



# **CUSTOMER TRANSACTION ANALYSIS**

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# INTRODUCTION

This analysis focuses on understanding key factors affecting customer transactions, such as store types, payment methods, discounts, and promotions. By examining transaction data, we aim to gain insights into customer behavior and purchasing patterns, ultimately informing retail strategies.

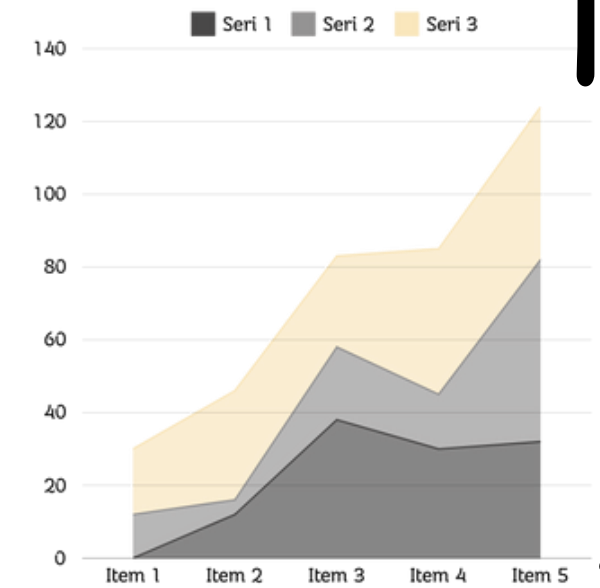
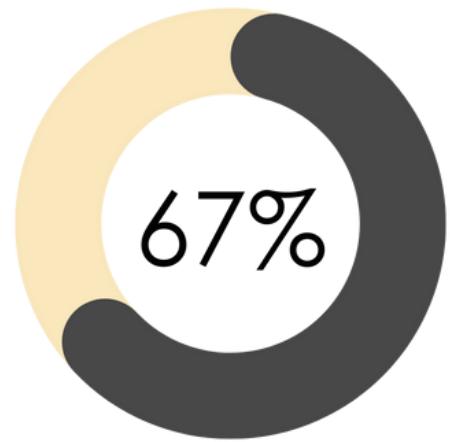
# PROBLEM STATEMENT

We aim to answer critical questions about how the average transaction amount varies by store type and season, which payment methods are common in high-value transactions, the effect of discounts on sales, cities with the highest number of items per transaction, and how different promotions drive transaction amounts across seasons.

