexicana_s	₹1,920.00	160.0
green_garden_l	₹1,903.50	94.0
ckn_alfredo_s	₹1,224.00	96.0
calabrese_s	₹1,212.75	99.0
the_greek_xxl	₹1,006.60	28.0

Trends and Causes:

1. Least sales pizzas: This year has been, the least sales (as per revenue - ₹ 1,006.60 and orders – 28.0) track record of the the_greek_xxl pizzas.

Insights:

1. According to the least number of pizza orders and revenue, the last five least sale pizzas are: mexicana_s, green_garden_l, ckn_alfredo_s, calabrese_s and the_greek_xxl.

Recommendations:

1. As per sales, the the_greek_xxl pizzas has been the least get sold this year. That's why the suggestion to the pizza place is to take off this pizza from the pizza menu.

Methodology & Project scope – Methodology:

The following steps for using typical methodology on your project:

1. Data collection: Collect the data from the given datasets like the date and time of each order, the pizzas orders, pizza id, type, size, quantity, and price.

2. Data cleaning and organizing: Cleaning and organizing the data in a suitable format, like some text formatted dates and time converting into the proper format, extracting the day, months, years, hours, and revenue from the datasets, and organizing them properly in the sheets for analysis.

3. Data analysis: Use descriptive statistics, pivot tables in the sheet, and with the help of excel, visualization tools to analyse and visualize the data through charts and graphs in the storytelling formats.

4. Insights: This analysis identifies patterns, trends, causes, and insights into pizza sales for more opportunities.

Project Scope:

The pizza sales analysis in Excel will depend on the specific needs, trends and goals of the project scope

1. The pizza sales are to analyse the sales data and gain insights into the customer's ordering behaviour and preferences. This analysis aims to identify patterns, trends, and causes of sales over a given period of time. The dataset will include information about the date and time of each order, the type, size, and quantity of pizzas ordered, as well as the price and revenue generated.

2. The analysis will help the pizza place to identify popular pizza types, sizes, and toppings, understand the busiest times of the day, week, and month, and determine the impact of promotions or discounts on sales.

3. The analysis will also help the pizza place to identify areas of improvement, such as customer service, delivery times, or menu offerings.

Goals & Key performance indicators (KPI) –

Goals:

The goal of the analysis is to gain insights into the sales performance of the pizza place and identify areas for improvement and growth opportunities. The analysis will answer the following questions:

Goal 1. How many customers do we have each day? Are there any peak hours?
Ans.:- Avg. 138 customers each day, and peak hours between- 12-01pm & 06-07pm.

Goal 2. How many pizzas are typically in an order? Do we have any bestsellers?
Ans.:- According to orders. The bestseller pizza is- big meat.

Goal 3. How much money did we make this year? Can we identify any seasonality in the sales?

 Ans.:- As per price, year 2015 revenue is ₹ 801944.70, and based on sales, the peak month is July.

Goal 4. Are there any pizzas we should take off the menu, or any promotions we could leverage?

Ans.:- As per revenue and orders, least sales pizza is- the_greek_xxl, as per to overview of the total year sales this pizza should take off from the menu.

Key performance indicators:

There are some key performance indicators used for the analysis.

KPI 1. Daily customer count and peak hours.

KPI 2. Average pizza count per order and bestseller pizzas.

KPI 3. Total revenue and seasonal revenue trends. KPI 4. Pizza popularity and menu optimization opportunities.

Concept Used –

There are some of the concepts used in this analysis are below:

1. Data collection: Collecting data from various sources, including databases or spreadsheets, for analysis.

2. Data cleaning and organizing: Cleaning the data by removing duplicates, fixing errors, and formatting data consistently. Organizing data in a structured manner for easy analysis.

3. Descriptive statistics: Using various statistical measures such as average, mean, hour, day, month, and price to describe and summarize the data.

4. Pivot tables: A powerful feature in Excel that allows for summarizing, sorting, and filtering large amounts of data quickly.

5. Data visualization: Using charts and graphs to visually represent the data and identify trends, patterns, and insights.

6. Sales analysis: Analysing sales data to identify patterns and trends, including customer behaviour, product popularity, and revenue generation.

7. Menu optimization: Analysing product sales data to identify under-performing pizzas, bestsellers, and opportunities for menu optimization.

8. Customer behaviour analysis: Analysing data related to the customer's ordering behaviour, such as peak hours, frequency, and average pizza count per order.

9. Seasonality analysis: Analysing data related to seasonal trends in pizza sales, such as monthly or yearly revenue.

10. Promotion effectiveness: Analysing data related to promotional discounts and their impact on sales.

Conclusion:-

According to the overall data analysis, the pizza sales analysis has helped to gain valuable insights into the sales performance of the pizza place. The analysis answered key questions such as peak hours, popular pizza types, seasonal trends, and menu optimization opportunities.

Key performance indicators such as daily customer count, bestsellers, and total revenue were used to measure the success of the pizza place. This project utilized concepts such as data collection, cleaning, organization, descriptive statistics, pivot tables, data visualization, sales analysis, menu optimization, customer behaviour analysis, seasonality analysis, and promotion effectiveness.

By identifying patterns and trends in pizza sales, the pizza place can make data-driven decisions to improve customer service, delivery times, menu offerings, and promotional strategies to improve its sales, revenue growth, and also achieve its business goals.

Project Owner-

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