

Project Title: Optimizing Coffee Shop Performance through Business Analytics by using Power BI.

In a highly competitive city like **New York**, coffee shop businesses must analyze **sales performance, product demand, and pricing trends** to maximize revenue and improve operational efficiency. With **1.50 lakh+ transactions**, this project leverages **Microsoft Power BI** to visualize and analyze sales data, helping businesses make data-driven decisions.

The primary objective of this project is to:

➤ **Identify High-Performing Stores**

- Determine which stores generate the highest revenue and the key factors driving their success.
- Analyze location-based trends and their impact on overall sales.

➤ **Detect Underperforming Stores**

- Identify stores with lower revenue and analyze the reasons behind their poor performance.
- Suggest data-driven strategies, such as better product placement, promotional offers, or operational improvements.

➤ **Analyze Product Sales & Pricing Trends**

- Determine which **product categories** and **types** contribute the most to total revenue.
- Identify the **best-selling products** and understand customer preferences.
- Assess **seasonal and time-based trends** to optimize pricing strategies and promotional campaigns.

➤ **Evaluate Transaction Trends & Revenue Maximization**

- Calculate the **average transaction value and quantity** across different stores.
- Identify strategies to **increase per-transaction revenue** through cross-selling, bundling, and pricing adjustments.

➤ **Understand Monthly Sales Growth & Seasonality**

- Track **monthly sales performance** and analyze whether revenue growth is consistent or seasonal.
- Compare trends across different locations to make location-specific business decisions.

Store Performance Analysis.

1. Which stores generate the highest revenue, and what factors contribute to their success?

- ✓ The Hell's Kitchen store generates the most revenue, with **\$236.51K** (33.84% of total revenue), closely followed by Lower Manhattan (**\$232.24K**, 33.23%) and Astoria (**\$230.06K**, 32.92%).

Key Success Factors:

- ✓ **1. High Demand for Coffee & Tea** – These categories consistently drive the highest sales across all locations.
- ✓ **2. Diverse Product Portfolio** – Packaged coffee and coffee beans significantly contribute to overall revenue.
- ✓ **3. Consistent Sales Distribution** – Revenue is evenly spread across locations, indicating steady customer traffic and demand.
- ✓ **4. Strategic Product Offerings** – A strong selection of staple beverages encourages frequent purchases, enhancing customer retention.

2. Are there underperforming stores, and what strategies can be applied to improve them?

- ✓ The Hell's Kitchen store leads in revenue generation with **\$236.51K (33.84% of total revenue)**, followed closely by **Lower Manhattan (\$232.24K, 33.23%)** and **Astoria (\$230.06K, 32.92%)**.

Key Success Factors:

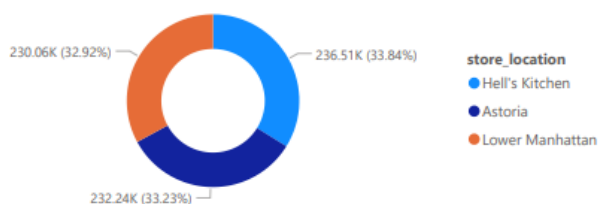
- ✓ **High Demand for Coffee & Tea** – Coffee and tea remain the top revenue-generating categories across all locations, highlighting strong consumer preferences.
- ✓ **Diverse Product Portfolio** – Packaged coffee and coffee beans contribute significantly to total sales, ensuring a well-balanced revenue stream.
- ✓ **Consistent Sales Distribution** – Revenue is evenly distributed among top locations, reflecting steady customer traffic and sustained demand.
- ✓ **Strategic Product Offerings** – Popular beverage options, particularly staple coffee varieties, drive frequent purchases and customer retention.