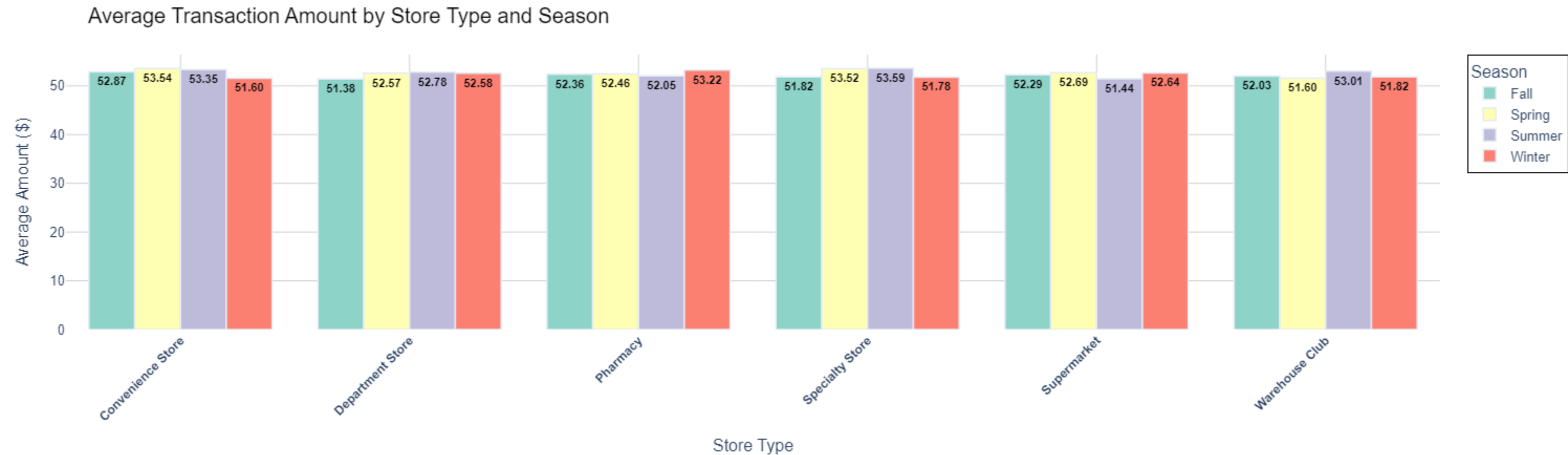
# HYPOTHESIS

Transaction amounts are expected to vary across store types and seasons, with specific payment methods, discounts, and promotions influencing higher transaction values. Cities with higher purchasing power are likely to show greater transaction volumes, and promotion effectiveness will vary by type and season.

# FINDING INSIGHTS



# 1. WHAT IS THE AVERAGE TRANSACTION AMOUNT (\$) ACROSS DIFFERENT STORE TYPES, AND HOW DOES IT VARY BY SEASON?



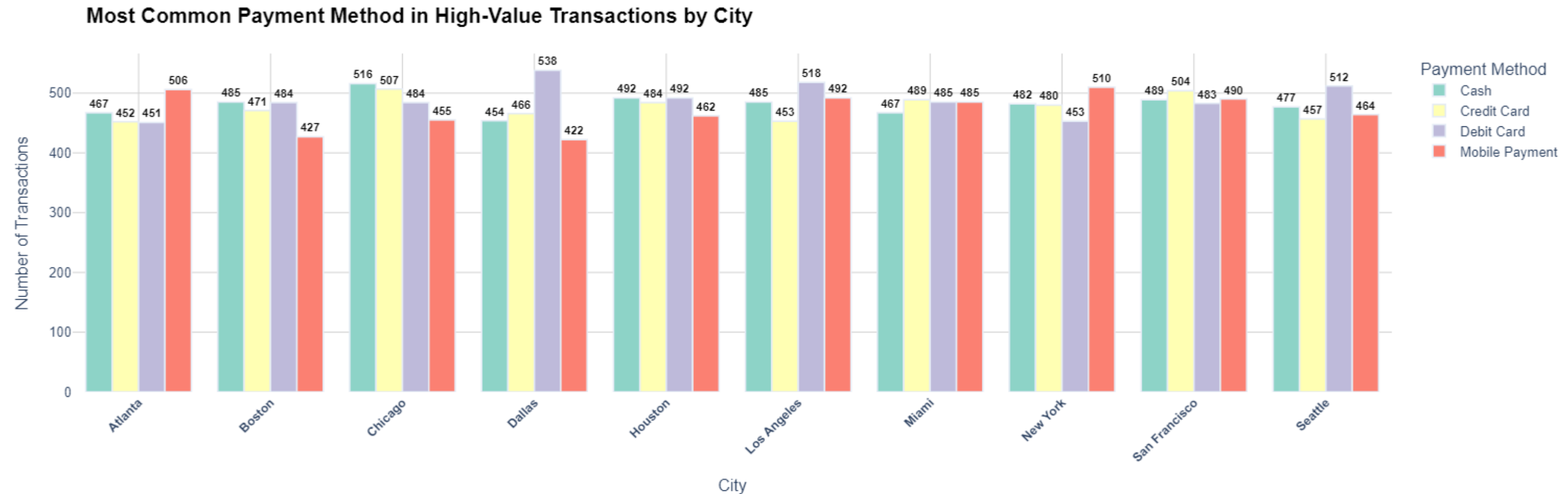
## Key Insights:

- Convenience Stores: Peak in **Spring** (\$53.54), lowest in **Winter** (\$51.60).
- Department Stores: Highest in **Spring** (\$52.78), lowest in **Fall** (\$51.38).
- Pharmacies: Best performance in **Winter** (\$53.22), lowest in **Summer** (\$52.05).
- Specialty Stores: Peak in **Summer** (\$53.59), lowest in **Winter** (\$51.78).
- Supermarkets: Best in **Spring** (\$52.69), lowest in **Summer** (\$51.44).
- Warehouse Clubs: Highest in **Summer** (\$53.01), lowest in **Spring** (\$51.60).

