June 2020

Category review: Chips

Retail Analytics

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Classification: Confidential

Our 17 year history assures best practice in privacy, security and the ethical use of data

Privacy

- We have built our business based on privacy by design principles for the past 17 years
- Quantium has strict protocols around the receipt and storage of personal information
- All information is de-identified using an irreversible tokenisation process with no ability to re-identify individuals.

Security

- We are ISO27001 certified - internationally recognised for our ability to uphold best practice standards across information security
- We use 'bank grade' security to store and process our data
- Comply with 200+ security requirements from NAB, Woolworths and other data partners
- All partner data is held in separate restricted environments
- All access to partner data is limited to essential staff only
- Security environment and processes regularly audited by our data partners.

Ethical use of data

Applies to all facets of our work, from the initiatives we take on, the information we use and how our solutions impact individuals, organisations and society.

We all have a responsibility to use data for good

Quantium believes in using data for progress, with great care and responsibility. As such please respect the commercial in confidence nature of this document.

Executive summary

01 **Customer Transaction and Product Analysis**

- Top performing customer segments: Older Families (Budget), Young Singles/Couples (Mainstream), Retirees (Mainstream)
- Customers from Older Family - Budget spent the most on chips, despite their small population. Customers from New Family - Premium spent the least. In combination of all premium levels, customers from Older Singles/Couples segment contributed to the highest purchase value, suggesting potential for targeted marketing. For the Retirees segment, Mainstream customers outspent other groups.
- Kettle, Dorito & Pringles are mostly preferred for purchase across segments. In addition, Tyrrells and Twisties are more popular in Mainstream segment whereas Burger chips are slow on sales.

02 **Store Trial Assessment**

- Upon the data wrangling and analysis process, we have found the following trial - control store pairs matched based on performance metrics (Total Sales & Number of Customers):
    - Trial Store 77 - Control Store 233
    - Trial Store 86 - Control Store 155
    - Trial Store 88 - Control Store 237
- Both Trial Store 77 and 88 experienced positive sales increase during the trial period. Trial Store 86, on the other hand, did not well surpass its control store's performance despite a high increase in customer volume.

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01

Customer Transaction & Product Analysis

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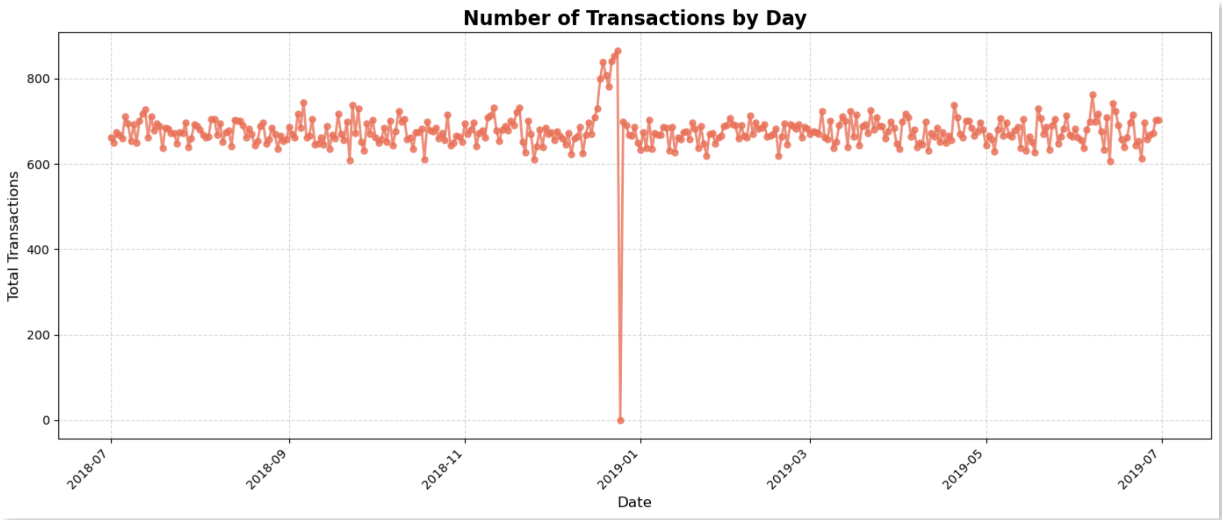
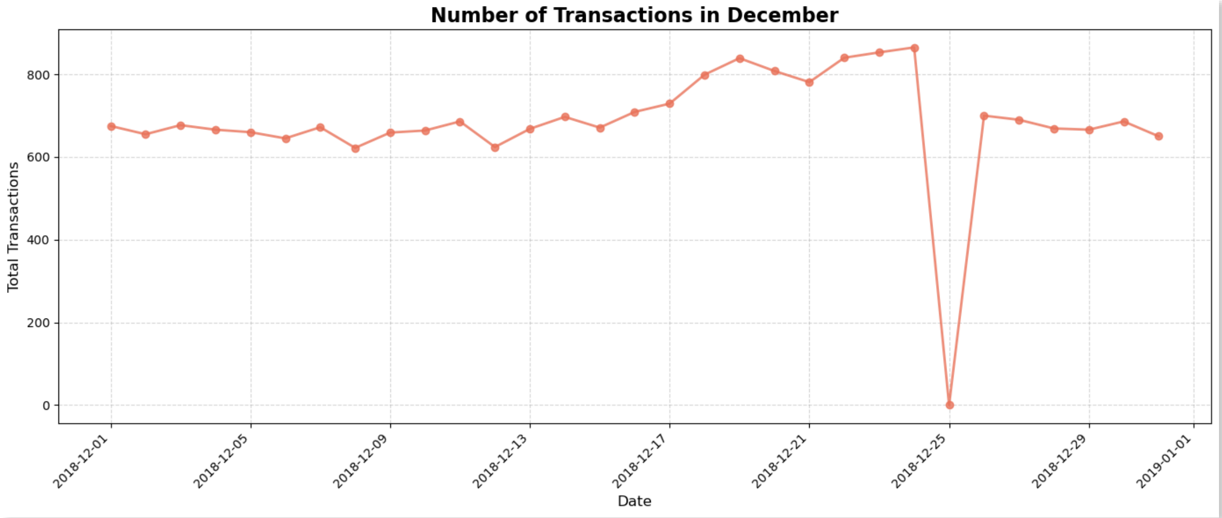
Transaction YoY 2018 - 2019



