Investigation of Starbucks Promotions

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Introduction & Goals

Topic Introduction

Effectiveness of Starbucks Promotions

- 10 promotions
- Dataset of customer interactions
    - Received/viewed/completed offer
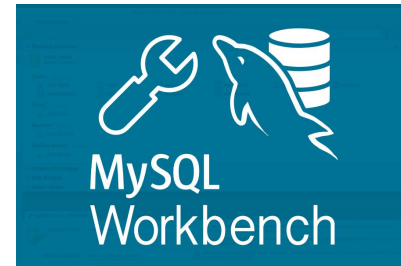   - Transaction (purchase)
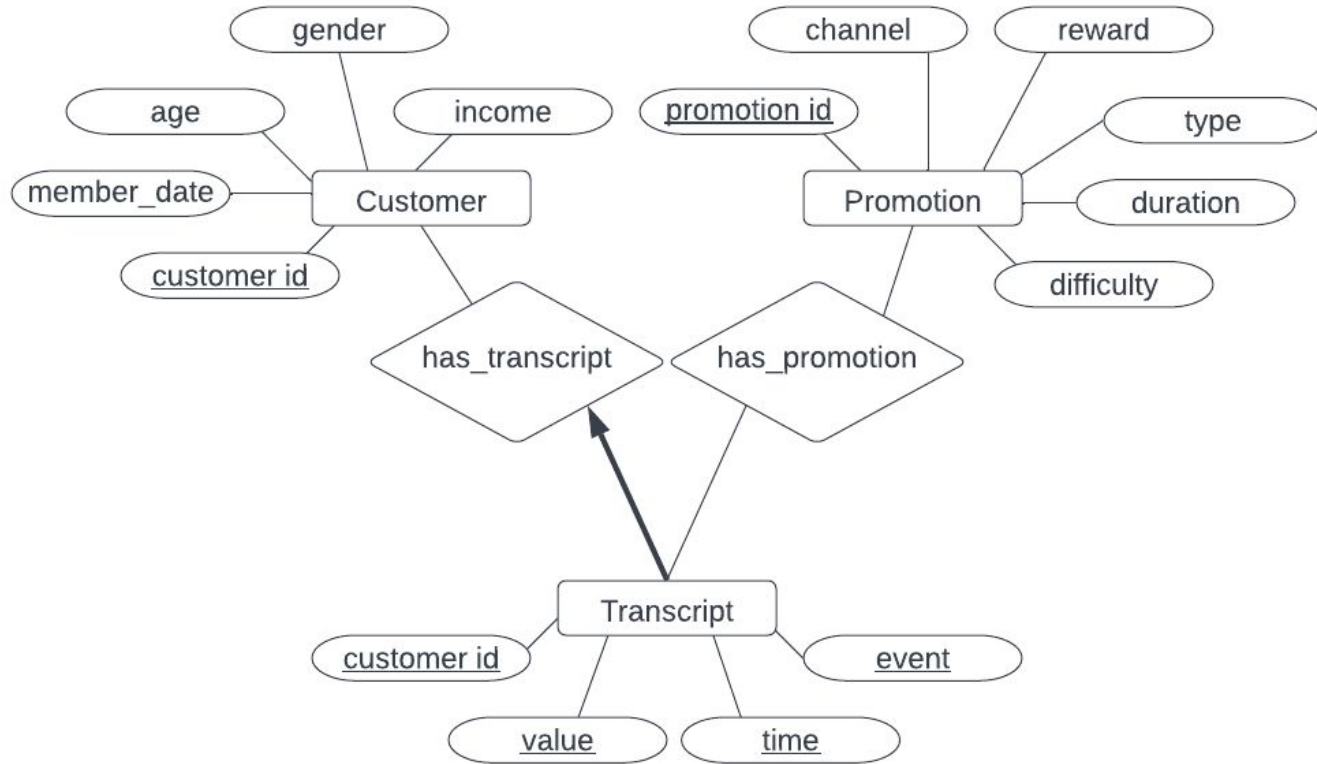- 17,000 customers

Goals

Understand…

- Factors (age, income, gender, etc.) that impact a customer's interactions with Starbucks.
- If some promotional channels are more effective than others.
- Differences between frequent and infrequent customers and how they interact with Starbucks and promotions.