Performance Insights & Improvement Strategies:

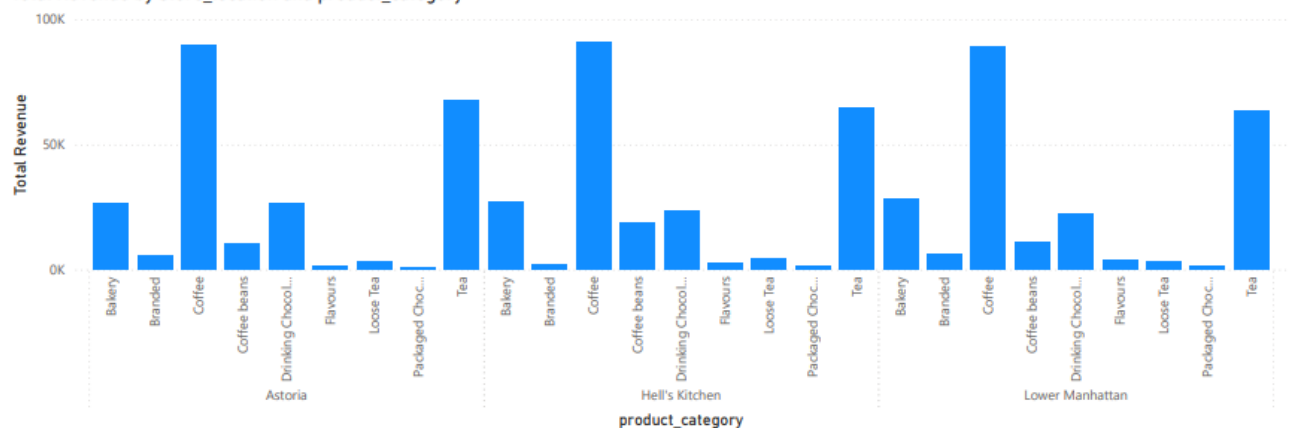
From the visual analysis, **Astoria has slightly lower coffee sales** compared to the other locations, making it a relatively weaker performer. To enhance its revenue and overall competitiveness, the following strategies can be implemented:

1. **Promotions & Discounts** – Introduce targeted discounts and limited-time offers on coffee to attract more customers and drive sales.
2. **Cross-Selling & Bundling** – Pair lower-selling items, such as branded merchandise or local tea, with best-selling coffee and tea products to increase overall purchase value.
3. **Store Layout Optimization** – Improve product placement to encourage impulse purchases, particularly for high-margin items.
4. **Enhanced Marketing Efforts** – Strengthen local advertising, implement customer loyalty programs, and leverage social media campaigns to boost brand awareness and customer engagement.

Total Revenue by store_location



Total Revenue by store_location and product_category



Product Sales & Pricing Optimization

1. Which product categories and types contribute the most to revenue and sales volume? What can be the reasons for the same?

By Revenue:

1. Product Categories:

- ✓ **Coffee** leads in total revenue **(\$269.9K, 53.5%** of total revenue).
- ✓ **Tea** follows with **\$82.32K (16.3%)**.
- ✓ **Bakery items** contribute **\$72.42K (14.4%)**.

2. Product Types:

- ✓ **Barista Espresso** generates the highest revenue.
- ✓ **Brewed Chai Tea** and **Gourmet Brewed Coffee** also contribute significantly.
- ✓ **Hot Chocolate** and **Brewed Black Tea** rank next in terms of revenue.

By Sales Volume (Transaction Quantity):

1. Top product types by quantity sold:

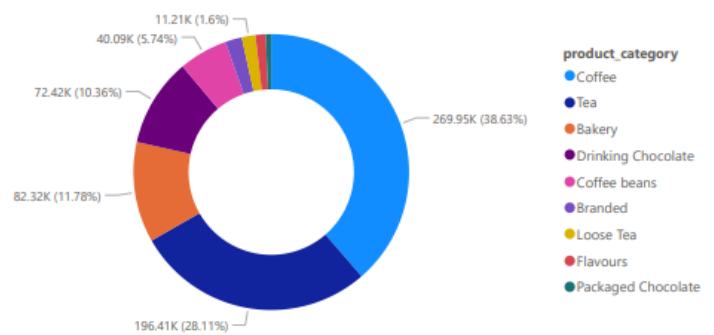
- ✓ **Brewed Chai Tea (26,250 units)** – Highest-selling product.
- ✓ **Gourmet Brewed Coffee (25,973 units)** – Close second.
- ✓ **Barista Espresso (24,943 units)** – Also a strong performer.
- ✓ **Brewed Black Tea and Hot Chocolate** follow in sales volume.

