A REPORT ON ANALYSIS OF COFFEE SALES

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A REPORT ON ANALYSIS OF

COFFEE SALES FROM 01/03/24-22/01/25

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ABSTRACT

This dataset provides a comprehensive analysis of coffee sales, tracking various coffee types, transaction values, and the mode of payment used by customers. The data includes statistical calculations such as total sales, mean, median, mode, and correlation, aimed at uncovering trends within coffee sales and consumer preferences. The results highlight which coffee types are most popular, the total revenue generated, and the distribution of payment methods. Additionally, insights into the relationships between transaction values and coffee preferences are revealed, assisting businesses in optimizing their offerings and improving customer targeting strategies.

INTRODUCTION

The coffee sales data offers valuable insights into consumer behaviour and business performance within the coffee industry. This dataset captures various attributes, including coffee type, transaction value, and payment method, providing a detailed view of sales patterns. Key statistical measures, such as total sales, mean, median, and mode, are calculated to examine trends across different coffee products.

By exploring these metrics, businesses can gain a deeper understanding of which products generate the highest revenue and how payment preferences influence consumer purchasing decisions. This analysis serves as a basis for optimizing inventory, enhancing product offerings, and improving customer engagement strategies.

METHODOLOGY

The data collected from various coffee sales transactions was analyzed using statistical measures to uncover trends and patterns in consumer purchasing behavior. The dataset includes key attributes such as transaction date, payment method, coffee type, transaction value, and sales counts. The data was aggregated and analyzed by coffee type to derive meaningful insights.

Key steps in the methodology:

Data Aggregation: The data was grouped by coffee type to calculate total sales, total items sold, and other relevant metrics such as transaction value. This step involved aggregating the values in the 'money' and 'COUNT OF ITEMS' columns for each unique coffee type.

Statistical Analysis: The following statistical measures were computed:

- SUM (Total Sales): The total revenue generated from each coffee type.
- MEAN (Average Transaction Value): The average value per transaction for each coffee type.
- MODE (Most Frequent Transaction Value): The most common transaction value for each coffee type.
- MEDIAN (Middle Value): The middle value of the transaction amounts for each coffee type.
- CORRELATION: Analyzing the correlation between transaction value and the number of items sold.
- Visualization: The data was visualized using bar charts to display the total sales and item counts for each coffee type, providing a clearer understanding of the relative performance of each product.

FINDINGS AND ANALYSIS

Total Sales (SUM):

- The total revenue generated from the top coffee types varies significantly. For example, the Latte and Americano with Milk have the highest total sales, generating $38,734.50 and $38,574.60, respectively.

- The coffee type Hot Chocolate also contributes significantly, generating $25,598.10 in total sales, indicating a high demand for this beverage.

Count of Items Sold:

- The Latte coffee type was the most sold item, with 663 items sold, followed closely by Americano with Milk at 674 items.

- On the other hand, beverages like Cortado and Americano have lower counts, at 274 items and 347 items, respectively.

Average Transaction Value (MEAN):

- The average transaction value varies across the coffee types. The Latte had an average transaction value of $38.70, consistent across various entries.