Dataset & Tools Used

Tools Used

ER Diagram

Data Preprocessing

Duplicates, Missing Values, and View Creation

Duplicates:

- ○ Some records in the transcript were completely identical (customer id, event, offer, time)
- ○ Deleted duplicates to make primary key

Missing Values (gender, age, income):

- ○ Removed rows with missing values for queries involving these attributes

Views:

- ○ Offer_completed
- ○ Offer_recieved
- ○ Offer_viewed
- ○ Frequency
- ○ Percentage_completed
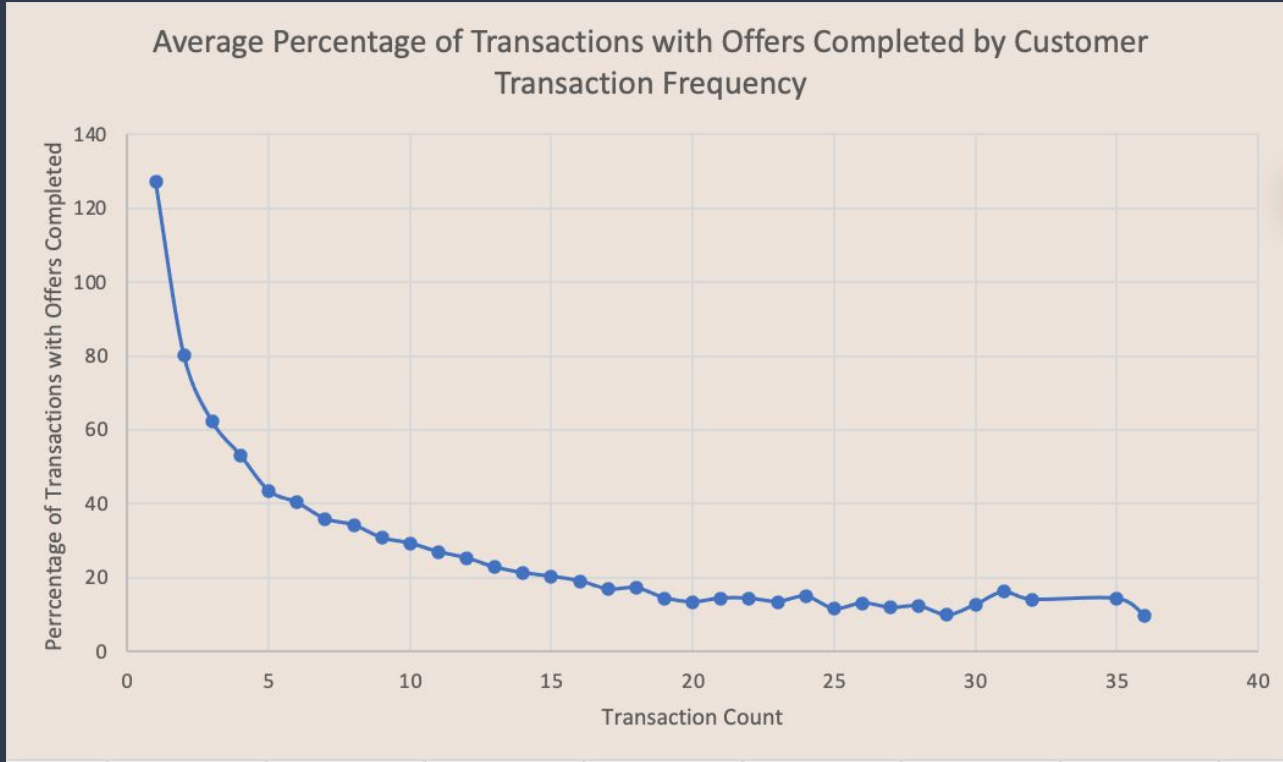- ○ Transactions

Queries & Analysis

Query #1: Percent of Transactions that Use Promotions

Goal: Understand the relationship between frequency of using promotions and frequency of completing transactions at Starbucks.

