



Coffee Shop Sales Analysis

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Problem Statement



To optimize sales and customer retention, we need to identify specific transaction patterns, product performance, and spending behaviors across different store locations, adjusting staffing, inventory, and promotional strategies accordingly.

Hypothesis

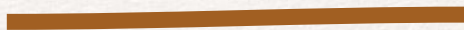


By aligning inventory, staffing, and promotional efforts with each store's unique transaction peaks, best-selling products, and customer preferences, we can maximize sales and improve customer satisfaction.

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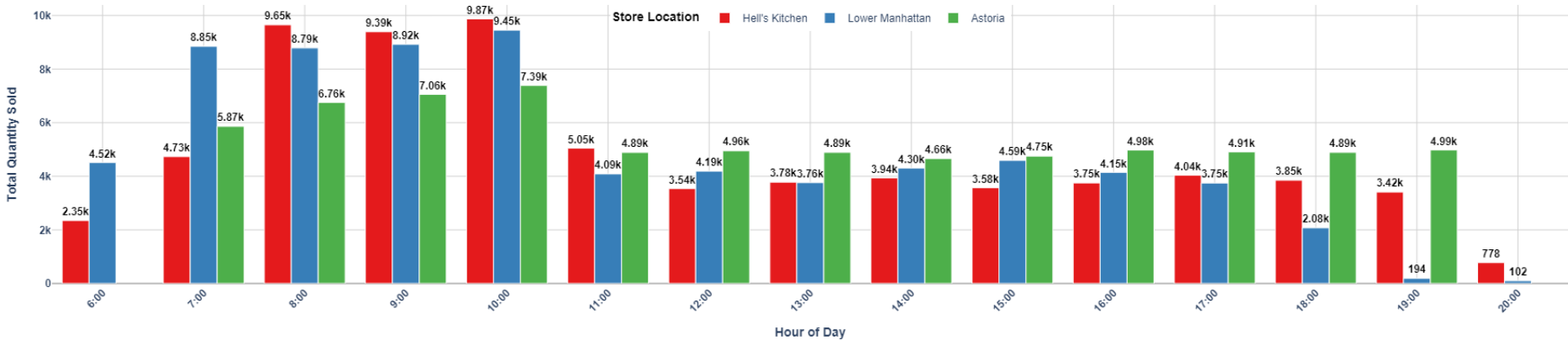
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Customer and Sales Analysis



What are the peak transaction times during the day, and how do they vary by store location?

Total Transaction Quantities by Store Location and Hour



Interpretation

- **Hell's Kitchen:** Peak times are between **8:00 AM–10:00 AM**, with the highest at **10:00 AM**. Decline after **10:00 AM**, stabilizing around **5:00 PM**.
- **Lower Manhattan:** Peaks occur between **7:00 AM–10:00 AM**, with the highest at **10:00 AM**. Gradual decrease after **10:00 AM**.
- **Astoria:** Peak times are between **8:00 AM–10:00 AM**, with an additional peak at **4:00 PM**. Decline after **10:00 AM**, followed by a slight rise at **4:00 PM**.

Business Insights

- **Hell's Kitchen & Lower Manhattan:** Increase staffing and inventory for early morning. Target marketing to commuters.
- **Astoria:** Focus on evening promotions to attract customers during peak hours.
- **All Locations:** Maintain staffing and inventory during secondary peaks (lunchtime, late afternoon) for increased sales.

Which store location has the highest total sales?



Interpretation

- **Hell's Kitchen:** Leads in total sales with **\$236,611.17**, the highest among the three locations.
- **Astoria:** Close behind with **\$232,000** in total sales, showing strong performance.
- **Lower Manhattan:** Slightly lower at **\$230,000**, but still a competitive figure in total sales revenue.

