

Coffee Vending Machine Sales Analysis

Executive Summary

Overview:

- This analysis is based on a coffee vending machine dataset found on Kaggle. The intention of this analysis is to determine sales trends, customer preferences and product sales across months.
- **Dataset Description:** The dataset spans from March 1st to August 17th, covering 169 days of transactions.
- **Data Collection:** Data was collected from a coffee vending machine, capturing details such as product type, sales value, and payment method.

Key takeaways:

- **Top Products:** The top product by aggregate value of sales is Latte, with over \$10.30k in total sales and an average value of \$36.48. Latte is closely followed by Americano with milk, which has a total sales value of \$10.03k and an average of \$31.42.
- **Payment Preferences:** Most customers prefer paying via card rather than cash.
- **Customer Insights:** A notable customer with card number ANON-0000-0000-0012 purchased over 96 products within the dataset's timeframe. The major portion of sales generated by this customer was on Americano (\$1.2k) in April, with a total sales value of \$2.77k.
- **Least Sold Products:** The least sold products are Hot Chocolate, Cocoa, and Espresso. Despite falling sales, Hot Chocolate sales may increase during the holiday season due to seasonality.
- **Sales Trends:** There is a steady customer preference for Latte, with sales peaking at 10 AM, reaching a total of \$1.95k.

Conclusion:

- **Summary of Findings:** The analysis reveals that Latte and Americano with milk are the top-selling products, with a preference for card payments among customers. Customer ANON-0000-0000-0012 significantly contributes to sales, particularly for Americano.

Recommendations:

- **Promotional Strategies:**
 - **Seasonal Promotions:** Given the potential for increased sales of Hot Chocolate during the holiday season, running special promotions or discounts on Hot Chocolate around Christmas and New Year will help regain customer interest in the product. This could include holiday-themed marketing campaigns or bundled offers with other popular products.
 - **Loyalty Programs:** Implementing a loyalty program to reward frequent customers, especially those who prefer paying via card. This could encourage repeat purchases and increase overall sales.
- **Product Focus:**
 - **Highlight Top Sellers:** Focus marketing efforts on promoting Latte and Americano with milk, as these are the top-selling products. Use targeted advertisements and in-store promotions to highlight these popular choices.
 - **Menu Optimization:** Consider optimizing the menu to feature the top-selling products more prominently. This could include placing them at the top of the menu or creating special sections for customer favorites.
- **Payment Options:**
 - **Enhance Card Payment Experience:** Since most customers prefer paying via card, ensure that card payment options are readily available and efficient. This could involve upgrading payment terminals or offering contactless payment options to enhance the customer experience.
 - **Promote Cashless Transactions:** Encourage cashless transactions by offering small discounts or incentives for customers who pay via card. This can streamline the payment process and reduce handling of cash.
- **Customer Engagement:**
 - **Personalized Offers:** Use the data on customer preferences to create personalized offers and promotions. For example, customers who frequently purchase Americano could receive special discounts or loyalty points for their favorite product.
 - **Feedback Mechanism:** Implement a feedback mechanism to gather customer opinions on products and services. This can help identify areas for improvement and enhance customer satisfaction.

Future Work:

- **Further Analysis:** Future analysis could explore customer demographics to better understand purchasing behavior.
- **Data Collection:** Collect more recent data to provide updated insights into current sales trends.
- **Additional Metrics:** Analyze additional metrics such as customer satisfaction and product feedback to enhance the understanding of customer preferences.