- There is a dip in sales on December 25, 2018 (no sales recorded), due to store closures on the National Holiday.
- *Business Recommendations:* Introduce holiday-themed packaging and promotions in December to capitalize on the seasonal increase in sales. To offset sales loss during National Holiday(s) (e.g.: Christmas), it is a good idea to offer extended promotions around holidays to generate interests and increase sales volume.

- Sales remained consistent throughout the years
    - Average transactions per month is 20,562
    - There is an upward trend in sales due to the seasonality effect happening during the holiday season (November to December)
    - Maximum number of transactions recorded is 21,225 in December 2018



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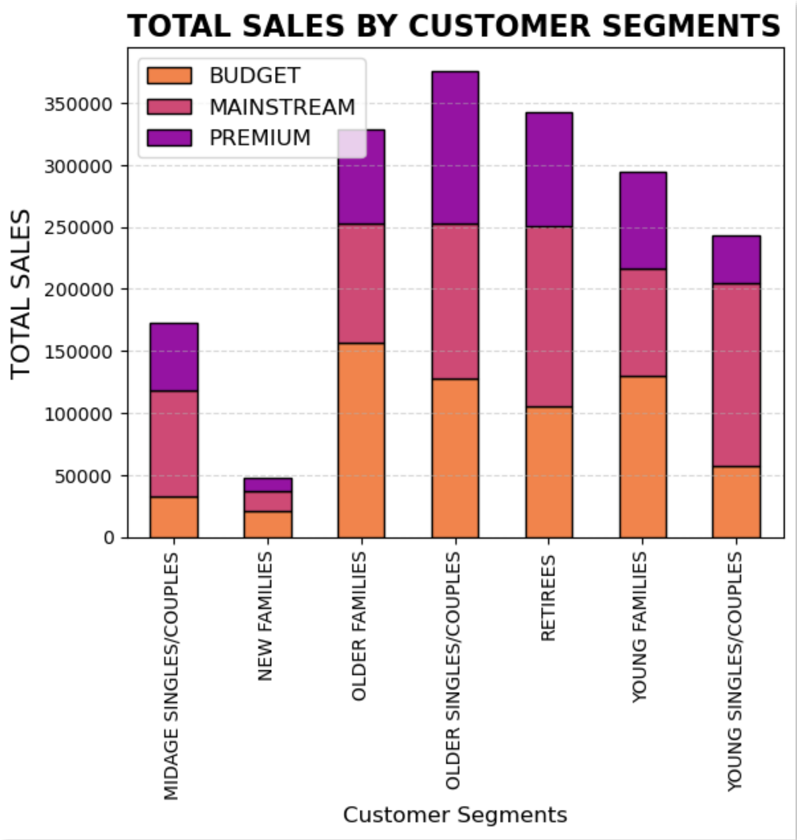
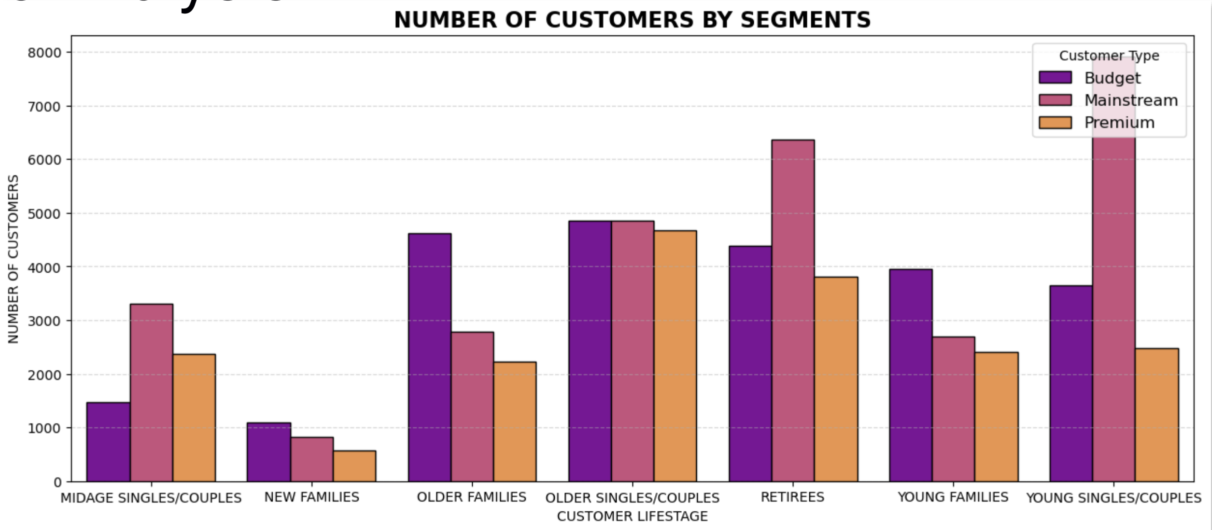
Customer Affluence & Life Stage Analysis