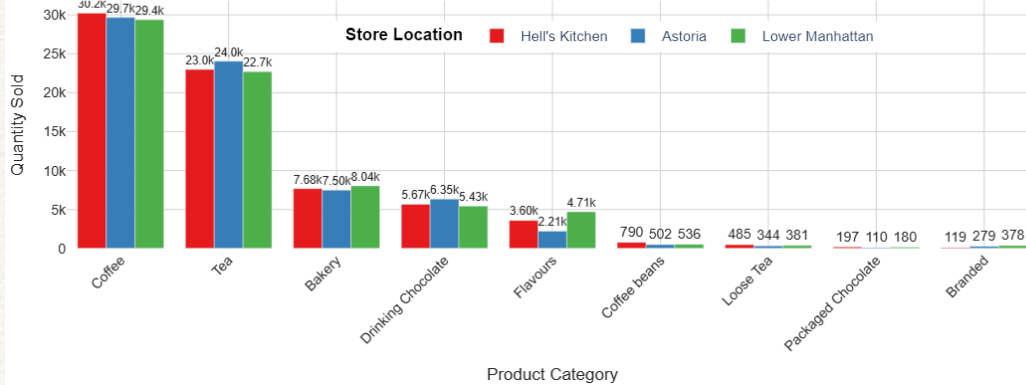
Business Insights

- **Hell's Kitchen:** Focus on maintaining the strong performance and enhancing the customer experience.
- **Astoria & Lower Manhattan:** Implement targeted marketing campaigns and promotions to close the sales gap and challenge Hell's Kitchen's lead.

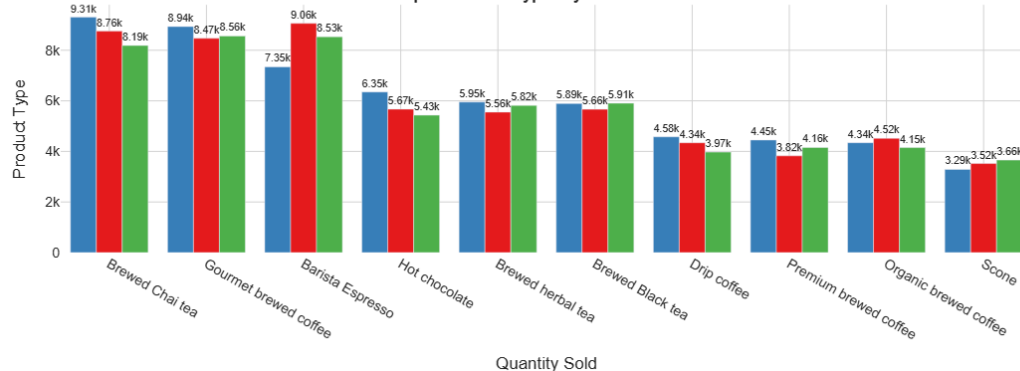
What are the best-selling product categories and types across different store locations?

Sales Analysis by Product Category and Product Type

Top-Selling Product Categories by Store Location



Top 10 Product Types by Store Location



Interpretation

- Coffee** leads in sales across all locations, with **Hell's Kitchen** at **30.2k** units.
- Tea** follows closely, especially strong in **Astoria** with **24.0k** units.
- Other key categories include **Drinking Chocolate** and **Bakery**.
- Top Products:** Brewed Chai Tea, Gourmet Brewed Coffee, and Barista Espresso.

Business Insights

- Focus on Coffee & Tea:** Stock and promote these popular categories.
- Promote Best-Sellers:** Highlight items like **Brewed Chai Tea** to drive repeat purchases.
- Expand Offerings:** Use variety (e.g., **Drinking Chocolate**) to attract more customers.

How do these best-sellers align with the categories that contribute most to overall profit?



