

## **Project Title: Analysis of coffee shop sales over the course of days and months**

### **Introduction:**

**Objectives:** This project was intended to find valuable insights on the trend of sales between the different coffee types within different days of the week, month and over the course of the year.

I had to find out which coffee type **sells** more, which **time** of the day more coffee is **bought**, which **day** of the week is more coffee sold and also which hours of the day had the highest sales.

I got the dataset(Coffee shop sales) from **Kaggle**.

### **Scope: Boundaries of the Project**

The project focuses on analyzing a coffee shop sales dataset to derive insights that can enhance business operations and customer satisfaction. The analysis will be conducted within the following boundaries:

- **Dataset description:** The coffee shop sales dataset included the following:
  - 1) **Hour of the day:** This gave the different hours of the day each coffee was sold with respect to the different days
  - 2) **Cash type:** This stated the preferred method of payment by the different customers
  - 3) **Money:** This was the cost price for the different coffee types sold
  - 4) **Time of the day:** This was categorized into Morning, afternoon and evenings. This was to show which time of the day the coffee was bought
  - 5) **Weekdays and month\_name:** This showed the different days and months of purchase
  - 6) **Date and time:** Gave the exact timestamp the transactions took place
- **Time frame:** This dataset has sales records as of 2024 and 2025

### **Data analyzed:**

- **Sales Performance:**
  - Total sales over the analyzed period
  - Total sales per coffee type over the analyzed period
  - Total sales per month
  - Average sales over the analyzed period
  - Average sales per coffee type
  - Average sales per weekday

- Average sales per month
- Customer Insights:
- Purchase preference
  - Payment method preference
- Operational Metric:
- Highest selling days
  - Highest selling months
  - Peak selling hours

## Data preparations

Looking at the dataset gotten from Kaggle, It required no further cleaning.

## Tools used

- I used Postgres database for Data exploration
- Power Bi for data Visualisation

## Some SQL Queries involved:

### 1) Highest selling coffee type:

---

```
select "coffee_name", count("coffee_name")
from public.coffee
group by "coffee_name"
order by count("coffee_name") DESC
```

---

	coffee_name text	count_of_coffee bigint
1	Americano with Milk	809
2	Latte	757
3	Americano	564
4	Cappuccino	486
5	Cortado	287
6	Hot Chocolate	276
7	Cocoa	239

2) Average amount for each unique coffee:

---

```
select distinct "coffee_name",cast(avg(money) as DECIMAL(10,2)) as avg_sales  
from public.coffee  
group by "coffee_name"  
order by avg_sales DESC
```

---

	coffee_name text	avg_sales numeric (10,2)
1	Hot Chocolate	35.99
2	Cappuccino	35.88
3	Cocoa	35.65
4	Latte	35.50
5	Americano with Milk	30.59
6	Americano	25.98
7	Cortado	25.73

- 3) To get the total sales per year, had to extract the year from the date column and store in a new column called "year",  
then do an aggregation to the money column filtering it by the year
- 

```
alter table public.coffee  
add column "year"
```

```
UPDATE public.coffee  
SET "year" = EXTRACT(YEAR FROM "date");
```

```
select cast(sum("money") as DECIMAL(10,2)) as total_sold  
from public.coffee  
where "year" = 2024
```

	<b>total_sold</b> numeric (10,2) 
1	82644.80

- 4) Total amount for each coffee type sold during a year:
- 

```
select distinct "coffee_name",cast(sum(money) as DECIMAL(10,2)) as total_sales
from public.coffee
where "year" = 2024
group by "coffee_name"
order by total_sales ASC
```

---

	<b>coffee_name</b> text 	<b>total_sales</b> numeric (10,2) 
1	Latte	21439.78
2	Americano with Milk	18918.58
3	Cappuccino	13076.42
4	Americano	8316.02
5	Hot Chocolate	7430.26
6	Cortado	6502.22
7	Cocoa	4945.16

- 5) Time of the day with highest purchase of coffee:
- 

```
select "time_of_day",count("coffee_name")
from public.coffee
group by "time_of_day"
order by "time_of_day" ASC
```