- Majority of customers are Retirees and Young Singles/Couples in the Mainstream level. This contributes to there being more sales to these customer segments, but this is not a major driver for the Budget - Older Families segment.
- Customers from Older Family - Budget spent the most on chips ($156863.75 of Total Sales), despite their small population. Customers from New Family - Premium spent the least ($10760.80). Customers from Older Singles/Couples segment contributed to the highest purchase value ($376013.65). Retirees segment, Mainstream customers outspent other groups.
- *Business Recommendations:*
  - For Older Families (Budget), the business should offer value packs (e.g., Buy 2, Get 1 Free) to capture their high total spend despite smaller population size.
  - For Retirees (Mainstream), focus on affordable, trusted brands with cross-promotions (e.g., dips with chips) to maximize sales and cater to their diet preferences.
  - Older Singles/Couples (All Premium Levels): Promote premium experiences with gourmet or healthier chip options.
  - - Young Singles/Couples (Mainstream): Focus on trendy promotions with fun and premium brand combos.

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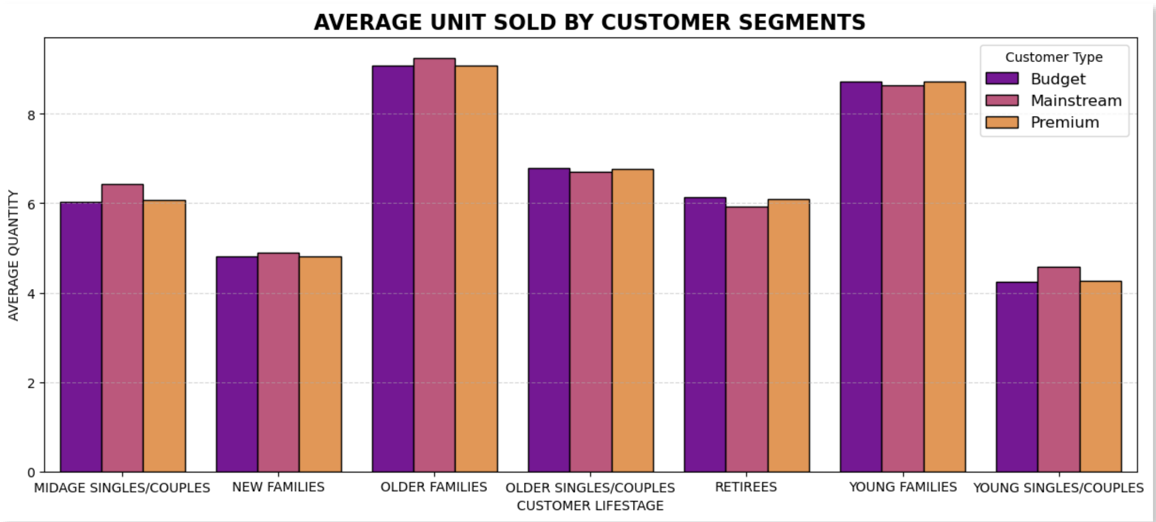
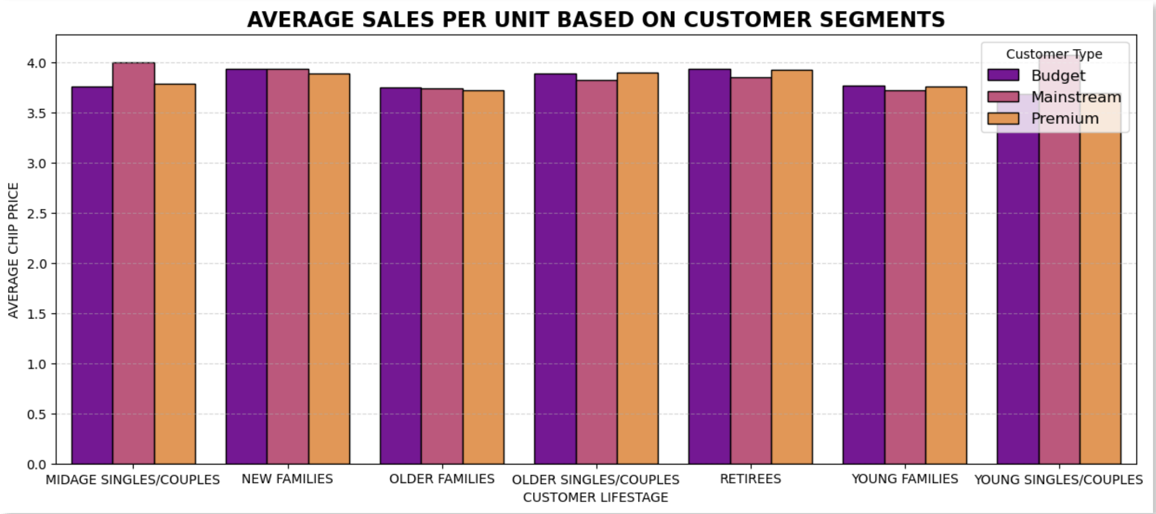
Customer Affluence & Life Stage Analysis