Interpretation

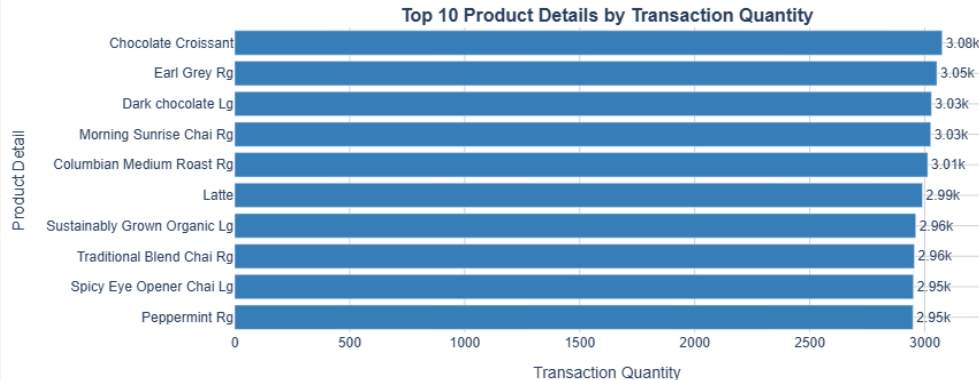
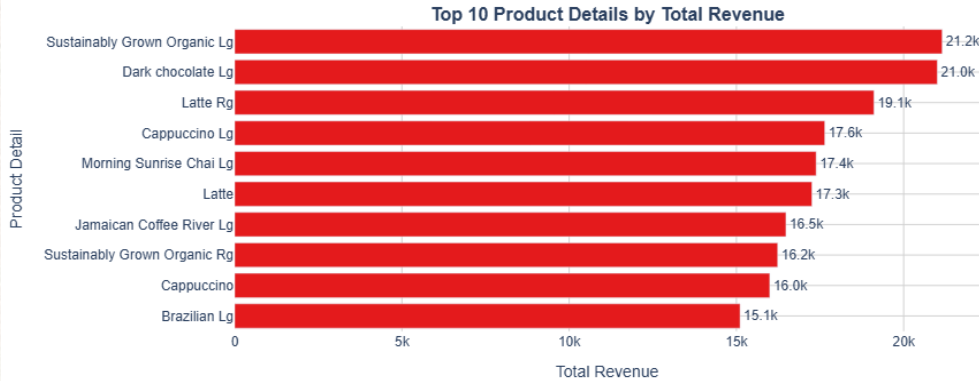
- **Coffee** and **Tea** are the highest profit drivers, aligning with their position as top-sellers across all locations.
- **Hell's Kitchen** leads in **coffee** profit (**\$91.22k**), while **Astoria** and **Lower Manhattan** also show strong sales in these categories.
- **Bakery**, **Drinking Chocolate** contributes moderately to profit, while **Flavours**, and **Packaged Chocolate** have minimal profit contributions despite having notable sales volumes.

Business Insights

- Prioritize **Coffee** and **Tea** in terms of stock and promotions, as they are driving both sales and profit.
- Consider promotional efforts for **Bakery** items, possibly through bundling or seasonal offers, to increase their profitability.
- For **Flavours** and **Packaged Chocolate**, targeted marketing or value-based offers may help increase their contribution to overall profit.

Which product details or specific items generate the highest revenue and which have the highest transaction frequency?

Top 10 Products by Revenue and Transaction Volume



Interpretation

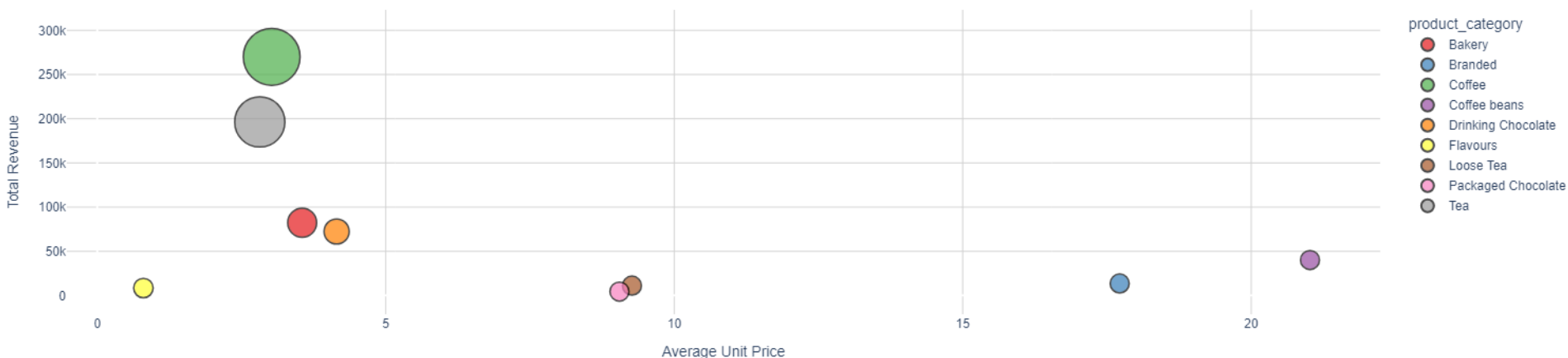
- **Top Revenue Products:** Sustainably Grown Organic Lg (**\$21.2k**), Dark Chocolate Lg (**\$21.0k**), and **Latte Rg** (**\$19.1k**) lead in sales revenue.
- **Top Transaction Volume:** Chocolate Croissant (**3.08k**), Earl Grey Rg (**3.05k**), and Dark Chocolate Lg (**3.03k**) have the highest purchase frequency.

