1. Introduction

Problem Statement:

The owner of a newly established franchise coffee shop, operating across three locations (Hell's Kitchen, Lower Manhattan, and Astoria), aimed to understand customer purchase behaviour and optimize operations at these sites. The objective was to analyse total sales, transaction trends, product performance, and geographic sales.

2. Dataset Overview

Total Records: 1640287

Dataset Features:

1. TRANSACTION_ID
2. STORE_LOCATION
3. TRANSACTION_DATE
4. TRANSACTION_TIME
5. TRANSACTION_QTY
6. UNIT_PRICE
7. PRODUCT_CATEGORY
8. PRODUCT_TYPE

3. Data Cleaning

The dataset contained missing data, specifically Revenue. We addressed these missing values by:

Deletion

we removed redundant columns from the original 11 columns, retaining only the following 8 columns

Data Processing:

1. **Sales calculation**
    =Transaction QTY*UNIT PRICE

2. **Month extraction from Transaction Date**
    =TEXT(C2;"mmm")

3. **Weekday extraction from Transaction Date**
    =TEXT(C2;"ddd")
4. **Hour** Extracted from transaction time

=HOUR(D2)

4. Descriptive Statistics

- Total Sales: $698 812,33

- Average Sales per Transaction: $3,38
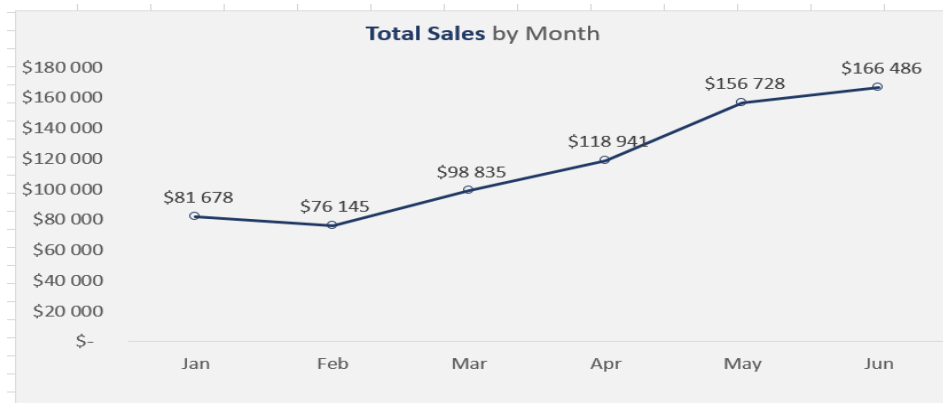
- Most Popular Products: Barista Espresso

5. Sales Trends

Weekly and Hourly Sales Trends:
- The peak transaction hour of 10 am and Fridays indicates a critical period for staffing and resource allocation

- Transactions peak at 10 am and on Fridays.8 pm shows the lowest transaction volume, pointing to a decline in customer activity in the evening hours, adjustments to staffing levels to improve efficiency and address lower activity times

Transactions by Weekday & Hour of Day	Hour of Day																
WEEKDAY		**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**Grand Total**
Mon		993	2909	3563	3562	3747	2128	1924	1811	1997	1902	1926	1894	1567	1191	117	31231
Tue		721	2672	3964	3939	4092	1857	1626	1656	1747	1811	1757	1783	1387	1234	203	30449
Wed		1057	2714	3587	3591	3730	2127	1780	1878	1839	1825	1779	1794	1635	1173	116	30625
Thu		1097	2828	3450	3394	3706	2091	1908	1878	1922	1919	1994	1908	1624	1356	87	31162
Fri		1058	2884	3641	3847	3997	2019	1795	1698	1847	1858	1773	1783	1636	1256	115	31207
Sat		881	2718	3467	3349	3711	1912	1885	1694	1776	1855	1835	1731	1464	1200	136	29614
Sun		1058	2724	3525	3688	3730	1901	1772	1824	1779	1753	1817	1807	1513	1185	106	30182
Grand Total		6865	19449	25197	25370	26713	14035	12690	12439	12907	12923	12881	12700	10826	8595	880	214470

Monthly Trends:
- The steady increase in monthly sales suggests potential for continued growth. Strategic promotions and targeted marketing efforts could further capitalize on this positive trend, especially in the upcoming months.
- Sales have demonstrated a consistent upward trend from January to June 2023.

Total Sales by Month

Chart values: Jan $81 678, Feb $76 145, Mar $98 835, Apr $118 941, May $156 728, Jun $166 486

6. Product Performance

Top 5 Performing Products:	Barista Espresso Biscotti Brewed Black tea Brewed Chai tea Brewed Green tea
Top 5 Underperforming Products:	Premium Beans Premium brewed coffee Regular syrup Scone Sugar free syrup

Product Category	Count of TRANSACTION_QTY
Barista Espresso	16403
Biscotti	5711
Black tea	303
Brewed Black tea	11350
Brewed Chai tea	17183
Brewed Green tea	5671
Brewed herbal tea	11245
Chai tea	443
Clothing	221
Drinking Chocolate	266
Drip coffee	8477
Espresso Beans	319
Gourmet Beans	366
Gourmet brewed coffee	16912
Green beans	134
Green tea	159
Herbal tea	305
Hot chocolate	11468
House blend Beans	183
Housewares	526
Organic Beans	415
Organic brewed coffee	8489
Organic Chocolate	221
Pastry	6912
Premium Beans	336
Premium brewed coffee	8135
Regular syrup	4979
Scone	10173
Sugar free syrup	1811
Grand Total	149116

7. Recommendations

Based on the analysis, we can propose several recommendations to improve sales performance:
- Promotions
- Payment Method Enhancements
- Menu Expansion

8. Conclusion

This data analysis provided valuable insights into sales trends, product performance, and potential areas for improvement. By implementing the recommended actions, can optimize sales strategies, boost revenue, and enhance customer satisfaction.