COFFEE SHOP SALES DATA ANALYSIS

INTRODUCTION:

This coffee shop sales dataset (taken from Maven Analytics) includes sales parameters from a coffee shop in New York City. The purpose of this analysis is to gain insights into sales trends, product popularity, and customer behaviour patterns to optimize operations and potentially increase revenue.

DESCRIPTION:

- **transaction_id:** Unique sequential ID representing an individual transaction
- **transaction_date:** Date of the transaction (DD-MM-YYYY)
- **transaction_time:** Timestamp of the transaction (HH:MM:SS)
- **transaction_qty:** Quantity of items sold
- **store_id:** Unique ID of the coffee shop where the transaction took place
- **store_location:** Location of the coffee shop where the transaction took place
- **product_id:** Unique ID of the product sold
- **unit_price:** Retail price of the product sold
- **product_category:** Description of the product category
- **product_type:** Description of the product type
- **product_detail:** Description of the product detail

TRANSFORMATION:

- we have derived few columns for the requirement of analysis such as - **day_name, Hour, Total_price(transaction_qty*unit_price), day_of_week, Month, month_name** and **Size.**
- We have replaced values and reordered, renamed and changed the datatype few columns accordingly for our convenience of analysis

ANALYSIS:

- **Day wise total sales:** In chart number 1 This chart shows the total sales generated per day comparing other days.

- **Category wise Total Sales Distribution (%):** In chart number 2 this pie chart depicts the percentage breakdown of total sales produced by product category.
- **Total Quantity Sold hour wise:** In chart number 3 this chart illustrates how the total quantity of items sold varies throughout the day (hours).
- **Store wise Total Sales:** In chart number 4 this chart depicts how the revenue or sales is generating based on each store.
- **Top 5 Selling Products:** In chart number 5 this chart showcases the top five products in terms of total sales amount.
- **Size wise Quantity Distribution (%):** In chart number 6 this pie chart depicts the percentage breakdown of total quantity ordered based on the sizes.
- **Month wise Sales Generated:** In chart number 7 this chart shows us the month wise sales generated comparing other months.
- **Day wise Visitation:** In chart number 8 this chart shows us the number of customers visiting per day.
- **Hour wise Visitation:** In chart number 9 this chart shows number of customers visiting hourly in a day.

INSIGHTS:

Day Wise Total Sales:

- There appears to be a trend of lower sales on Saturdays and Sundays compared to weekdays.
- We are observing higher sales in the days before and after weekends.

Category wise Total Sales Distribution (%):

- Coffee and Tea are the dominant categories in terms of sales.
- Packaged Chocolates, Loose Tea and Flavours are the lowest selling categories.

Total Quantity Sold hour wise:

- We are observing sharp growth in terms of order quantity from 6 to 10 o clock.
- The order quantities decrease drastically after 10 o clock and until 11 o clock.
- After that we are observing 6 hours of constant performance.
- After 17 o clock the order quantity is decreasing.

Store wise Total Sales:

- Hell's kitchen is generating the highest revenue.
- Lower Manhattan is the lowest in terms of revenue generation.

Top 5 Selling Products:

- The top 5 selling products are from coffee, tea and drinking chocolate categories. Where coffee being the highest.

Size wise Quantity Distribution (%):

- We are observing almost similar distribution for every other category except small, which is only 9%.

Month wise Sales Generated:

- We have only six months data and we are observing a small negative growth in sales from January to February.
- We are observing a sharp growth of sales from February to May.
- From May to June the sales growth reduces but still managed to grow.

Day wise Visitation:

- We are observing lowest visitation in weekends.
- We are observing highest visitation on the day before and after weekend.

Hour wise Visitation:

- We are observing sharp growth in terms of visitation from 6 to 8 o clock.
- From 8 to 10 o clock the growth is minimal.
- Between 10 and 11 o clock there is a sharp decline in terms of visitation.
- After that we are observing 6 hours of constant amount of visitation.
- From 17 o clock we are observing gradual decline in terms of visitation.

FEW RECOMMENDATIONS:

- Considering the day before weekends sales trend and the dominance of coffee and tea as a category, the shop might benefit from optimized staff scheduling to ensure enough baristas are available to handle the higher customer traffic and orders during the day before weekends from 6 to 10 o clock specifically.

- We have to emphasize more and allocate more budget on coffee and tea and relatively less priority can be given to flavours, packaged chocolates and loose tea. We have to reallocate or spending accordingly.
- Since the data shows a significant peak in sales volume around 6 to 10 o clock, exploring the feasibility of offering pre-made or grab-and-go options for coffee or popular tea could help cater to customers in a hurry during this busy period.

CONCLUSION:

This comprehensive analysis provides valuable insights into various aspects of the coffee shop's sales data such as sales trends, customer behaviour patterns, and product popularity for the coffee shop. By implementing the suggested recommendations, exploring the areas for further investigation, and potentially conducting more granular analysis, the coffee shop can optimize operations, improve customer experience, potentially increase revenue, and gain a competitive edge.

LIMITATION:

The data is available for limited timeframe (we have only 6 months data). More observations could have helped us to do more granular analysis.