Key Insights:

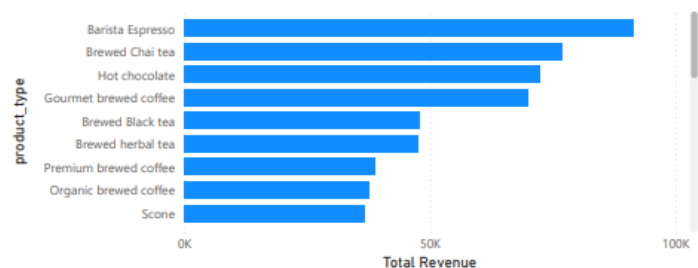
- ✓ **Coffee and Tea dominate both revenue and sales volume**, with **Barista Espresso** and **Brewed Chai Tea** performing exceptionally well.
- ✓ **Bakery products contribute moderately** to total revenue, with items like scones and pastries generating consistent sales.
- ✓ **Packaged Coffee Beans and Branded Items** have lower sales volumes but contribute to total revenue through higher pricing.

product_type	product_category	Sum of transaction_qty	Sum of unit_price
Brewed Chai tea	Tea	26250	50,466.35
Gourmet brewed coffee	Coffee	25973	45,605.60
Barista Espresso	Coffee	24943	59,956.25
Brewed Black tea	Tea	17462	31,152.00
Hot chocolate	Drinking Chocolate	17457	47,578.75
Brewed herbal tea	Tea	17328	30,864.50
Organic brewed coffee	Coffee	13012	24,601.30
Drip coffee	Coffee	12891	21,065.00
Premium brewed coffee	Coffee	12431	25,401.15
Scone	Bakery	10465	35,957.87
Brewed Green tea	Tea	8697	15,552.50
Regular syrup	Flavours	7606	3,983.20
Pastry	Bakery	6961	25,477.49
Biscotti	Bakery	5788	19,528.78
Sugar free syrup	Flavours	2905	1,448.80
Housewares	Branded	555	7,074.00
Chai tea	Loose Tea	443	4,301.25
Organic Beans	Coffee beans	420	8,419.50
Premium Beans	Coffee beans	406	11,433.50
Gourmet Beans	Coffee beans	366	6,798.00
Espresso Beans	Coffee beans	319	5,560.25
Herbal tea	Loose Tea	305	2,729.75
Black tea	Loose Tea	303	2,711.85
Drinking Chocolate	Packaged Chocolate	266	2,728.04
Clothing	Branded	221	6,163.00
Organic Chocolate	Packaged Chocolate	221	1,679.60
House blend Beans	Coffee beans	183	3,294.00
Green tea	Loose Tea	159	1,470.75
Green beans	Coffee beans	134	1,340.00
Total		214470	504,343.03

Total Revenue by product_category



Total Revenue by product_type



2. Are there seasonal or time-based sales trends that can inform better pricing or promotions?

Based on the **daily revenue trend chart**, there is a noticeable **decline in total revenue over time**, suggesting potential **seasonal variations** or **time-based sales trends**.

