



Coffee Machine Analysis Report

Overview

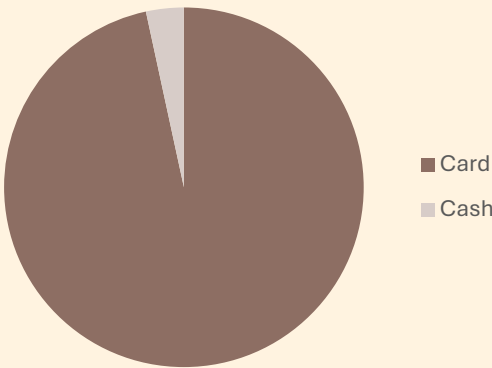
The data was collected from a coffee machine set up in someplace in Ukraine at the period from 1st Mars, 2024 to 23rd December 2024, so that the data will flow according to the Ukrainian date, time, environmental condition and currency. The source of the data is Kaggle website, provided by **Yaroslav Isaienkov**, last time updated on 25th December 2024. Data size was **2623 rows**. The data was cleaned, analyzed and presented in a dashboard by **Ahmed Galaa** using **Microsoft excel** software. These insights include the total revenue made by the machine during the period provided, the month with the most revenue, the top method used to pay, the top type of coffee sold by revenue and frequency, the time of the day that was active the most on the day and even the most loyal customers to the machine. The report will include data insights, visualization and recommendations for further improvements.

Payment methods

According to the data, it was clear that the customers prefer using card payment more than cash with an estimate value of **2534 times** of using card and **89 times** of using cash payment.

Recommendations

It is recommended to focus on the card payment method, making it user-friendly and reliable so that it becomes easier for the customers to use their preferred method of payment.



Revenue

The machine has made about **UAH 83k** in a period of 9 months and 23 days as revenue for selling

the different types of coffee products. The month of the most selling was October with **UAH 14k**, and the least was April with **UAH 6.7k**. The coffee type that made revenue the most was **“Latte”** made **22k** and then the **“Americano with milk”** made **19k**.

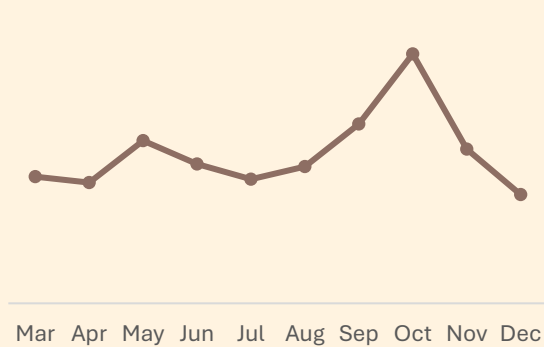
Recommendations

Focus on cost-effective approaches by making discounts on high-performance products like Latte and Americano with milk, this helps keep customer loyalty and increase the frequency of machine working as well as the revenue.

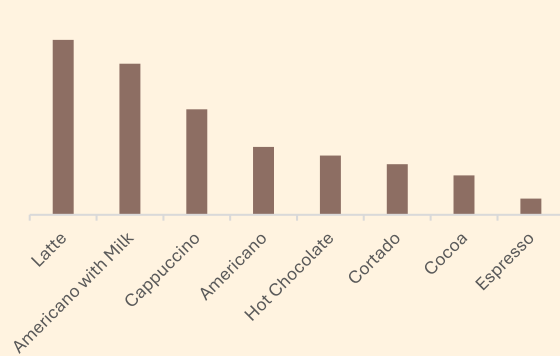
count	2623
mean	31.889478
std	5.015394
min	18.12
25%	27.92
50%	32.82
75%	35.76
max	40