## Recommendations:

- Focus promotions in **Spring** for Convenience Stores and Supermarkets.
- Increase marketing in **Spring** for Department Stores and target **Fall** for improvement.
- Capitalize on **Winter** for Pharmacies with seasonal offer
- Optimize strategies in **Summer** for Specialty Stores and Warehouse Clubs.

## 2. Which payment method is most commonly used in high-value transactions (above the average transaction amount), and how does it differ across cities?



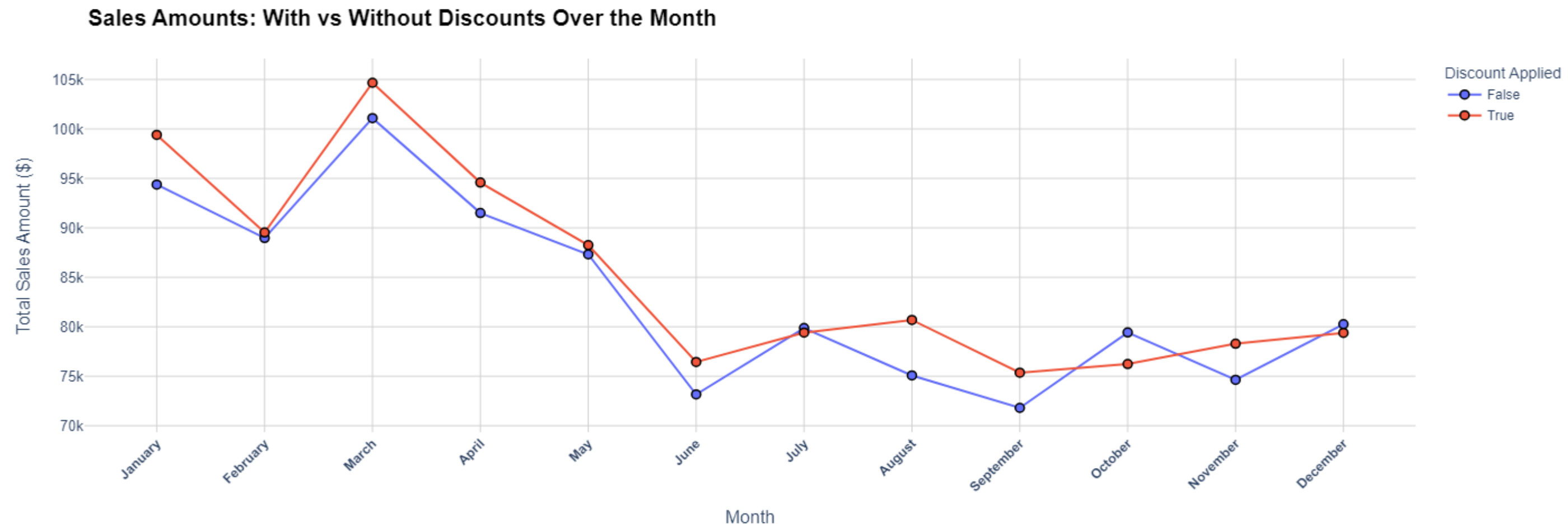
### Key Insights:

- Debit Card: Most preferred in **Dallas, Los Angeles, New York**, and **Seattle**.
- Cash: Dominates in **Boston, Chicago, Miami**, and **Houston (tie)**.
- Mobile Payment: Leads in Atlanta.
- Credit Card: Preferred in San Francisco.

### Recommendations:

- Atlanta: Offer discounts or loyalty programs for **mobile payments**.
- Boston, Chicago, Miami: Enhance **cash-handling** processes and incentivize **digital payments**.
- Dallas, Los Angeles, Seattle: Strengthen **debit card** security and user experience.
- Houston: Highlight benefits of digital payments to shift preference.
- San Francisco: Introduce **credit card-based** rewards to capitalize on its popularity.

### 3. How do the sales amounts in transactions with discounts compare to those without discounts, and what trends can be observed over the month?



#### Key Insights:

- January to March:** Discounted sales consistently surpass non-discounted sales, peaking at \$105k in March.
- April to June:** Both sales categories decline, with sharper drops in non-discounted transactions.
- July:** Non-discounted sales exceed discounted sales.
- August to September:** Discounted sales rise briefly in August but decline alongside non-discounted sales in September.
- October to December:** Non-discounted sales rebound strongly, surpassing discounted sales in October and December.