Key Observations:

1. Gradual Revenue Decline

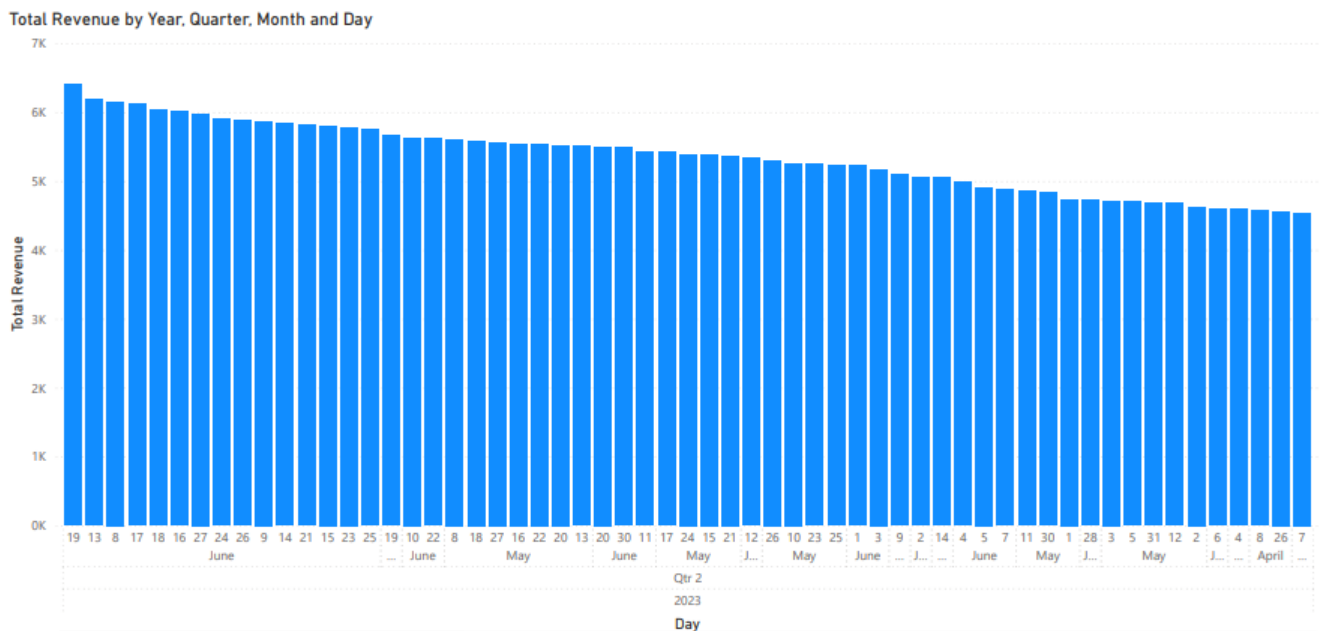
- ✓ The highest daily revenue was recorded at the beginning of the timeline (**around May 19th**), followed by a steady decline.
- ✓ This could indicate a **peak sales period followed by a slowdown**, suggesting a potential **seasonal demand shift**.

2. Potential Seasonality in Sales

- ✓ **Summer Demand Shift:** If this data represents the summer months, hot beverages like coffee and tea may see reduced demand. Cold beverages and packaged coffee may need promotional boosts.
- ✓ **Weekday vs. Weekend Trends:** The data does not explicitly show the difference, but typically, **weekends tend to generate higher sales** due to increased footfall.

3. Pricing & Promotions Opportunities

- ✓ **Dynamic Pricing:** Adjust pricing based on peak and off-peak demand to maximize revenue.
- ✓ **Happy Hour Deals:** Offer discounts during slower hours of the day to increase sales.
- ✓ **Seasonal Product Promotions:** If sales decline in warmer months, introduce **cold brews, iced teas, and summer-specials** to attract more customers.
- ✓ **Weekend Specials:** If weekends bring higher sales, create **bundled offers or limited-time deals** to maximize revenue.



3.Determine monthly sales trends and analyse if there is any growth or seasonality involved here overall as well as for different stores.