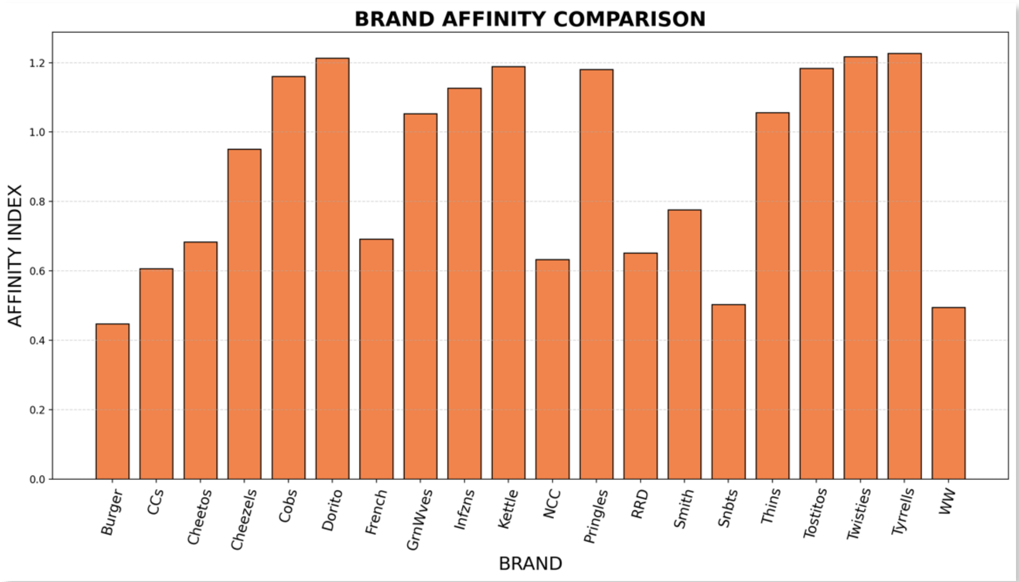
- The average chip quantity per customer is higher for Older Families and Young Families in general, with each premium level contributed to likely the same number of unit average.
    - For Older Families:
        - Budget & Premium Levels: 9.07 packs
        - Mainstream Level: 9.25 packs
    - For Young Families:
        - Budget & Premium Levels: 8.7 packs
        - Mainstream Level: 8.6 packs

→ This sales pattern is reasonable as these customers might have more children or have more open diet preferences, which leads to higher chips consumption. It is recommended to promote value-oriented packs to capture their high demand.

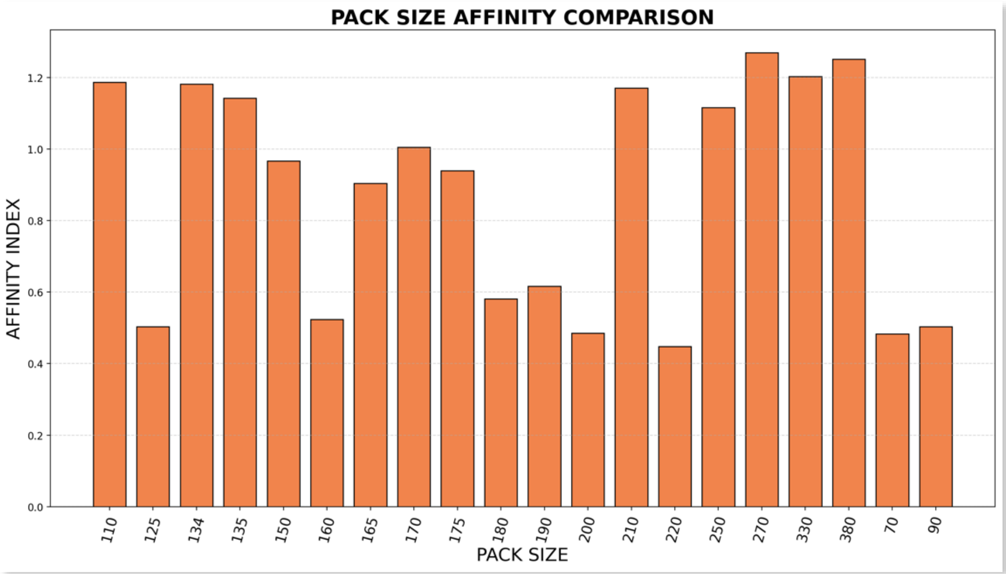


- Upon hypothesis testing, the average price per unit for Mainstream - Young to MidAge Singles & Couples is statistically different than the average price per unit for Budget/Premium - Young to MidAge Singles & Couples, indicating that the Mainstream shoppers are willing to pay more per units for chips.
    - For Young Singles & Couples (Mainstream): $4.07
    - For MidAge Singles & Couples (Mainstream): $4
- Due to various factors, such as shopping habits and diet preference, shoppers from Budget & Premium might not consume chips as much as the Mainstream customers.
- *Business Recommendation:*
    - Optimize pricing & offering strategy: introduce premium lines or limited-edition flavors to cater to their willingness to pay more per unit.