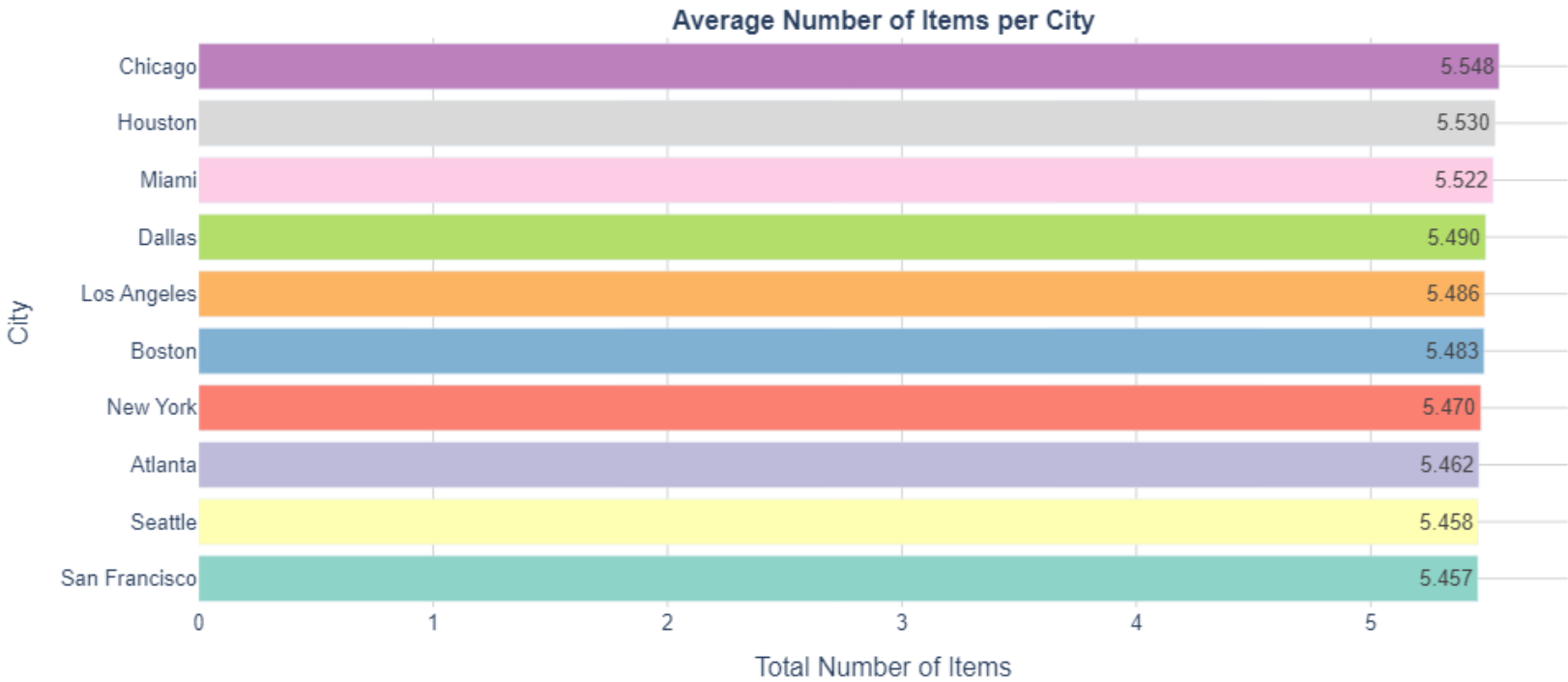
#### Recommendations:

- Early Year:** Prioritize discounts to maximize sales.
- Mid-Year:** Shift focus to non-discount strategies like bundling or loyalty rewards.
- Late Year:** Capitalize on rising non-discounted sales with value-based promotions and premium offerings.



# 4. What are the top three cities with the highest average number of items per transaction, and how do their sales amounts vary across seasons?