Overall Monthly Sales Trends:

1. Steady Growth Over Time:

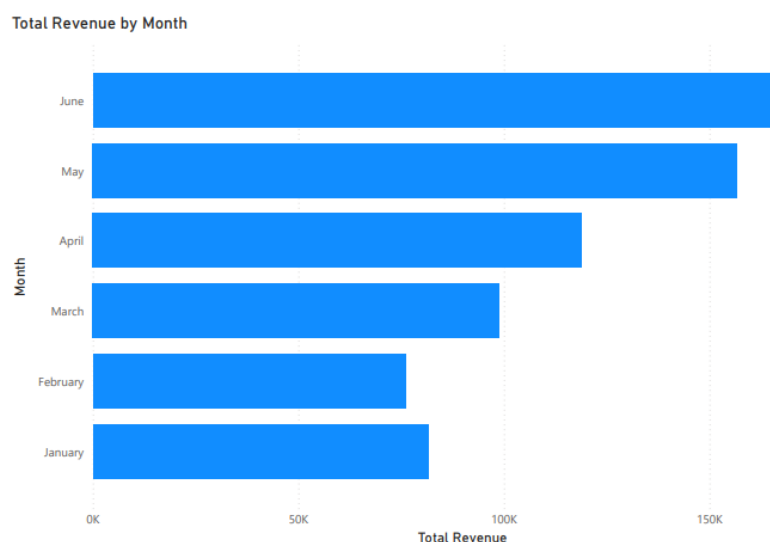
- ✓ Revenue has increased consistently from **January to June**, indicating **positive growth** in sales.
- ✓ The highest revenue is recorded in **June**, followed by **May and April**, suggesting an upward trend in business performance.

2. Possible Seasonality Effects:

- ✓ **Winter (January–February):** Sales were relatively lower, possibly due to reduced foot traffic post-holiday season or lower demand for specific products.
- ✓ **Spring (March–April):** Sales picked up, potentially due to seasonal changes in customer preferences or marketing efforts.
- ✓ **Summer (May–June):** Peak revenue months, indicating **high consumer demand**, possibly for summer-friendly beverages like iced coffee, cold brews, or promotional offers.

Store-Level Insights:

- ✓ If **different stores show similar trends**, seasonality might be influencing sales across all locations.
- ✓ If **some stores grow faster than others**, location-specific factors (e.g., promotions, local events, customer demographics) may be driving the changes.
- ✓ Identifying **stores that are underperforming despite overall growth** can help implement targeted improvement strategies.



Strategic Recommendations for Coffee Shop Performance Optimization

Category	Key Findings	Recommendations	Expected Impact
Store Performance	- Astoria store is underperforming compared to other locations.	- Implement targeted promotions & discounts to attract more customers.	- Increased footfall and sales at Astoria.
		- Cross-sell & bundle low-selling items with high-demand products.	- Higher average transaction value.
		- Optimize store layout to enhance impulse purchases.	- Improved brand visibility and customer retention.
		- Strengthen local marketing & customer engagement .	
Product Sales & Pricing	- Top revenue-generating products: Barista Espresso, Brewed Chai Tea, Gourmet Brewed Coffee.	- Prioritize high-performing products in marketing and promotions.	- Increased revenue from high-demand products.
	- Moderate performers: Bakery products, packaged coffee beans.	- Implement dynamic pricing based on demand.	- Improved visibility and sales of bakery & packaged products.
		- Offer happy hour discounts during non-peak hours.	- Maximized revenue through strategic pricing.
		- Introduce weekend special bundles to capitalize on higher weekend footfall.	
Seasonal & Time-Based Trends	- Revenue declines over time, indicating seasonal variations.	- Launch seasonal beverages (cold brews, iced teas in summer; spiced lattes, hot chocolate in winter).	- Higher seasonal adaptability leading to consistent revenue.
	- Peak months: May & June (higher demand for cold beverages).	- Run seasonal discounts to stimulate demand in off-peak months.	- Increased demand for slow-selling items.
	- Lower sales in January & February .	- Introduce limited-time flavors & offers to create urgency.	