Product Preference Analysis



- Within the Mainstream - Young Singles/Couples community, Kettle, Dorito & Pringles are mostly preferred for purchase (which are also popular across all segments). In comparison to other segments based on the Affinity Index, Tyrrells and Twisties are more popular with about 23% increased likeliness for purchase whereas Burger chips are 50% less preferable for purchase.
- *Business Recommendations:*
    - Tailor product offering based on brand insights
    - Consider partnering with these brands to introduce store exclusive flavorings to generate sales momentum



- The most common chip size bought by our target customers in the Mainstream - Young Singles/Couples segment is 175g, with almost 1000 units sold.
- The second popular pack size is 150g, with approximately 5700 units sold.
- In comparison to other segments based on the Affinity Index, chips with pack size of 270g are more likely to be purchased by the target group whereas 220g chip pack size reflects lowest volume of sales among target group in comparison to other segments.
- *Business Recommendation:*
    - Stock more 175g and 150g packs for Mainstream - Young Singles/Couples. Promote 270g packs, which show a higher likelihood of purchase based on Affinity Index, while considering adjustments for 220g packs due to lower demand.
    - Group popular brands/pack size together and place near complementary products to increase impulse purchases.

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02

Store Trial Assessment

Control & Trial Store Assessment

- In Pre-Trial period, the average sales per store per month is $586, along with an average of 1.14 transactions per customer and $3.81 per chip unit.
- During the trial period (from February to April 2019), the average sales per store per month is $573, indicating substantial impact on the stores' transaction values.

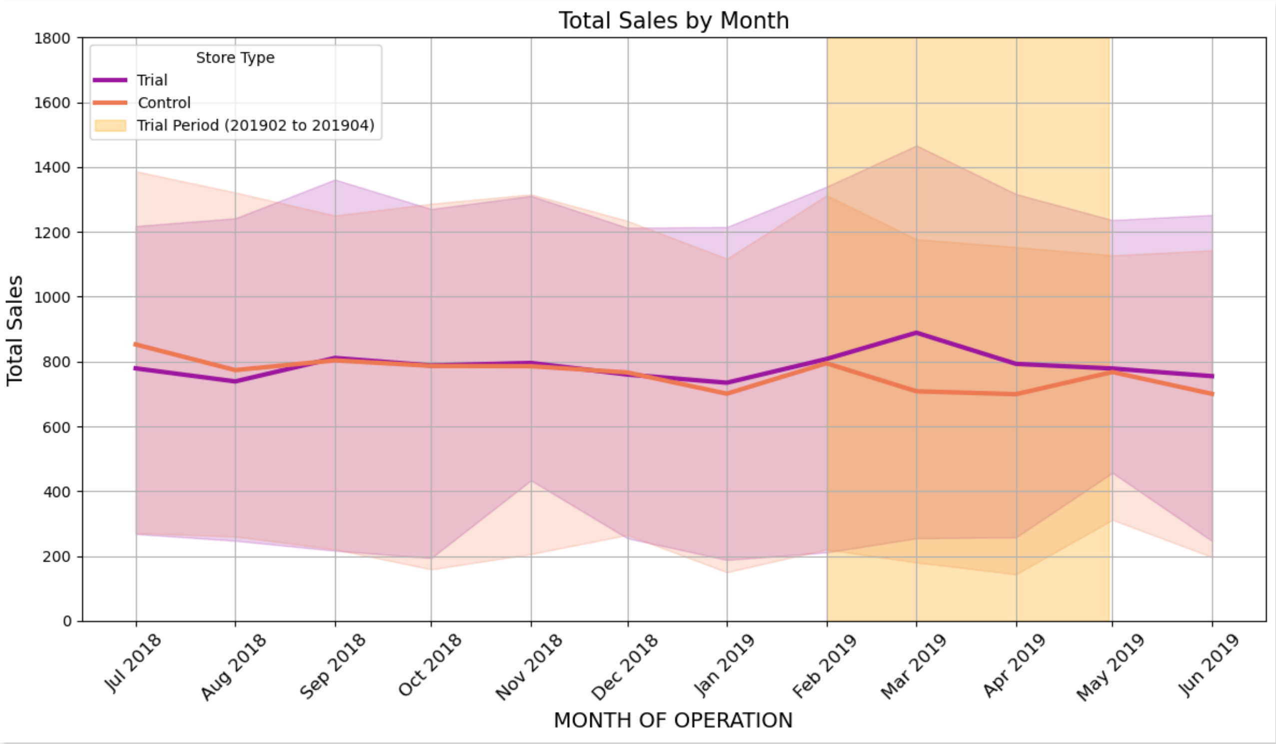
→ Even though with just 3 months of trial, multiple Key Performance Indicators, such as number of customers, transaction per customer, chips per customer and average price per unit remains relatively close to the 7 months of data pre-trial.

Explanation of Trial & Control Stores:

- Trial stores: 77, 86, 88
- Control stores: 233, 155, 237

→ Control stores are selected based on matches of performance metrics with trial stores. These stores will serve as the baseline (after scaling sales/customers metrics) to compare with trial stores for uplift assessment.

→ Total sales for trial stores (77, 86, 88) outperforms control stores during the trial period (highlighted in yellow stripe).