Machine Activity per Month



Total Revenue per Coffee



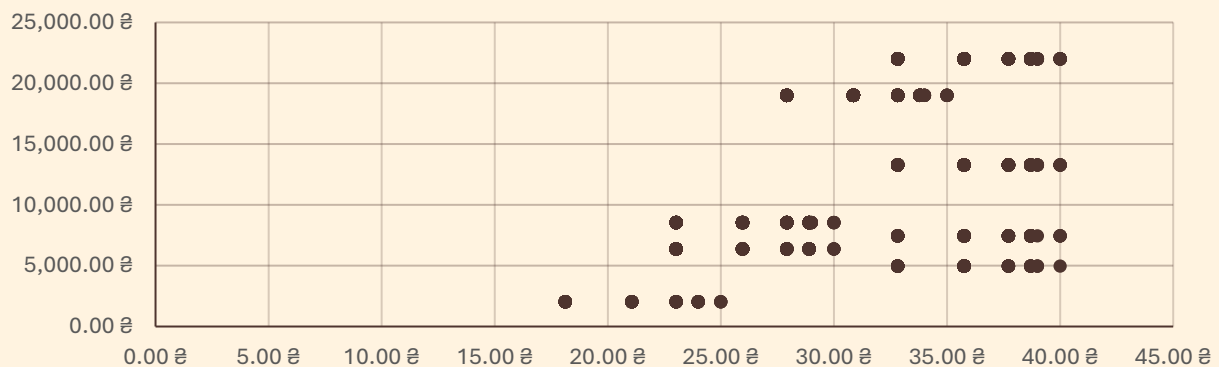
Analyze the reasons behind October's higher sales and April's lower sales to adapt marketing or product strategies. For example, emphasize warm and comforting beverages during colder months.

Important tables related to coffee prices

Average Coffee Prices	
Hot Chocolate	36.19 €
Cappuccino	36.08 €
Cocoa	35.68 €
Latte	35.60 €
Americano with Milk	30.60 €
Americano	26.14 €
Cortado	25.78 €
Espresso	20.98 €

Revenues of Coffee	
Latte	22,001.66 €
Americano with Milk	19,004.54 €
Cappuccino	13,278.06 €
Americano	8,546.30 €
Hot Chocolate	7,454.70 €
Cortado	6,366.66 €
Cocoa	4,959.12 €
Espresso	2,035.06 €

Relationship between revenue per coffee and total revenue



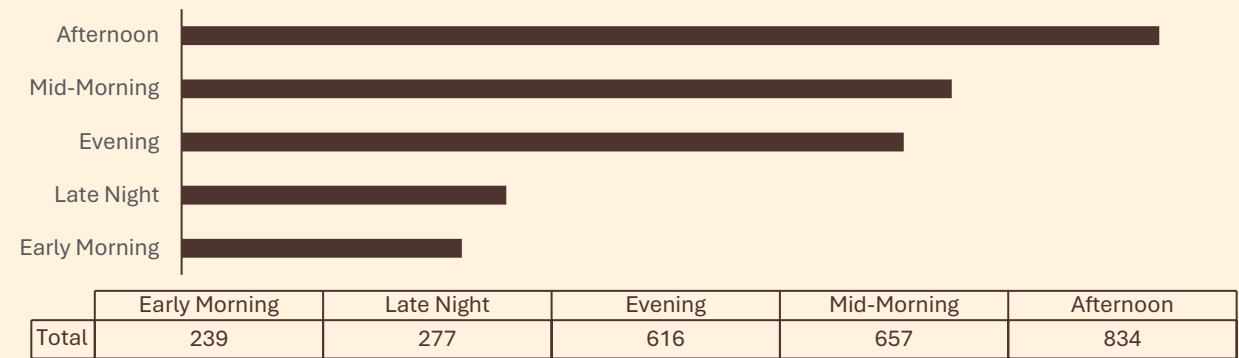
The chart shows **no relationship** between the revenue per coffee and total revenue with a **correlation coefficient = 0.429321**



Time Analysis

Day hours were put into multiple bins to show at what time of the day people use the coffee machine; there were 6 bins as follows:

Bin	From	To
Early morning	4:00 am	8:59 am
Mid-morning	9: 00 am	11:59 am
Afternoon	12:00 pm	4:59 pm
Evening	5:00 pm	8:59 pm
Night	9:00 pm	11:59 pm
Late night	12:00 am	3:59 am



There were no purchases recorded at the time of night for the whole

Recommendations

It’s critical to maximize the availability of the most popular types (e.g., Latte, and Americano with milk) from the mid-morning to the afternoon to make sure that the coffee is enough to cover all the customers’ needs at these times.

Since early morning consumption is the least, consider scheduling the coffee machine to enter a low-power or standby mode during early hours to save energy and reduce costs.

Introduce targeted promotions (e.g., discounted coffee) for evening and late-night hours to encourage more consumption during these periods, especially as people may seek warm beverages to cope with colder weather.

Additional Insights

From the analysis of the recorded card payments, we noticed that we have highly loyal customers, which by using a unique code related to the card info, we may make them offers and discounts that keeps their loyalty, and here they are:

