



Coffee Sales Performance Analysis

Project Report

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Tools Used: MS-Excel , Microsoft Power BI

Resume Project - Data Analyst Portfolio

Introduction

Over the past six months, The Coffee shop a fast-growing cafe chain in US with outlets in **Lower Manhattan, Hell's Kitchen, and Astoria** has seen thousands of transactions reflecting diverse customer habits across regions.

To evaluate performance and uncover trends, a detailed sales analysis was conducted using **Excel, Power BI, DAX** combining transactional data from January to June 2023.

The objective was to transform raw sales data into actionable insights using seven key performance indicators (KPIs):

1. **Total Revenue** – to measure overall business growth.
2. **Average Order Value (AOV)** – to assess customer spending habits.
3. **Revenue by Product Category** – to identify which beverages drive profits.
4. **Revenue by Location** – to compare outlet performance across cities.
5. **Top 5 Selling Products** – to highlight bestsellers that shape daily operations.
6. **Monthly Revenue Trends** – to uncover seasonal or time-based sales fluctuations.
7. **Average Sales per Hour** – to detect peak and off-peak customer hours.

Data Preparation

Source - <https://www.kaggle.com/datasets/keremkarayaz/coffee-shop-sales>

The dataset consists of transactional-level coffee shop sales data with columns such as Transaction ID, Transaction Date, Transaction Time, Transaction qty, Store ID, Store Location, Product Id, Unit price, Product Category, Product Type, Product detail.

Data Cleaning

In this dataset there are Total 11 columns and 149116 rows which was already cleaned.

Raw data file :

A1	transaction_id	transaction_date	transaction_time	transaction_type	store_id	store_location	product_id	unit_price	product_category	product_type	product_detail
	transaction_id	transaction_date	transaction_time	transaction_type	store_id	store_location	product_id	unit_price	product_category	product_type	product_detail
1	1	01-01-2023	07:06:11	2	5	Lower Manhattan	32	3	Coffee	Gourmet brewed coffee	Ethiopia Rg
2	2	01-01-2023	07:08:56	2	5	Lower Manhattan	57	3.1	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg
3	3	01-01-2023	07:14:04	2	5	Lower Manhattan	59	4.5	Drinking Chocolate	Hot chocolate	Dark chocolate Lg
4	4	01-01-2023	07:20:24	1	5	Lower Manhattan	22	2	Coffee	Drip coffee	Our Old Time Diner Blend Sm
5	5	01-01-2023	07:22:41	2	5	Lower Manhattan	57	3.1	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg
6	6	01-01-2023	07:22:41	1	5	Lower Manhattan	77	3	Bakery	Scone	Oatmeal Scone
7	7	01-01-2023	07:25:49	1	5	Lower Manhattan	22	2	Coffee	Drip coffee	Our Old Time Diner Blend Sm
8	8	01-01-2023	07:33:34	2	5	Lower Manhattan	28	2	Coffee	Gourmet brewed coffee	Columbian Medium Roast Sm
9	9	01-01-2023	07:39:13	1	5	Lower Manhattan	39	4.25	Coffee	Barista Espresso	Latte Rg

After : In which I removed the product_detail column which is not useful according to KPIs and also change the format of date in transaction_date column and add currency sign in unit_price column.

A	B	C	D	E	F	G	H	I	J
transaction_id	transaction_date	transaction_time	transaction_qty	store_id	store_location	product_id	unit_price	product_category	product_type
1	1	01 January 2023	07:06:11	2	5 Lower Manhattan	32	\$3.00	Coffee	Gourmet brewed coffee
2	2	01 January 2023	07:08:56	2	5 Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea
3	3	01 January 2023	07:14:04	2	5 Lower Manhattan	59	\$4.50	Drinking Chocolate	Hot chocolate
4	4	01 January 2023	07:20:24	1	5 Lower Manhattan	22	\$2.00	Coffee	Drip coffee
5	5	01 January 2023	07:22:41	2	5 Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea
6	6	01 January 2023	07:22:41	1	5 Lower Manhattan	77	\$3.00	Bakery	Scone
7	7	01 January 2023	07:25:49	1	5 Lower Manhattan	22	\$2.00	Coffee	Drip coffee
8	8	01 January 2023	07:33:34	2	5 Lower Manhattan	28	\$2.00	Coffee	Gourmet brewed coffee
9	9	01 January 2023	07:39:13	1	5 Lower Manhattan	39	\$4.25	Coffee	Barista Espresso
10	10	01 January 2023	07:39:34	2	5 Lower Manhattan	58	\$3.50	Drinking Chocolate	Hot chocolate
11	11	01 January 2023	07:43:05	1	5 Lower Manhattan	56	\$2.55	Tea	Brewed Chai tea
12	12	01 January 2023	07:44:35	2	5 Lower Manhattan	33	\$3.50	Coffee	Gourmet brewed coffee
13	13	01 January 2023	07:45:51	1	5 Lower Manhattan	51	\$3.00	Tea	Brewed Black tea
14	14	01 January 2023	07:48:19	1	5 Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea

Excel Analysis

1. To Find the Total Revenue – overall business performance across outlets.

Formula - =SUMPRODUCT(D2:D129117,H2:H149117)

L2	C	D	E	F	G	H	I	J	K	L	
	in_date	transaction_time	transaction_qty	store_id	store_location	product_id	unit_price	product_category	product_type	product_detail	Total Revenue
1	January 2023	07:06	2	5	Lower Manhattan	32	\$3.00	Coffee	Gourmet brewed coffee	Ethiopia Rg	\$6,98,812.33
2	January 2023	07:08	2	5	Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg	
3	January 2023	07:14	2	5	Lower Manhattan	59	\$4.50	Drinking Chocolate	Hot chocolate	Dark chocolate Lg	
4	January 2023	07:20	1	5	Lower Manhattan	22	\$2.00	Coffee	Drip coffee	Our Old Time Diner Blend Sm	

Insights – Total Revenue - \$6,98,812.33

2. To Find the Average Order Value (AOV) - average customer spending per order.

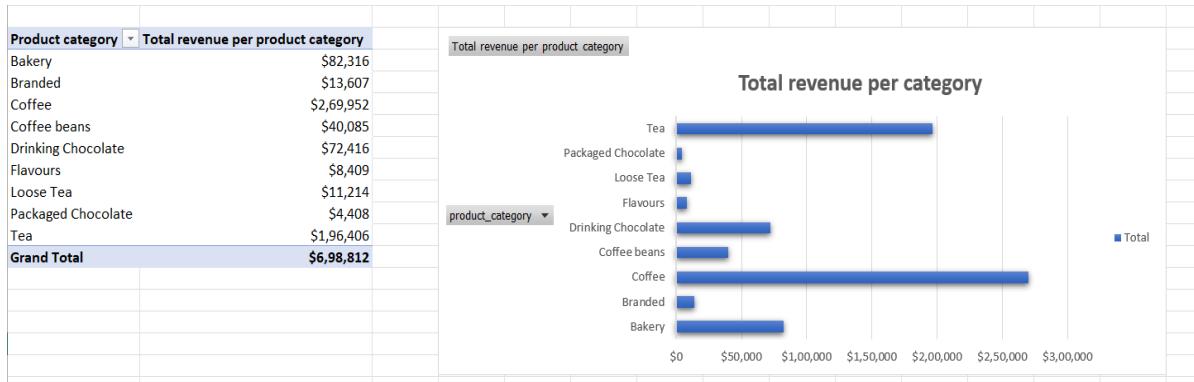
Formula - =SUMPRODUCT(D2:D149117,H2:H149117)/COUNTA(UNIQUE(A2:A149117))

M2	C	D	E	F	G	H	I	J	K	L	M	
	transaction_id	transaction_date	transaction_time	transaction_qty	store_id	store_location	product_id	unit_price	product_category	product_type	product_detail	Total Revenue Average order value
1	1	01 January 2023	07:06	2	5	Lower Manhattan	32	\$3.00	Coffee	Gourmet brewed coffee	Ethiopia Rg	\$6,98,812.33
2	2	01 January 2023	07:08	2	5	Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg	
3	3	01 January 2023	07:14	2	5	Lower Manhattan	59	\$4.50	Drinking Chocolate	Hot chocolate	Dark chocolate Lg	
4	4	01 January 2023	07:20	1	5	Lower Manhattan	22	\$2.00	Coffee	Drip coffee	Our Old Time Diner Blend Sm	
5	5	01 January 2023	07:22	2	5	Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg	
6	6	01 January 2023	07:22	1	5	Lower Manhattan	77	\$3.00	Bakery	Scone	Oatmeal Scone	
7	7	01 January 2023	07:25	1	5	Lower Manhattan	22	\$2.00	Coffee	Drip coffee	Our Old Time Diner Blend Sm	

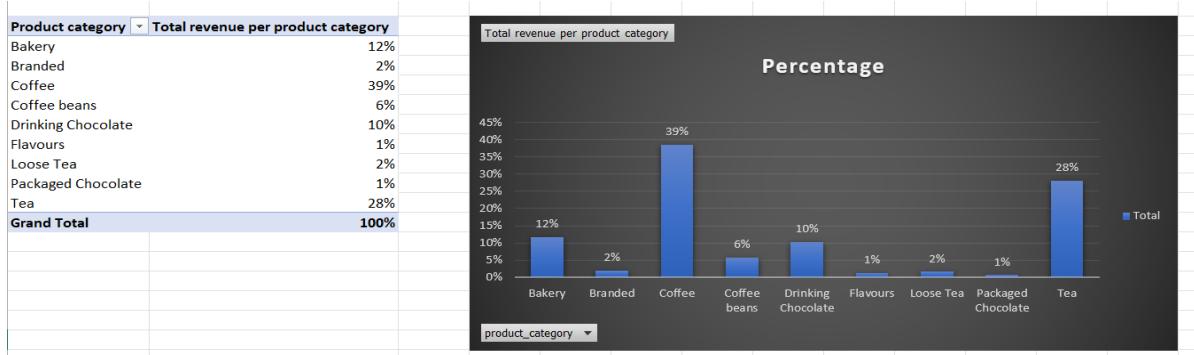
Insights – AOV = \$4.69

3. To Find the Revenue by Product Category – beverage vs. snack contribution.

Formula – By using Pivot Table and Horizontal Bar Chart



In percentage by using Column Chart-



Insights – Coffee , Tea , Bakery and drinking chocolate are the most revenue generating product category in which Coffee is the highest with \$2,69,952 (39%) and least are Packaged chocolate and Flavours with 1% each of the total revenue.

4. To Find Revenue by Location – city-wise sales comparison.

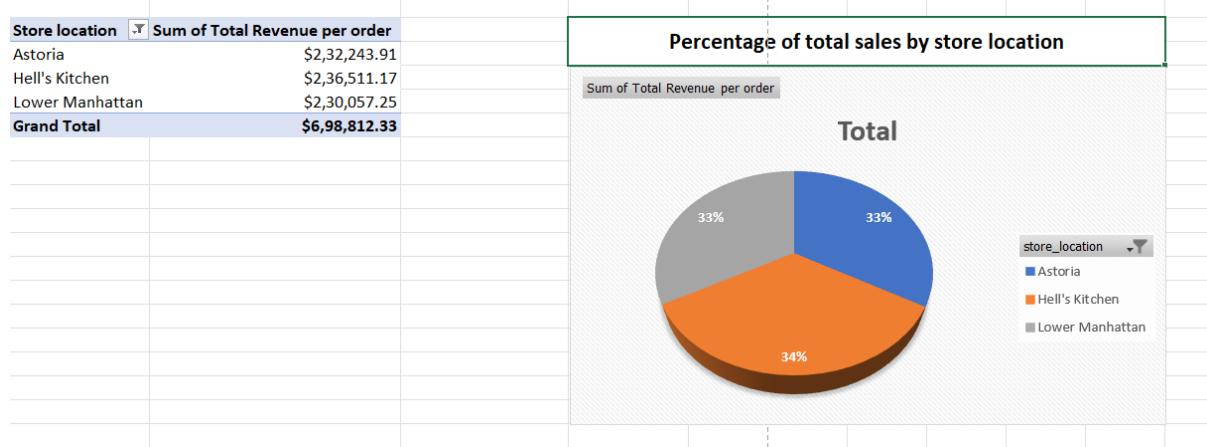
Formula - =SUMIF(F2:F149117, "Lower Manhattan", K2:K149117)

=SUMIF(F2:F149117, "Hell's Kitchen", K2:K149117)

=SUMIF(F2:F149117, "Astoria", K2:K149117)

	D	E	F	G	H	I	J	K	L	M	N	
1	transaction_qty	store_id	store_location	product_id	unit_price	product_category	product_type	Total Revenue per order	Lower Manhattan	Hell's Kitchen	Astoria	
2	2	5	Lower Manhattan	32	\$3.00	Coffee	Gourmet brewed coffee	\$6.00	\$2,30,057.25	\$2,36,511.17	\$2,32,243.91	
3	2	5	Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea	\$6.20				
4	2	5	Lower Manhattan	59	\$4.50	Drinking Chocolate	Hot chocolate	\$9.00				
5	1	5	Lower Manhattan	22	\$2.00	Coffee	Drip coffee	\$2.00				
6	2	5	Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea	\$6.20				

In percentage by store location by using pie chart –



Insights – Hell's Kitchen is the Top generating revenue location with total of \$2,36,511.17 (34%)

5. To find Top 5 Selling Products – most popular and profitable menu items.

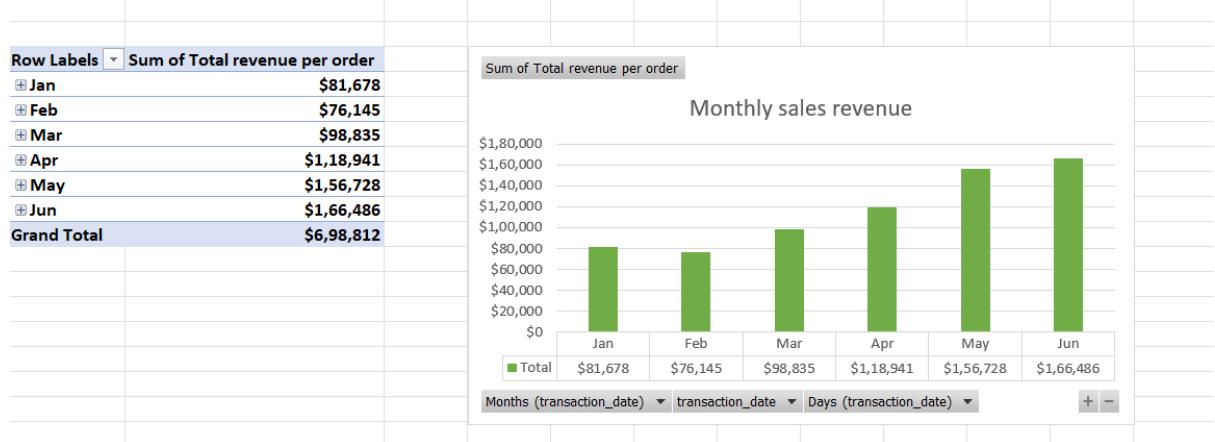
By using pivot table and column chart –



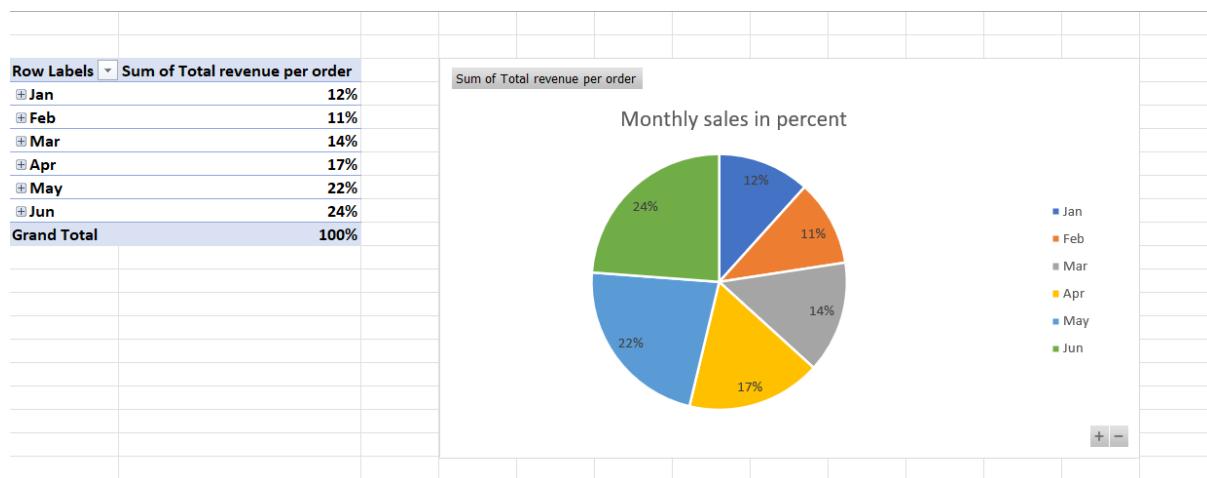
Insights – Barista Espresso is the Top selling product with the revenue of \$91,406 after Hot chocolate which is second most selling product.