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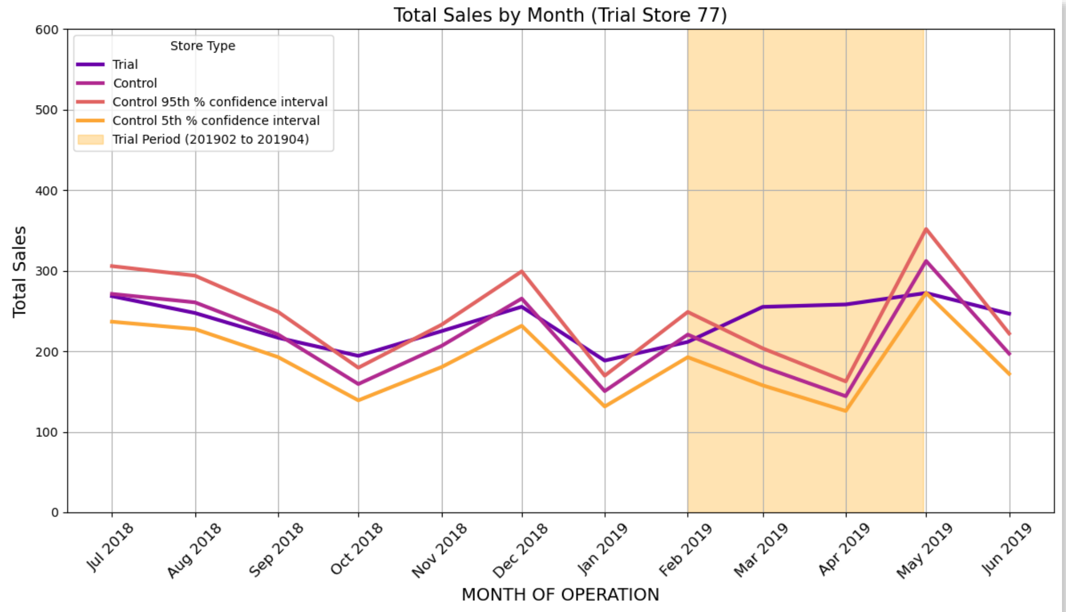
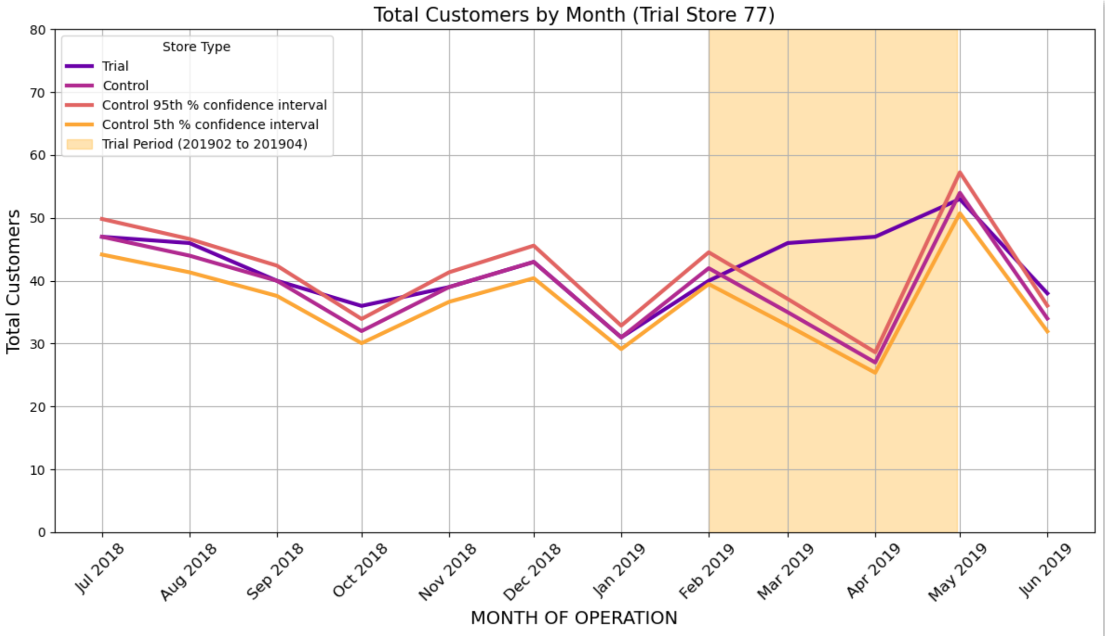
Control & Trial Store Assessment



- Upon hypothesis testing (t-test) and visualization development, it appears that total sales for trial store 77 is significantly higher than Control Store 233 (and its corresponding 95th percentile) in 2 out of 3 trial months (March & April)
- Average of Total Sales between Trial & Control Stores during trial period:
  - Trial Store: $211.6 (February), $255.1 (March), $258.1 (April)
  - Control Store (after scaling for comparability): $229.5 (February), $187.8 (March), $149.9 (April)



- Upon hypothesis testing (t-test) and visualization development, it appears that total customers for trial store 77 is significantly different than Control Store 233 (and its corresponding 95th percentile) in all 3 trial months (February to April)
- Average of Customers between Trial & Control Stores during trial period:
  - Trial Store: 40 (February), 46 (March), 47 (April)
  - Control Store (after scaling for comparability): 43 (February), 36 (March), 28 (April)
- Business Recommendation: Investigate what factors contributed to the success of Trial Store 77 (e.g.: marketing promotions, customer experience, or seasonal factors) and consider replicating these practices across other stores. It is important to engage & retain customers for sustainable success