Business Insights

- **Prioritize High-Revenue Products:** Ensure top revenue items like **Sustainably Grown Organic Lg** and **Dark Chocolate Lg** are well-stocked and prominently displayed to maintain sales.
- **Promote High-Frequency Items:** Use **Chocolate Croissant** and **Earl Grey Rg** to encourage repeat purchases with prominent placement or special offers.
- **Enhance Customer Engagement:** Introduce bundle deals or seasonal variations of popular products to attract new customers and retain existing ones.

How does the average unit price impact the total revenue and quantity sold for different product categories?

Impact of Average Unit Price on Total Revenue and Quantity Sold by Product Category



Interpretation

- **Lower-Priced Categories (Tea, Coffee):** Lower unit prices lead to **higher quantities** sold and **higher total revenue** due to the larger volume of sales.
- **Higher-Priced Categories (Coffee Beans):** Higher unit prices result in **lower quantities** sold, leading to **lower total revenue** despite higher revenue per unit.
- **Moderate-Priced Categories (Bakery, Drinking Chocolate):** Moderate prices balance between sales volume and total revenue.

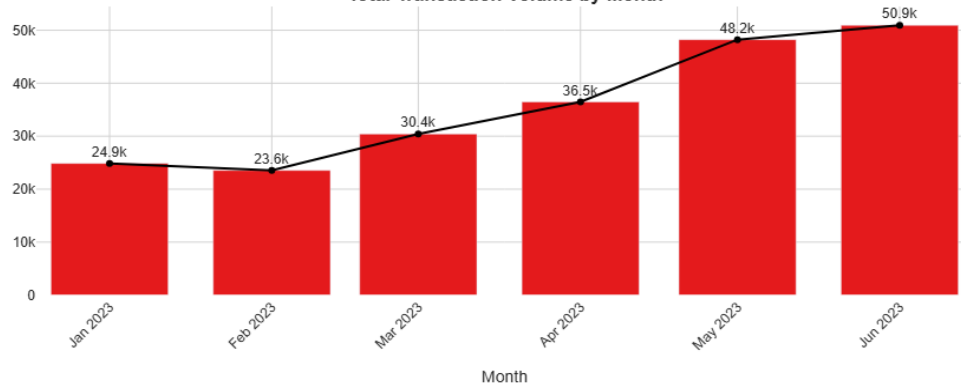
Business Insights

- **Leverage Low Prices:** Focus on increasing sales of Tea and Coffee, where low prices boost volume and revenue.
- **Revive High-Priced Products:** Use bundling or discounts to increase sales of higher-priced items like Coffee Beans.
- **Enhance Moderate Categories:** Bakery and Drinking Chocolate with new flavors or deals to boost sales and revenue.