6. Monthly Revenue Trend – growth and seasonal variations.

By using pivot table and column chart



In percentage by using Pie chart –



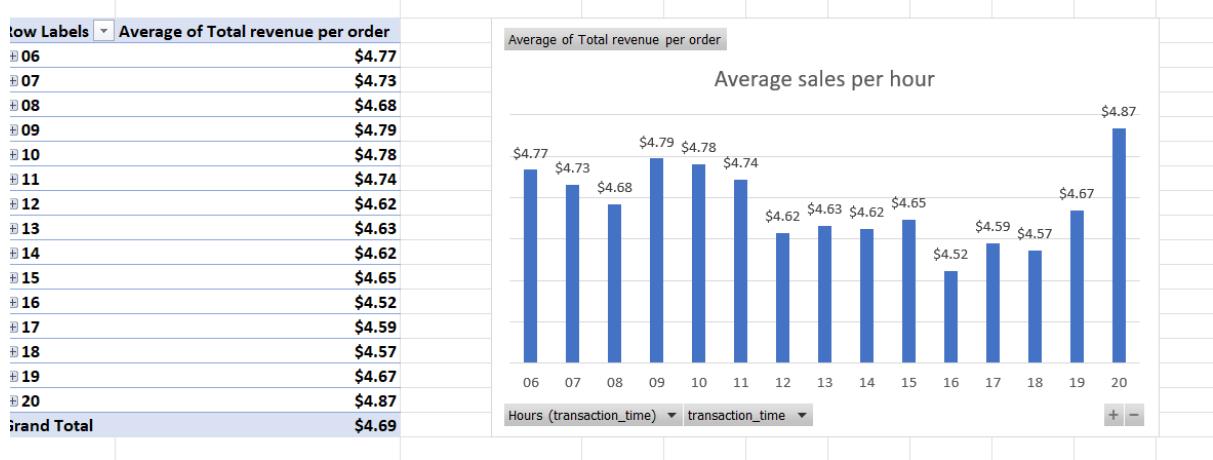
Insights – June and May are the highest generating revenue with total value of \$1,66,486 (24%) and \$1,56,728 (22%) respectively.

7. Average Sales per Hour – busiest operating hours and demand peaks.

To calculate avg sales per hour – First we need to extract **Hours** from **Transaction_time column**

P6													
A	B	C	D	E	F	G	H	I	J	K	L	M	
1	action_id	transaction_date	transaction_time	transaction_qty	store_id	store_location	product_id	unit_price	product_category	product_type	Total revenue per order	Total revenue	Hours
2	1	01 January 2023	7.06.11 AM	2	5 Lower Manhattan	32	\$3.00	Coffee	Gourmet brewed coffee		\$6.00	\$6,988.12	7
3	2	01 January 2023	7.08.56 AM	2	5 Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea		\$6.20		7
4	3	01 January 2023	7.14.04 AM	2	5 Lower Manhattan	59	\$4.50	Drinking Chocolate	Hot chocolate		\$9.00		7
5	4	01 January 2023	7.20.24 AM	1	5 Lower Manhattan	22	\$2.00	Coffee	Drip coffee		\$2.00		7
6	5	01 January 2023	7.22.41 AM	2	5 Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea		\$6.20		7
7	6	01 January 2023	7.22.41 AM	1	5 Lower Manhattan	77	\$3.00	Bakery	Scone		\$3.00		7
8	9	01 January 2023	7.22.41 AM	2	5 Lower Manhattan	77	\$3.00	Bakery	Scone		\$3.00		7

By pivot table and column chart -



Insights - 20:00 is the peak selling hour with the average sales of \$4.87.

Excel functions : Using of Vlookup and Xlookup

1. Vlookup : To find specific product name by transaction_id 2184

=VlookUP(A2184,Table[[#ALL],[transaction_id]:[Total revenue]],9)

Q2	fx	=LOOKUP(A2184,Table1[[#All],[transaction_id]:[Total revenue]],9)										
A	B	C	D	E	F	G	H	I	J	N	O	Q
1	transaction_id	transaction_date	transaction_time	transaction_qty	store_id	store_location	product_id	unit_price	product_category	product_type	Transaction_id	Product Name
2	1	01 January 2023	00 January 1900	2	5	Lower Manhattan	32	\$3.00	Coffee	Gourmet brewed coffee	2184	
3	2	01 January 2023	00 January 1900	2	5	Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea		
4	3	01 January 2023	00 January 1900	2	5	Lower Manhattan	59	\$4.50	Drinking Chocolate	Hot chocolate		
5	4	01 January 2023	00 January 1900	1	5	Lower Manhattan	22	\$2.00	Coffee	Drip coffee		
6	5	01 January 2023	00 January 1900	2	5	Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea		