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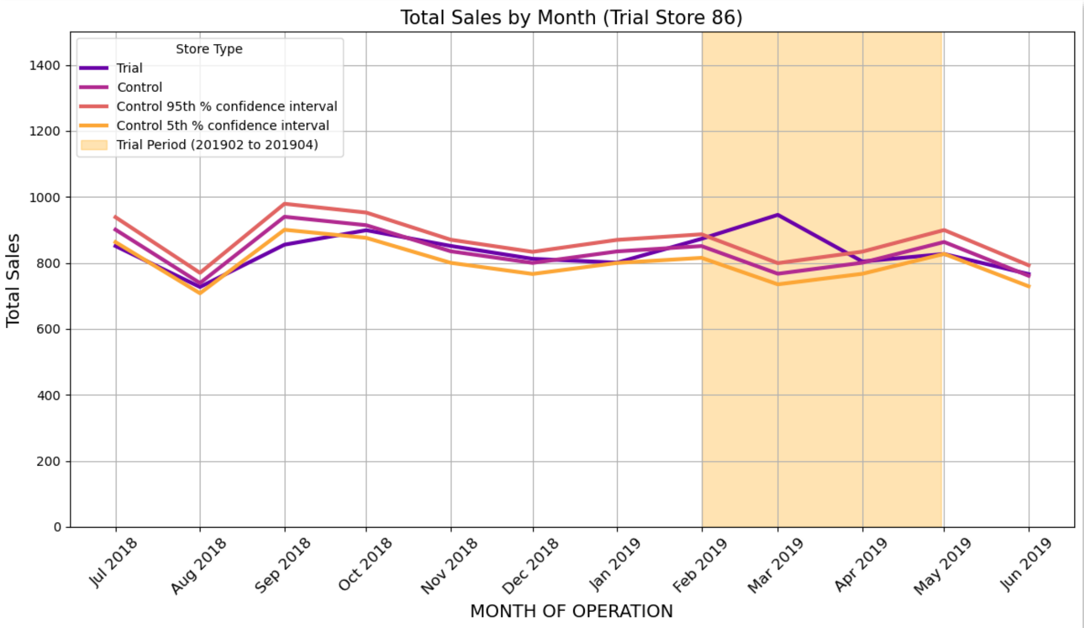
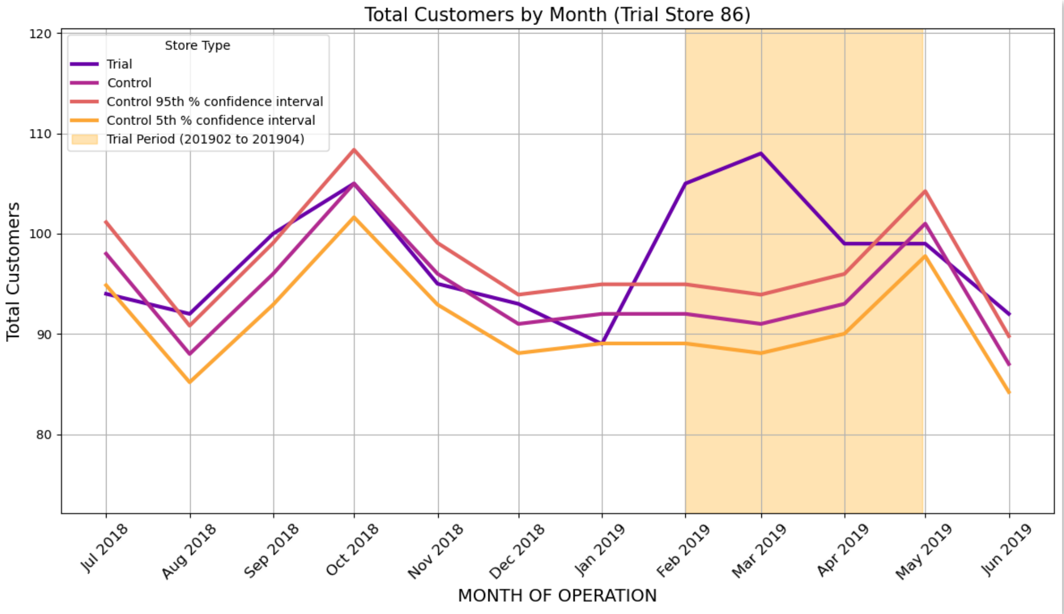
Control & Trial Store Assessment



- Upon hypothesis testing (t-test) and visualization development, it appears that total sales for trial store 86 is significantly higher than Control Store 155 (and its corresponding 95th percentile) in 2 out of 3 trial months (February & March)
- Average of Total Sales between Trial & Control Stores during trial period:
  - Trial Store: $872.8 (February), $945.4 (March), $804.0 (April)
  - Control Store (after scaling for comparability): $827.0 (February), $745.6 (March), $778.0 (April)



- Upon hypothesis testing (t-test) and visualization development, it appears that total customers for trial store 86 is significantly higher than Control Store 155 (and its corresponding 95th percentile) in all 3 trial months (February to April)
- Average of Customers between Trial & Control Stores during trial period:
  - Trial Store: 105 (February), 108 (March), 99 (April)
  - Control Store (after scaling for comparability): 93 (February), 92 (March), 94 (April)
- Business Recommendation: Check with the Category Manager if there were special deals in the trial store that were may have resulted in lower prices, impacting the results. Evaluating pricing strategies or conversion value is needed to increase overall sales. Different conversion techniques, such as personalized marketing, product upgrade can be employed to generate higher transaction value.