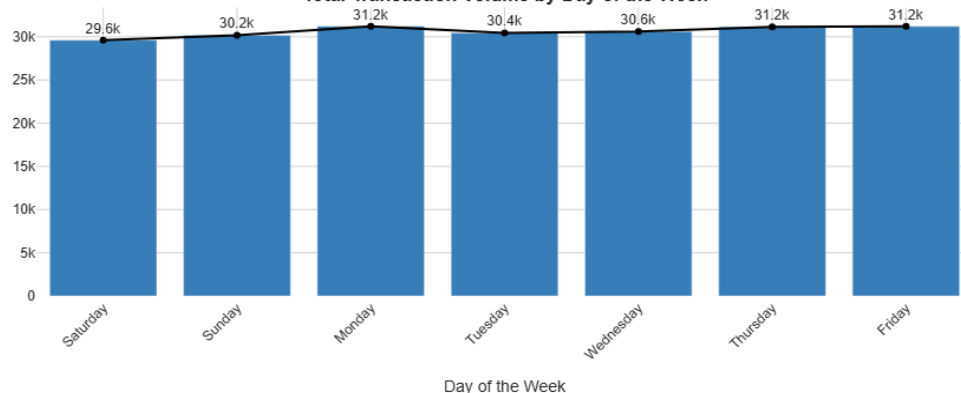
What trends can be observed in transaction volume over the months, and are there any noticeable patterns related to specific days of the week?

Combined Transaction Volume Analysis

Total Transaction Volume by Month



Total Transaction Volume by Day of the Week



Interpretation

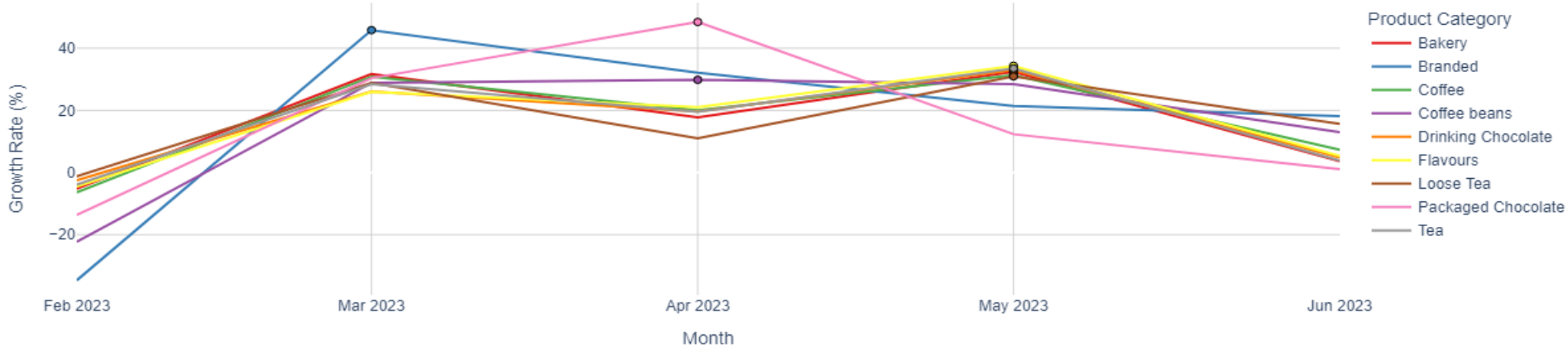
- **Monthly Trends:** Transactions steadily increased from **January 2023 (24.9k)** to **June 2023 (50.9k)**, indicating a growing customer base or higher purchasing activity.
- **Weekly Trends:** Transaction volumes are **stable**, with peaks on **Monday, Thursday, and Friday (~31.2k)** and the **lowest** volume on **Saturday (29.6k)**.

Business Insights

- **Plan for Growth:** Align inventory and staffing with the steady monthly growth in transactions.
- **Leverage Peak Days:** Focus promotions on **Monday, Thursday, and Friday** to maximize impact.
- **Boost Saturday Sales:** Use weekend specials or targeted ads to improve **Saturday's** lower transaction volume.

What product categories experience the highest growth rate in sales over different months?

Month-over-Month Sales Growth Rate by Product Category



Interpretation

- **Branded Products:** Peak growth observed in **March**, indicating potential seasonality or event-based demand.
- **Packaged Chocolate:** Highest growth in **April**, followed by a decline, suggesting demand spikes around specific times.
- **Consistently Growing Categories:** **Loose Tea** and **Flavours** etc. show steady, reliable growth without major fluctuations.