- Hot Chocolate also maintains a similar average transaction value of $38.70, while Americano with Milk has a slightly lower average of $32.82.
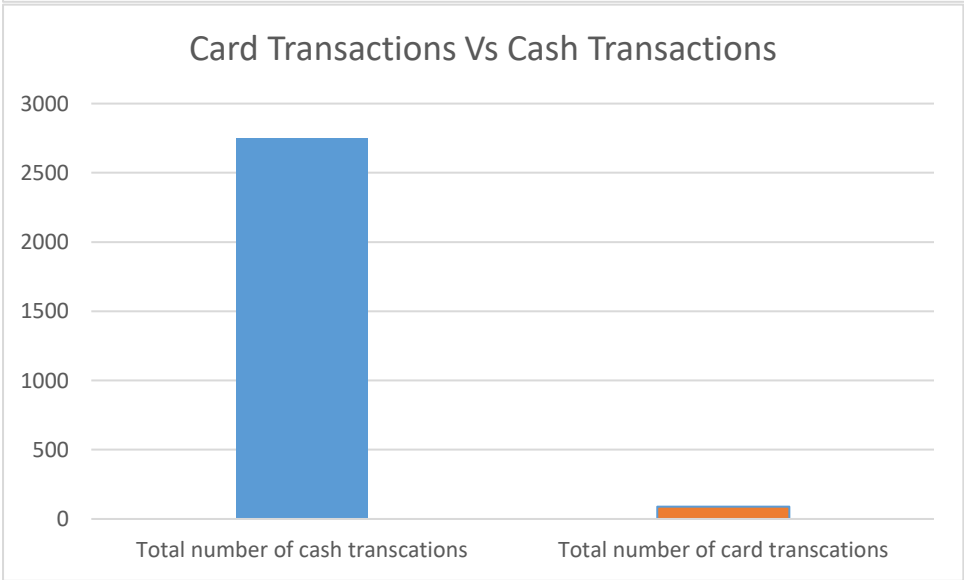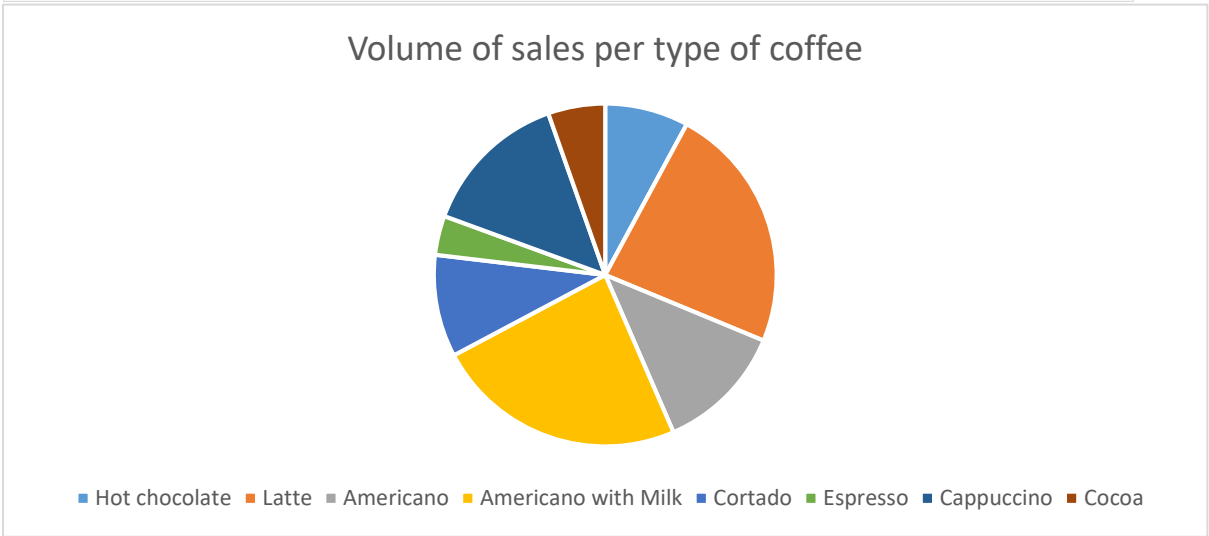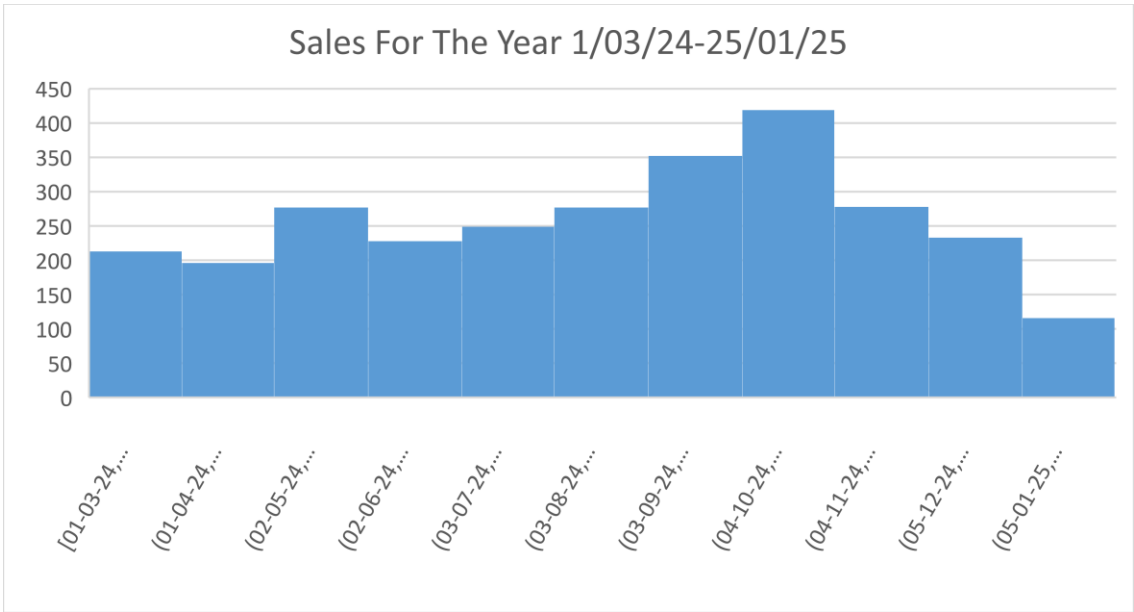
Most Frequent Transaction Value (MODE):