---

	time_of_day text	count bigint
1	Afternoon	1205
2	Morning	1181
3	Night	1161

6) Distinct weekdays with highest sale:

---

```
select distinct "weekday", cast(sum("money") as DECIMAL(10,2)) as amount
from public.coffee
group by "weekday"
order by amount DESC
```

	weekday text	amount numeric (10,2)
1	Tue	18168.38
2	Mon	17363.10
3	Fri	16802.66
4	Thu	16091.40
5	Wed	15750.46
6	Sat	14733.52
7	Sun	13336.06

}

7) Peak selling hours:

---

```
select distinct "hour", cast(sum("money") as DECIMAL(10,2)) as amount
from public.coffee
group by "hour"
order by amount DESC
```

	hour integer	amount numeric (10,2)
1	10	10198.52
2	16	9031.84
3	11	8453.10
4	19	7751.96
5	17	7659.76
6	15	7476.02
7	12	7419.62

## Power BI dashboard:

### 1) Highest selling coffee

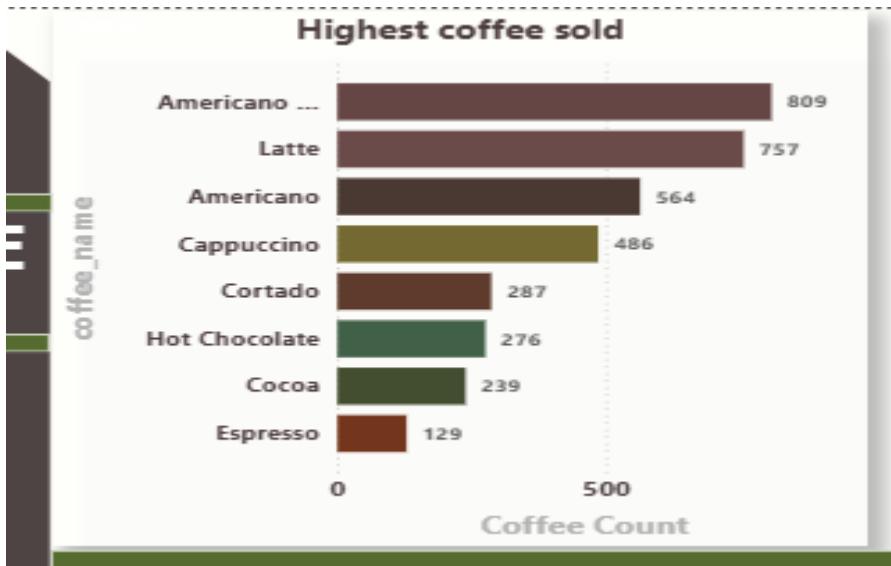


Figure 1

As seen in the figure above, it shows the highest coffee consumed within the calculated period of time. This shows that Aemericano with milk was the highest sold coffee while Espresso was the lowest consumed coffee.

### 2) Days with the highest sale:



*Figure 2*

The above figure shows that the highest day with coffee sale was Tuesday and the least was Sunday. It is worth noting that Tuesdays had the highest sales amount and Sunday the least

### 3) Time of day with highest coffee count:



*Figure 3*

Afternoons had the highest sales and the nights had the least sales.

### 4) Monthly data



Figure 4

The figure above shows the monthly sales statistics. It shows us that the month of march had the highest sales and the least sales for the years came in April.

### 5) Summary stats

coffee_name	Sum of countofsales	Sum of Tsales	Sum of Asales	pay_type
Americano with Milk	809	24,751.12	30.59	card
Latte	757	26,875.30	35.50	card
Americano	564	14,650.26	25.98	card
Cappuccino	486	17,439.14	35.88	card
Cortado	287	7,384.86	25.73	card
Hot Chocolate	276	9,933.46	35.99	card
Cocoa	239	8,521.16	35.65	card
Espresso	129	2,690.28	20.85	card
<b>Total</b>	<b>3547</b>	<b>112,245.58</b>	<b>246.19</b>	