Business Insights

- **Seasonal Focus:** Increase stock and promotions for **Branded** Products in **March** and **Packaged Chocolate** in **April**.
- **Boost Retention:** Use loyalty programs for steady categories like **Loose Tea** and **Flavours etc.**
- **Efficient Inventory:** Align stock levels with demand cycles to optimize resources.

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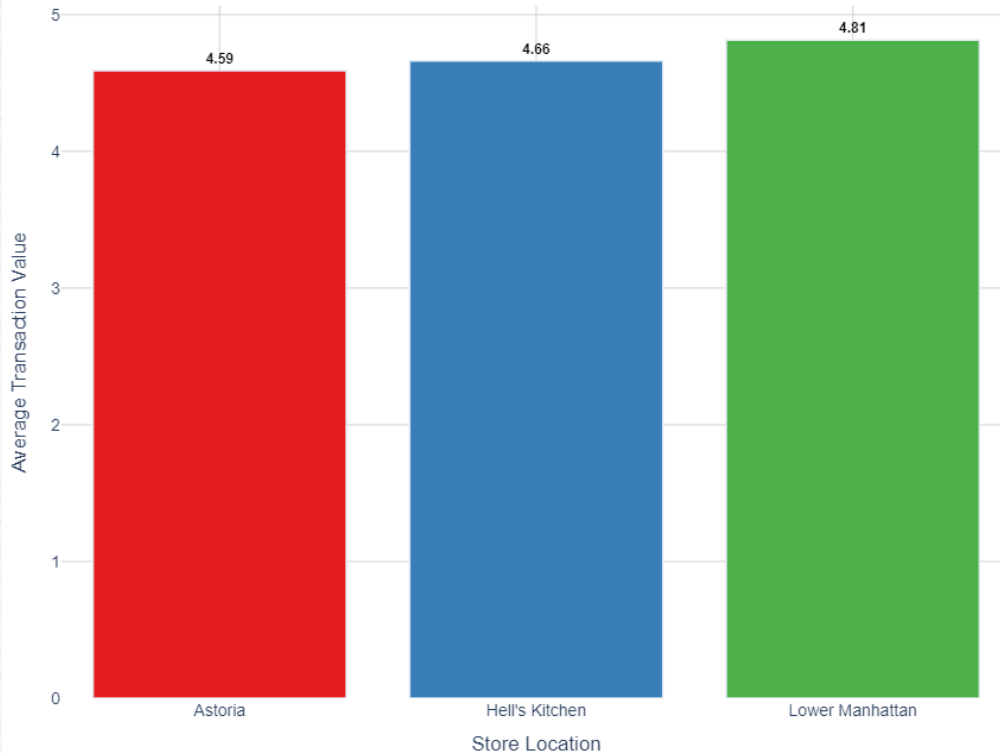
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Pricing and Revenue Insights



What is the average transaction value per store location and how does it compare across different areas?

