

Coffee sales Analysis

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Project Summary

This project analyzes coffee shop sales data to uncover patterns in customer behavior and business performance. The dataset contain details such as sale ID, coffee name, cash type, amount spent, hour of the day, time of day, weekday, and month. Additional features such as weekday order, month order, and translation date-time were also included to support time-based analysis.

The analysis explores when customers buy the most (by hour, time of day, weekday, and month) and which coffee products generate the highest revenue. It also examines payment preferences and overall sales distribution. Charts and insights were created to present the findings in a clear and actionable way. Based on the results, recommendations are provided to improves sales strategies and optimize store operations.

Dataset Description

- Sale ID – Unique identifier for each transaction.
- Coffee Name – Type of coffee purchased.
- Cash Type – Payment method used (cash, card, etc.).
- Money – Total amount of the transaction.
- Hour of Day – The exact hour when the transaction occurred.
- Time of Day – Categorized as morning, afternoon, evening.
- Weekday – Day of the week (e.g., Monday, Tuesday).
- Month Name – Month of the year (e.g., January, February).
- Weekday Order – Numeric value for day order (1-7).
- Date and Time – Timestamp of the transaction.

Analysis and Key Findings

- **Sales by time of Day :** Most sales occurred in the morning hours (10am – 12pm), highlighting strong demand during breakfast time.
- **Sales by Weekday:** Tuesday and Wednesday recorded the highest revenue, while Sunday had the lowest sales.
- **Top products:** Cappuccino and Latte were the most purchased items, contributing significantly to total revenue.
- **Payment Methods:** A majority of customers preferred card payments over cash.
- **Monthly Trends:** Sales peaked in March, while August showed the lowest performance.

Conclusion and Recommendations

The analysis of coffee shop sales data highlights clear customer behavior patterns. Sales peaks during morning hours (10am – 12pm) and were strongest on Tuesdays and Wednesdays, while Sundays recorded the lowest revenue. Cappuccino and Latte were the top-selling products, and card payments were the most preferred method. March showed the highest monthly sales, whereas August had the lowest.

Based on these insights, it is recommended to introduce weekday promotions to balance sales, and to design special offers on Sundays to attract more customers. Focusing on popular drinks like Cappuccino and Latte, while adding seasonal product variations, can help increase customer engagement and overall sales performance.