2. Xlookup : To find product category by product id.

```
=XLOOKUP(G142401,Table1[@[product_id]]:G149117,Table1[@[product_category]]:149117,Not Found)
```

	B	C	D	E	F	G	H	I	J	N	O	P	Q
	_id	transaction_date	transaction_time	transaction_qty	store_id	store_location	product_id	unit_price	product_category	product_type	Product Id	product category	
2	ry1900	01 January 2023	00 January 1900	2	5	Lower Manhattan	32	\$3.00	Coffee	Gourmet brewed coffee			
3	ry1900	01 January 2023	00 January 1900	2	5	Lower Manhattan	57	\$3.10	Tea	Brewed Chai tea			
4	ry1900	01 January 2023	00 January 1900	2	5	Lower Manhattan	59	\$4.50	Drinking Chocolate	Hot chocolate			
5	ry1900	01 January 2023	00 January 1900	1	5	Lower Manhattan	22	\$2.00	Coffee	Drip coffee	26	Coffee	

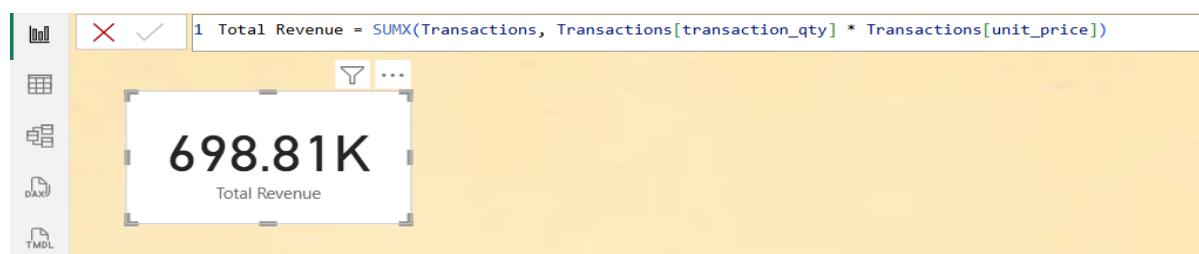
Power BI Dashboard Development

The cleaned Excel dataset was imported into Power BI for advanced visualization and dynamic dashboard creation. DAX measures were created for various KPIs, and visuals were designed with a clean, coffee-themed layout (brown, beige, and green color palette).

Dashboard file link -

Key KPIs using DAX

- **Total Revenue** - Total Revenue = SUMX(Transactions, Transactions[transaction_qty] * Transactions[unit_price]).



- **Average Order Value (AOV)** - AOV = [Total Revenue] / DISTINCTCOUNT(Transactions[transaction_id])