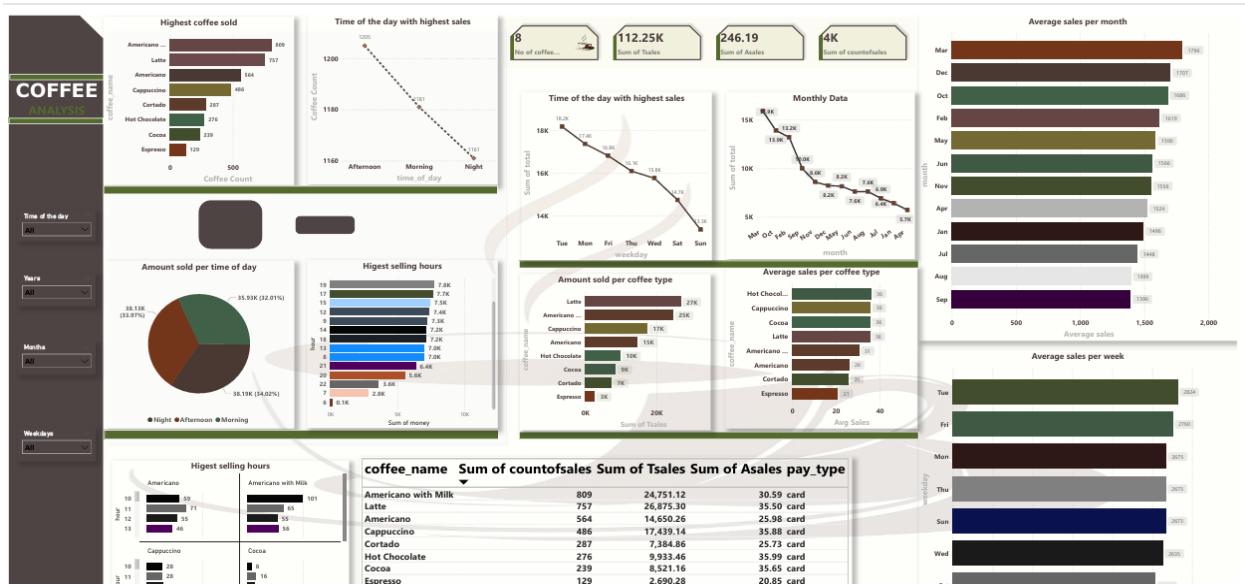
Figure 5

This figure above shows a general summary of the number of sales, average sales and the sum total per coffee type sold within the calculated period.

### Some Key Views:

- It shows the highest selling coffee type
- Shows the highest selling time of the day(Morning, Afternoon or evening)
- Shows which months and days have the highest sales

Below is an overall view of the entire dashboard:



There are filters which enables us to filter the information based on the time of the day, month, year and weekdays.

## Findings:

### Insights:

- The highest coffee sold according to the survey was Americano with milk of over **809** sales within that period amounting to over **25,000** dollars in making ranking second best in profits. Latte coffee follows second in terms of sales with over **757** sales and ranks first in total amount sold for that particular brand. The least sold coffee is espresso with less than 200 sales and less than 3000 dollars in sales amount.
- More sales were done within the afternoon period with sales ranging over 1205 per day which was seconded by sales in morning with over 1181 sales and lastly by the sales in the evenings. Contrastingly, amount sold in the evenings were more than that in the afternoon and lastly in the mornings.
- The highest days which had the highest amount sold per week averaged to be Tuesday with a sum of over 18,000 dollars and an average sale of over 2000 dollars. The highest month with the highest sale was March of over 15000 dollars averaging above 1500 dollars per month on sales.
- The highest selling hours were at 10HR with over 10.000 dollars in sale, 16HR, 11HR, 19HR in that order. The least selling hour was 6HR with sales reaching under 200 dollars. It also shows that our highest selling Coffee is sold at maximum within the 10HR mark.

**Recommendation:**

Looking at the above statistics, I will recommend:

- ✓ That more Americano with milk and the next 5 best after it be made available within the 10HR mark
- ✓ That Espresso should be removed from production since it yields vey minimum returns
- ✓ That production of coffee of any brand should be intensified in the morning and evenings since that is the time most people go to work and back from work