- The most frequent transaction value was $35.76, indicating a standard price point for a large portion of the transactions.

- Other coffee types, such as Americano and Cortado, showed varied transaction values but with relatively frequent occurrences around $32.82 and $33.65, respectively.

Correlation Analysis:

The correlation between transaction amounts and the number of items sold was found to be weak, with a correlation coefficient of -0.14. This suggests that there is little to no direct relationship between the number of items sold and the transaction value.

GRAPHS

Sales For The Year 1/03/24-25/01/25

Volume of sales per type of coffee

Legend: ■ Hot chocolate ■ Latte ■ Americano ■ Americano with Milk ■ Cortado ■ Espresso ■ Cappuccino ■ Cocoa

Card Transactions Vs Cash Transactions

Total number of cash transcactions | Total number of card transcactions

DISCUSSION

Popular Coffee Types:

- The most popular coffee types based on both total sales and item count are Latte, Americano with Milk, and Hot Chocolate. These beverages consistently perform well in terms of both revenue and volume.
- It is interesting to note that Latte and Americano with Milk generate significant sales with almost identical transaction values, reflecting consistent customer demand for these products.

Pricing Strategy:

The data shows that most transactions occur around the $35-$40 range, which is likely the standard pricing point for many coffee types. This suggests that coffee businesses should consider maintaining pricing consistency within this range, ensuring that customers perceive good value without compromising profitability.

Consumer Preferences:

Despite the relatively consistent transaction values, some variations in coffee preferences are apparent. Hot Chocolate, though a non-caffeinated option, also shows significant sales, indicating a broader range of consumer tastes that go beyond the typical coffee preferences.

Correlation between Sales and Items Sold:

The weak correlation between transaction value and the number of items sold suggests that higher sales volumes do not necessarily translate into higher transaction values. This may imply that promotions, bundle offers, or smaller-sized servings might influence the number of items sold, while price points have less of an impact on overall revenue.

Opportunities for Optimization:

Given the insights from the total sales and item counts, coffee businesses might consider focusing more on promoting their high-performing beverages like Latte and Americano with Milk. Special deals or loyalty programs could be introduced to further increase the volume of sales for these popular items.

For coffee types with lower sales, such as Cortado, businesses might want to evaluate consumer feedback and potentially introduce incentives or marketing strategies to boost sales of these underperforming products.

CONCLUSION

The analysis of the coffee sales dataset provides key insights into consumer preferences and business performance, revealing significant trends across various coffee types, transaction values, and payment methods. The findings highlight that popular coffee types such as Latte and Americano with Milk consistently drive high sales volumes and revenue, while beverages like Hot Chocolate also show strong demand. The analysis further uncovers a weak correlation between the number of items sold and transaction values, suggesting that factors beyond pricing influence consumer purchasing decisions.

Businesses in the coffee industry can leverage these insights to refine their pricing strategies, optimize product offerings, and target high-demand coffee types. Furthermore, by focusing on promotions and loyalty programs for popular products, and re-evaluating strategies for underperforming beverages, coffee shops can enhance their sales performance and better align with consumer preferences.

Overall, this analysis serves as a foundation for improving business practices, optimizing inventory, and ensuring that customer engagement remains strong, ultimately leading to increased revenue and long-term success.

REFERENCES

Coffee Data Sales - YAROSLAV ISAIENKOV

https://www.kaggle.com/datasets/ihelon/coffee-sales