- Create column to calculate avg sales by hour –

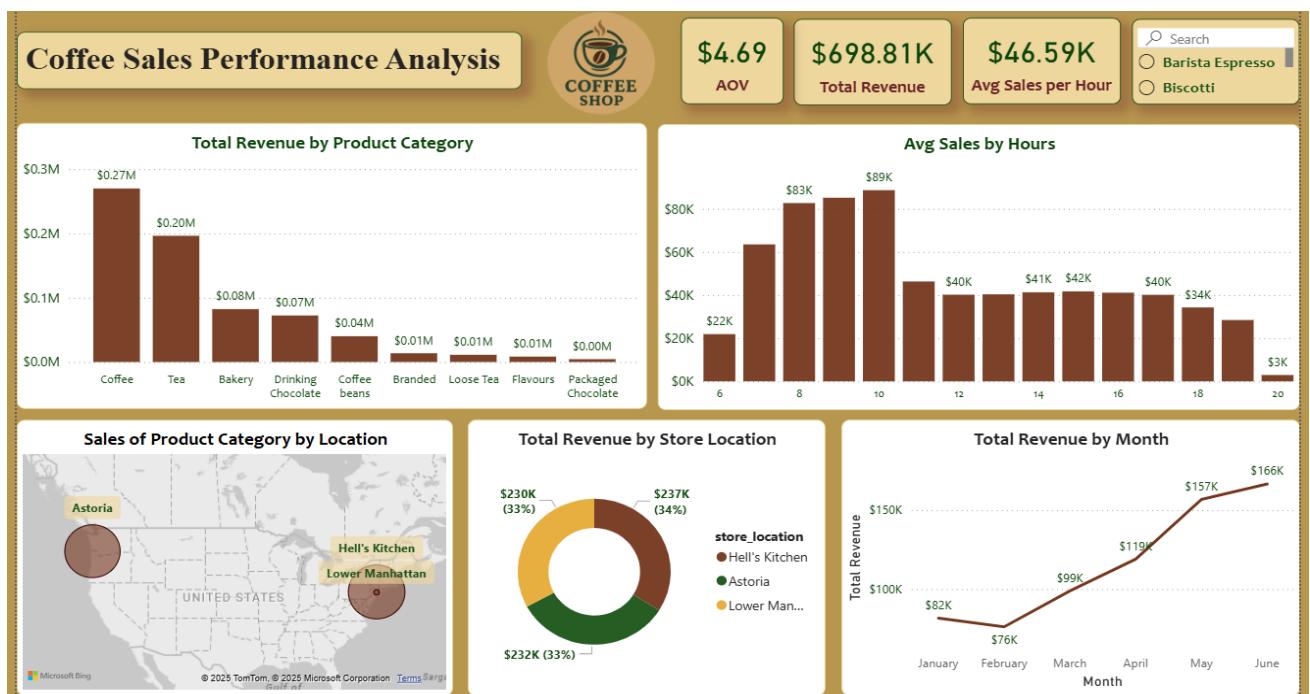
Hour = HOUR(Transactions[transaction_time])



Avg sales per hour – AVERAGEX(VALUES('Transactions'[Hour]),CALCULATE([Total Revenue]))



Screenshot of Final Dashboard



Final Insights & Recommendations for Future Growth

Overall Performance

- The coffee shop chain achieved ~\$698.8K in total revenue with a strong Average Order Value (AOV) of \$4.69, showing steady customer engagement and healthy pricing.
- Average Sales per Hour (\$46.59K) indicate consistent performance during peak hours, proving effective demand distribution throughout the day.

Store Location Insights

- Lower Manhattan leads with 34% of total revenue, closely followed by Hell's Kitchen (33%) and Astoria (33%).
- The near-equal distribution shows balanced market performance — suggesting strong brand presence across all three locations.
- However, expanding product promotions in Astoria could slightly boost overall revenue share and balance customer retention.

Product Category Analysis

- Coffee (~\$270K) and Tea (~\$200K) are top-performing categories, contributing over 65% of total sales.
- Bakery and Drinking Chocolate segments have moderate traction — these can be leveraged with bundled offers or seasonal discounts.
- Low-performing items like Flavours and Packaged Chocolate need menu reevaluation or promotional visibility.

Sales by Hour

- Morning hours (8 AM–10 AM) drive the highest average sales (\$83K–\$89K) — peak coffee demand period.
- Afternoon and evening hours show a noticeable dip; introducing “Happy Hour” or “Evening Combo” offers could boost traffic in non-peak hours.

Monthly Trend

- Revenue shows a steady upward trend, rising from \$82K in January to \$166K in June — a 102% growth in six months.
- Indicates effective customer retention and seasonal demand increase, likely due to improved marketing or new product launches.
- Maintaining this growth requires data-driven demand forecasting and targeted campaigns.

Strategic Recommendations for Future Growth

1. Focus Marketing on High-Margin Products: Highlight coffee and tea in loyalty programs and social media ads.
2. Upsell During Non-Peak Hours: Offer limited-time combos or loyalty points to attract customers in 2 PM–6 PM slots.
3. Expand Data Analysis: Track customer demographics and purchase patterns to personalize promotions.
4. Introduce Seasonal Menus: New flavours or bakery specials every quarter to maintain excitement and engagement.
5. Enhance Location Performance: Use localized offers (e.g., “Astoria Coffee Week”) to improve store-level revenue.
6. Integrate Feedback Systems: Collect real-time customer feedback through digital receipts or QR surveys to refine offerings.

Conclusion

The Coffee Shop chain demonstrates strong growth momentum, a loyal customer base, and well-balanced location performance. By leveraging data insights to optimize products, timing, and local strategies, the business is well-positioned for sustained expansion and profitability in the coming months.