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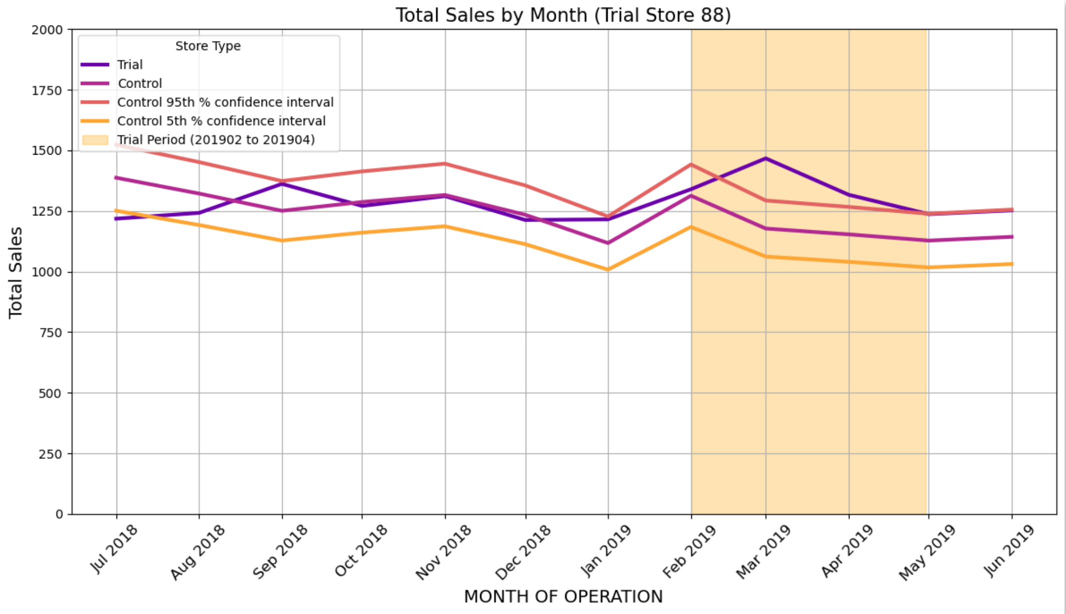
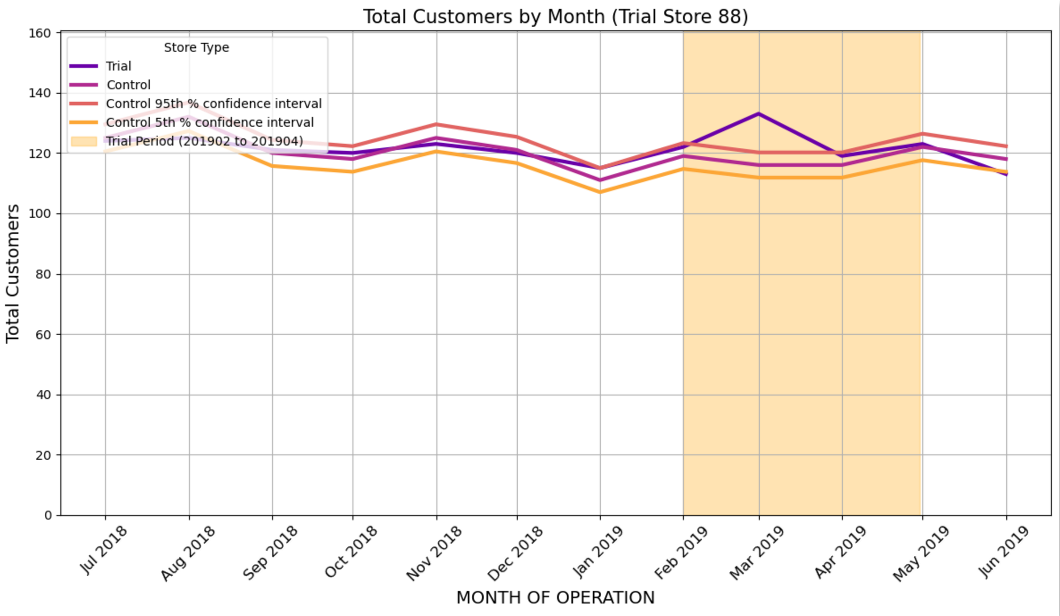
Control & Trial Store Assessment



- Upon hypothesis testing (t-test) and visualization development, it appears that total sales for trial store 88 is significantly higher than Control Store 237 (and its corresponding 95th percentile) in 2 out of 3 trial months (March & April)
- Average of Total Sales between Trial & Control Stores during trial period:
  - Trial Store: $1339.6 (February), $1467.0 (March), $1317.0 (April)
  - Control Store (after scaling for comparability): $1300.9 (February), $1166.7 (March), $1143.0 (April)

- Upon hypothesis testing (t-test), it appears that total customers for trial store 88 is significantly higher than Control Store 237 (and its corresponding 95th percentile) in 1 out of 3 months (March) even though visualization said otherwise
- Average of Customers between Trial & Control Stores during trial period:
  - Trial Store: 122 (February), 133 (March), 119 (April)
  - Control Store (after scaling for comparability): 119 (February), 116 (March), 116 (April)
- Business Recommendation: Check for discrepancies in the datasets or further analysis is required. Due to its high revenue, trial store 88 can be a good performer. consider capitalizing on customer retention strategies can be an ideal approach. Through analyzing repeat purchase behavior, launching loyalty programs or offering incentives for repeat customers, the store can sustain the positive sales momentum.



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