Average Transaction Value per Store



Interpretation

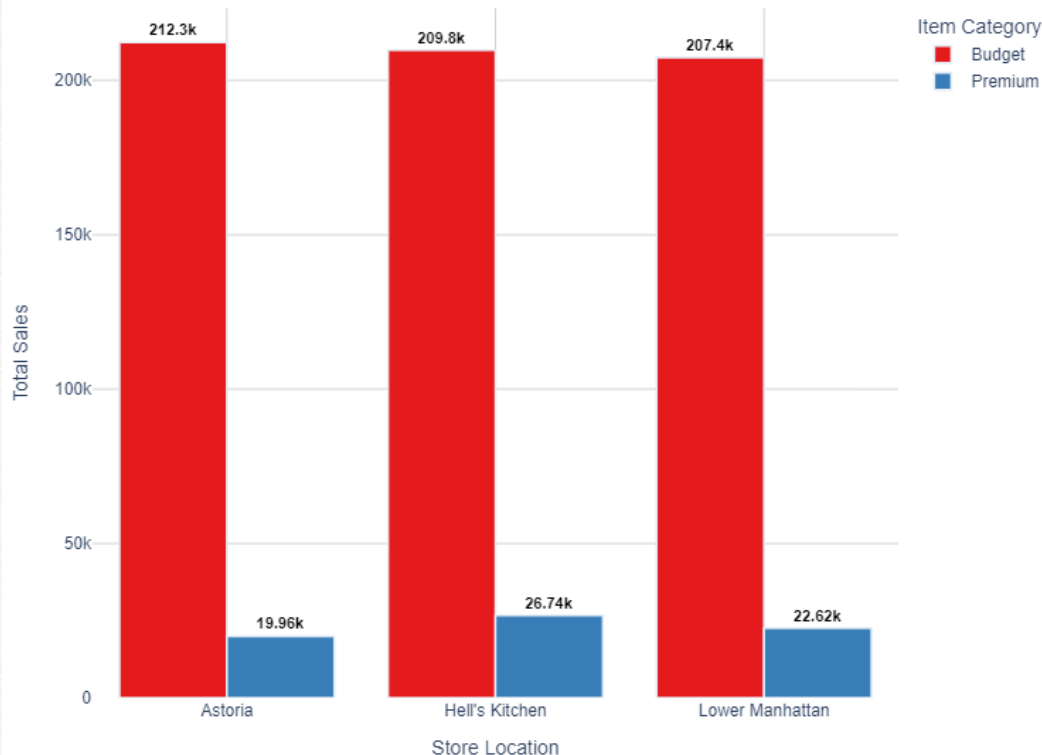
- **Lower Manhattan** has the highest average transaction value at **\$4.81**, suggesting higher per-transaction spending compared to other locations.
- **Hell's Kitchen** follows at **\$4.66**, with Astoria at **\$4.59**, indicating that spending per transaction is slightly lower in these areas.

Business Insights

- **Capitalize on Lower Manhattan:** Introduce premium products or upselling to boost transaction value further.
- **Enhance Hell's Kitchen & Astoria:** Consider exclusive offerings or promotions to encourage higher spending at these locations.

How do sales of premium items (e.g., higher-priced coffees) compare to budget options across different store locations?

Sales Comparison of Premium vs Budget Items Across Store Locations



Interpretation

- **Budget items** significantly outperform **premium items** in total sales across all locations.
- In **Astoria**, **budget items** generate **\$212.3k** in sales, while **premium items** only contribute **\$19.96k**.
- **Hell's Kitchen** and **Lower Manhattan** show similar patterns, with budget items consistently leading in sales.

Business Insights

- **Prioritize budget items** by maintaining stock and promoting them for maximum sales.
- **To boost premium item** sales, consider bundling with budget items or implementing targeted marketing strategies.

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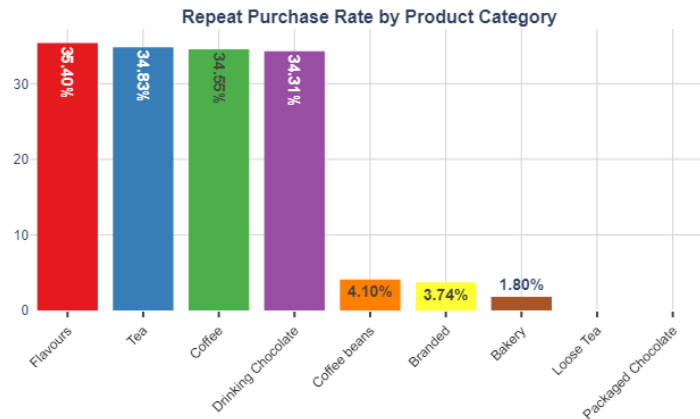
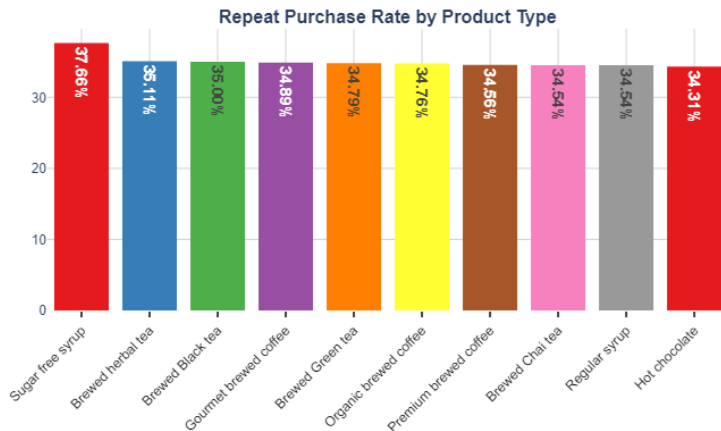
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Operational Efficiency