Average Items per City & Sales Across Seasons for Top Cities



## Key Insights:

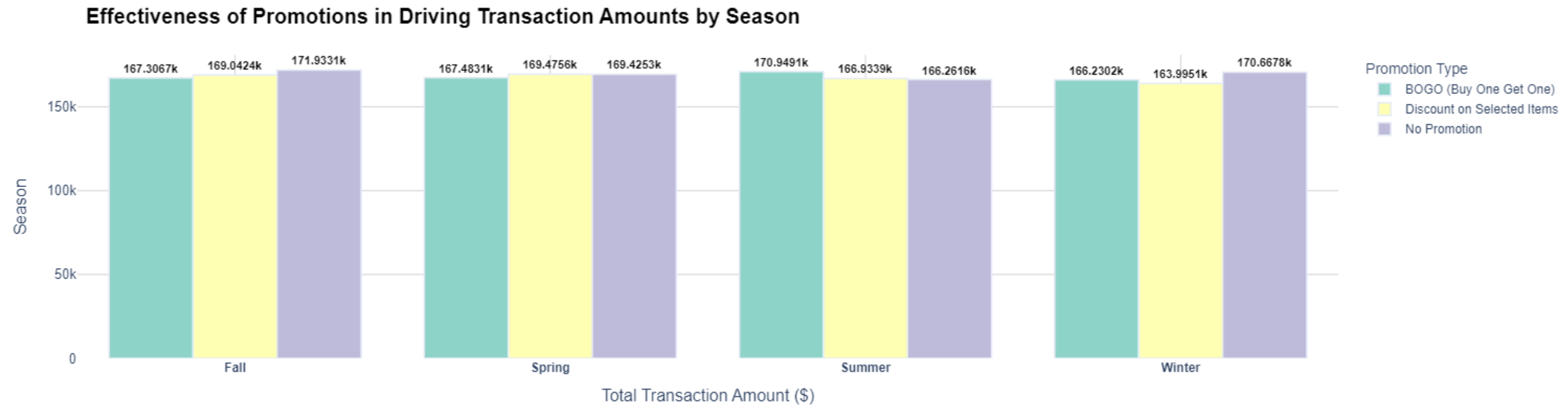
- Chicago:** With the highest average of 5.548 items per transaction, **Chicago's** sales vary across seasons: **Fall** at \$50.343k, **Spring** at \$51.831k, **Summer** at \$51.262k, and **Winter** at \$51.710k.
- Houston:** Houston follows closely with 5.530 items per transaction, with sales amounts of \$52.118k in **Fall**, \$50.388k in **Spring**, \$50.165k in **Summer**, and \$50.565k in **Winter**.
- Miami:** Miami averages 5.522 items per transaction, with sales amounts of \$53.000k in **Fall**, \$50.268k in **Spring**, \$49.756k in **Summer**, and \$47.964k in **Winter**.

## Recommendations:

- **Chicago:** Leverage Chicago's consistently high number of items per transaction by maintaining strong inventory and promotions throughout the year.
- **Houston:** Focus on **Fall**, which has the highest sales, while ensuring steady performance across other seasons.
- **Miami:** Despite lower sales in **Winter**, **Miami** can boost sales with targeted promotions and seasonal offerings, taking advantage of the high average number of items per transaction.



## 5. How effective are different promotions in driving higher transaction amounts, and which promotion type performs best in each season?



### Key Insights:

- Fall:** **No Promotion** performs best (\$171.93k), surpassing both **BOGO** (\$167.31k) and **Discount on Selected Items** (\$169.42k).
- **Spring:** **Discount on Selected Items** leads (\$169.48k), slightly higher than **No Promotion** (\$169.43k) and **BOGO** (\$167.48k).
- **Summer:** **BOGO** outperforms (\$170.95k), with lower results for **Discount on Selected Items** (\$166.93k) and **No Promotion** (\$166.26k).
- **Winter:** **No Promotion** dominates (\$170.67k), ahead of **BOGO** (\$166.23k) and **Discount on Selected Items** (\$163.99k).

### Recommendations:

- Fall & Winter:** Minimize promotions and emphasize value to capitalize on natural purchasing trends.
- Spring:** Utilize targeted discounts on selected items to attract shoppers.
- Summer:** Implement BOGO offers to maximize transaction amounts.

# CONCLUSION

In conclusion, our findings highlight the importance of aligning business strategies with seasonal trends, regional preferences, and customer behaviors. By optimizing promotions, tailoring payment options, and focusing on high-performing segments, businesses can enhance efficiency, boost sales, and improve customer satisfaction, ultimately driving profitability and long-term success.



**THANK YOU**