Details

- Created the percentage_completed view
- Averaged percentages across groups based on number of transactions
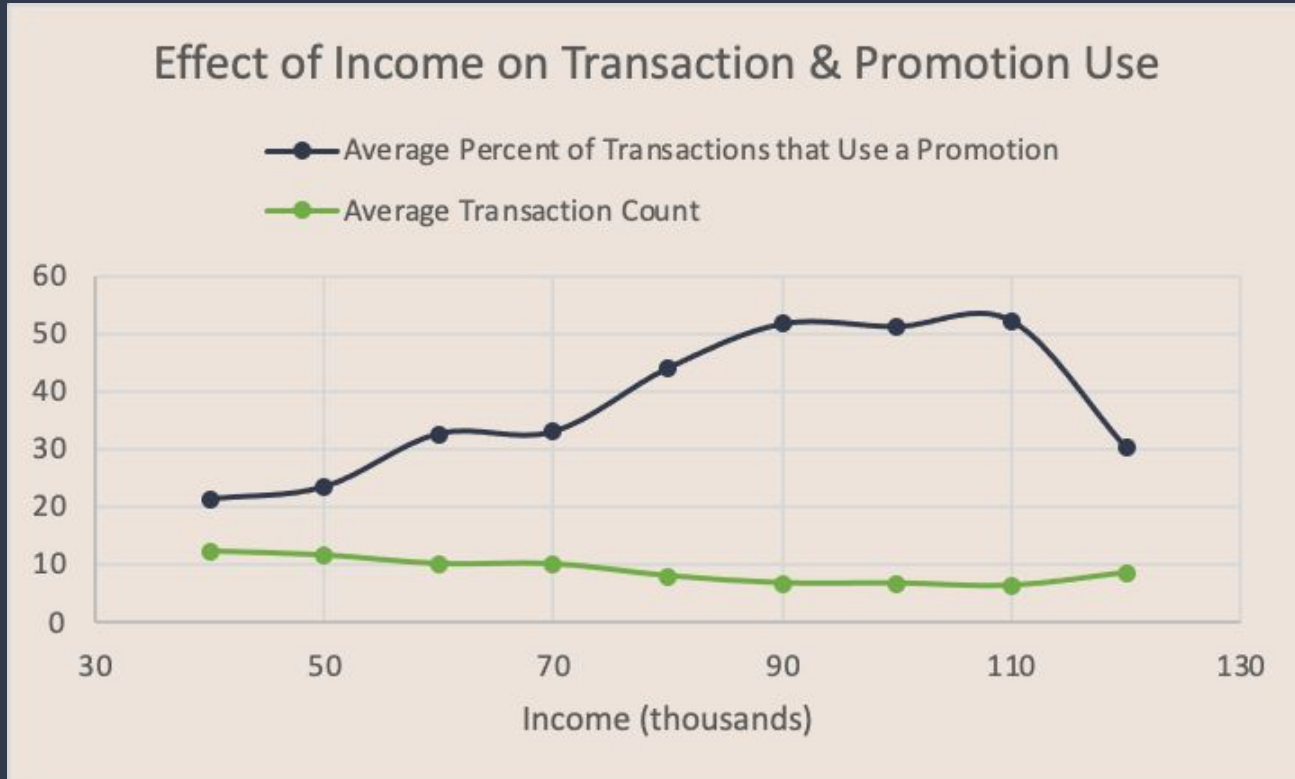- Graphed the results for visual analysis

Analysis #1

Query #2: Income & Use of Promotions

Goal: Develop an understanding of the relationship between income and the use of promotions in transactions.