Which products have the highest repeat purchase rate, indicating customer loyalty and demand consistency?

Top 10 Product Types and Categories by Repeat Purchase Rate



Interpretation

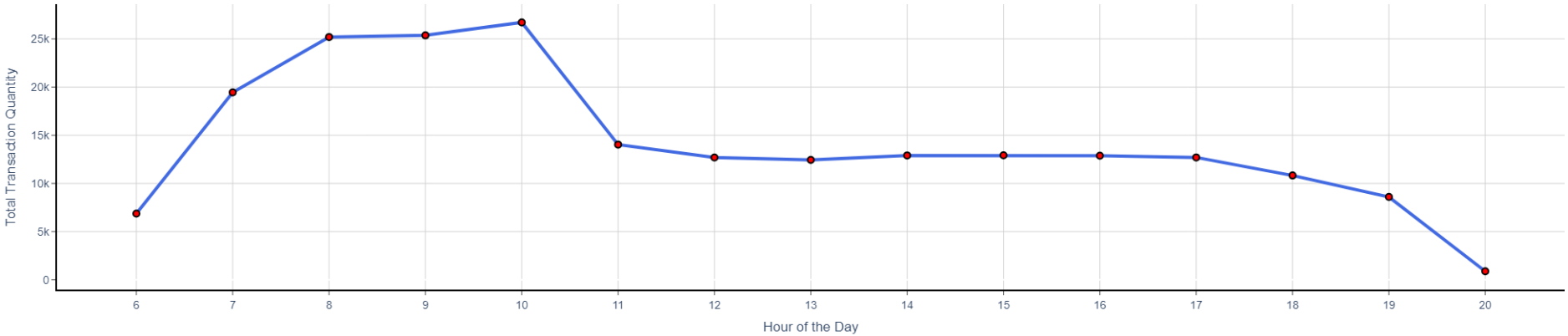
- **Sugar Free Syrup, Brewed Herbal Tea, and Brewed Black Tea** show the highest repeat purchase rates at around **35%-37%**.
- **Flavours, Tea, and Coffee** categories also exhibit strong repeat purchase rates, indicating good customer retention for these products.

Business Insights

- **Focus** on high-repeat purchase items like **Sugar Free Syrup** and **Brewed Herbal Tea** to enhance customer loyalty.
- **Consider** introducing loyalty programs or promotions to further encourage repeat purchases.

What is the relationship between transaction time (hour of the day) and transaction size?

Hourly Sales Quantity



Interpretation

- **Peak transaction** volumes occur between **8 AM-10 AM**, followed by a decline.
- Transaction volumes **stabilize** through the **afternoon** and taper off in the **evening**.
- **Early mornings** are the **busiest**, with steady activity in the afternoon and slower sales in the evening..

Business Insights

- **Increase staffing and inventory** during **peak morning hours** to handle high transaction volumes.
- **Ensure steady resources** in the **afternoon** for smooth operations.
- **Introduce evening promotions or special offers** to boost sales during **slower hours**.

Conclusion

In conclusion, by aligning inventory, staffing, and promotional strategies with transaction peaks, best-selling products, and customer preferences, we can optimize sales and improve customer retention across all locations. Tailored marketing, smarter inventory management, and targeted promotions will not only drive higher revenue but also strengthen customer loyalty and satisfaction, ultimately fostering long-term growth and operational efficiency.

Thanks!