Details

- Joined the profile table with the percentage_completed view
- Grouped by income ranges
- Created graph for visual analysis

Analysis #2

Query #3: Age & Use of Promotions

Goal: Investigate the relationship between age and the use of promotions in transactions.

Details

- Placed customers into 10-year age ranges
- Calculated average number of transactions for each age range
- Calculated average percentage of transactions that used an offer for each age range

Analysis #3

Effect of Age on Transaction & Promotion Use

- Average Percent of Transactions that Use a Promotion
- Average Transaction Count
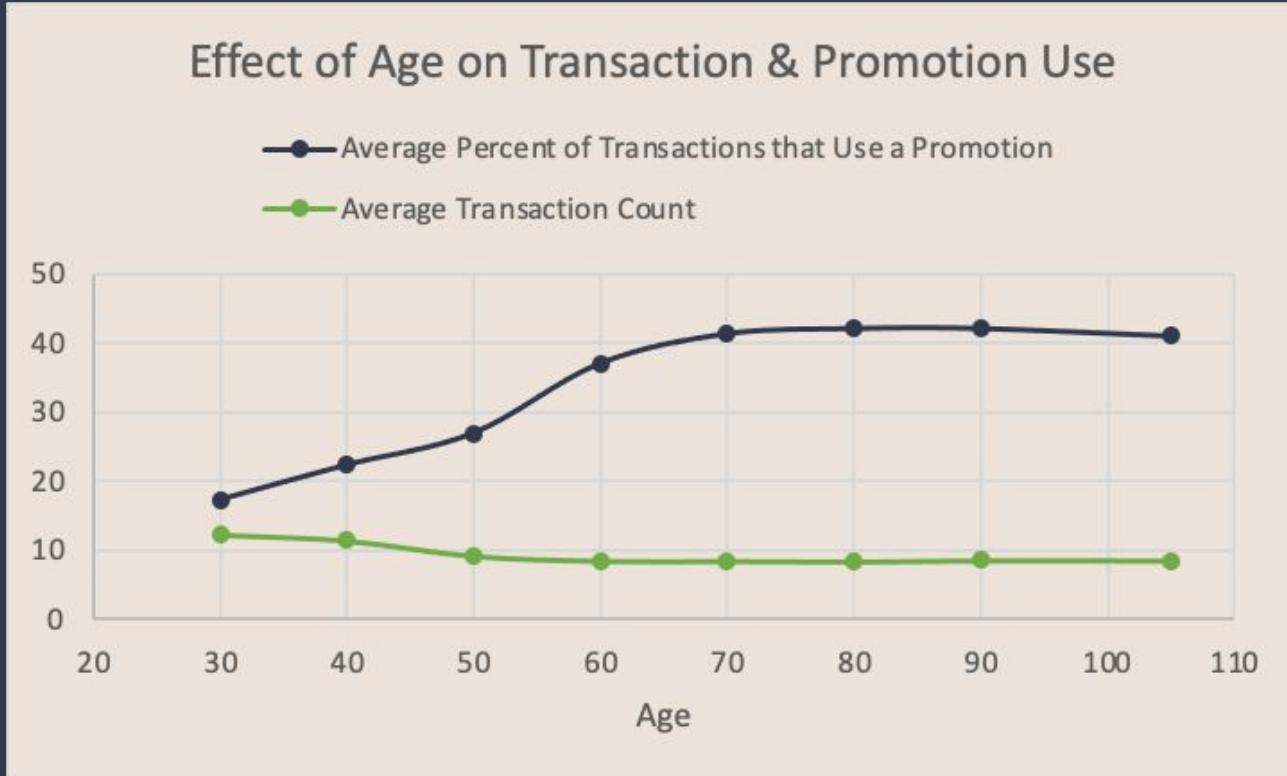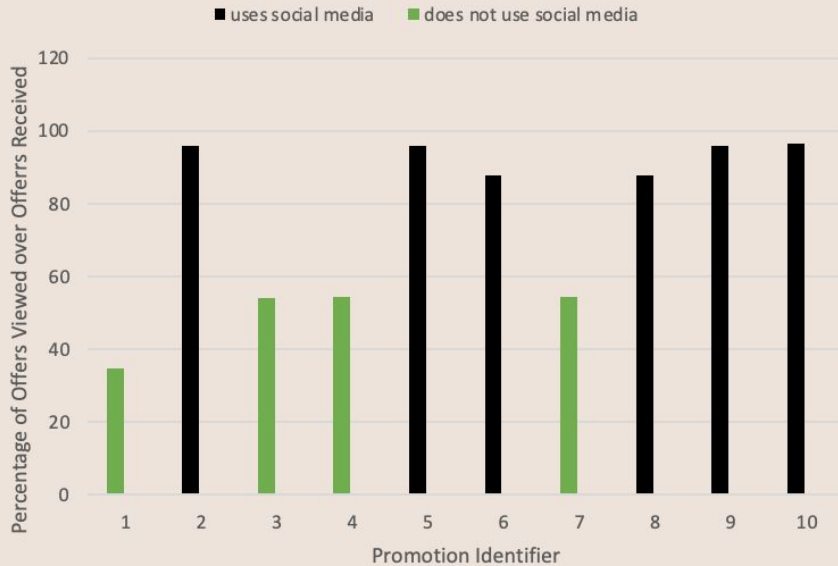
Query #4: Percent of Promotions Viewed

Goal: Investigate the relationship between percentage of transactions viewed and channels of dissemination.
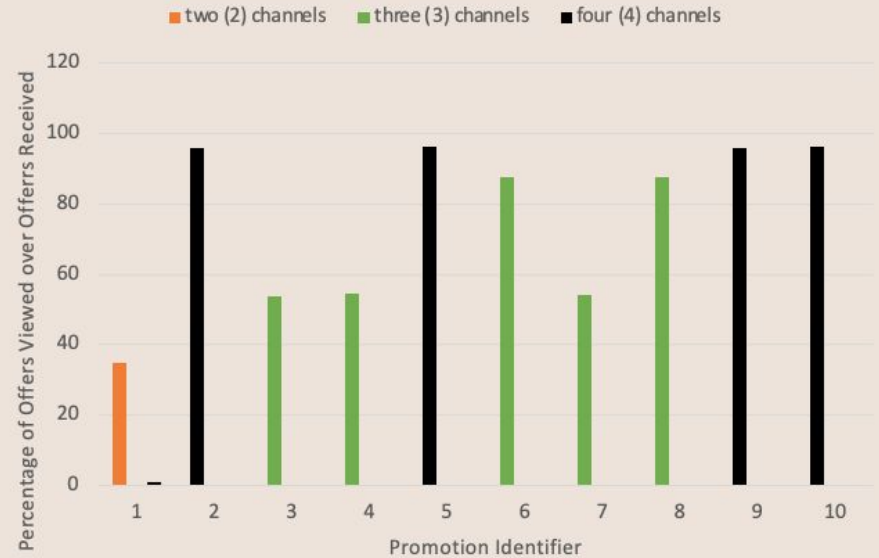
Details

- ○ Calculated number of offer_received, offer_viewed, and offer_completed events for each promotion
- ○ Calculated percentage of offers viewed out of offers received (view rate)
- ○ Compared view rate by number and type of channels used to promote the offer

Analysis #4

Conclusion & Future Work

Conclusion

The results of our query analysis could be helpful for Starbucks to understand how factors such as income, age, and promotion channel impact the effectiveness of promotions.

Key trends:

○ Less frequent customers have a higher usage of promotions than more frequent customers.
○ As customer age increases, usage of promotions increases.
○ As customer income increases past 110k, usage of promotions decreases.
○ Promotions that had a higher number of channels (web, email, mobile, social) were more effective.

Future Work

- Explore the interaction between multiple customer attributes and analyze the trends that appear.
- Explore the interaction between gender and analyze the trends that appear.

Thank you!
Questions?