June 2020

Category review: Chips

Retail Analytics

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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.

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Executive summary

01

Task 1 – Customer Segmentation on chips data

1. Top 3 Total Sales from Budget Older Families, Mainstream Retirees and Young Singles/Couples
2. Top 3 Number of Customers from Budget Older Families, Mainstream Retirees and Young Singles/Couples
3. Budget Older Families and Budget Young Families have more Average Number of Units per Customer
4. Mainstream Midage Singles/Couples and Midage Young Singles/Couples have higher Average Price per Unit
5. Kettle is most favoured by Mainstream Young Singles/Couples and Mainstream Midage Singles/Couples
6. 175g pack size is favoured by Mainstream Young Singles/Couples and Mainstream Midage Singles/Couples

02

Task 2 – Analysis of Trial and Control Stores

1. Comparison of Trial Stores and Control Stores
2. Control stores are 233, 155 and 237 with the corresponding 77, 86 and 88 trial stores respectively.
3. Trial Stores 77 and 88 are statistically different, whereas 86 is not.

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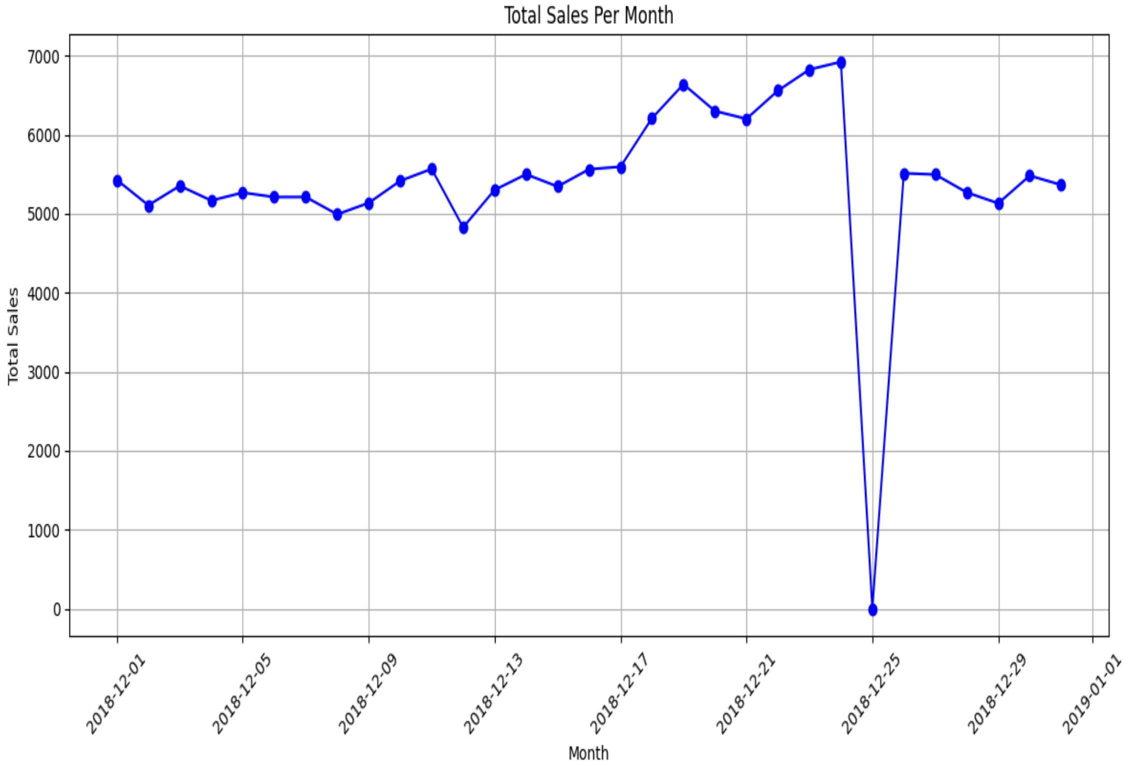
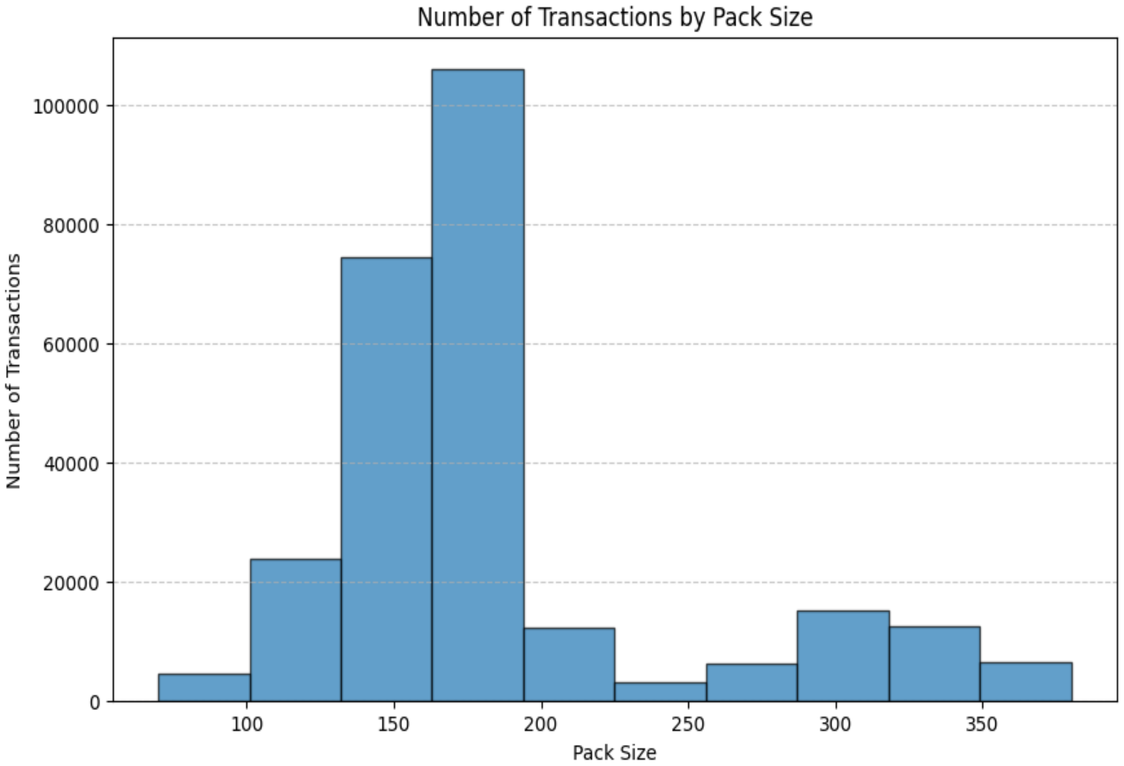
01

Task 1 – Customer Segmentation on chips data





There is no sales made on Christmas Day as it is a holiday, shops will be closed.

Chips sizes between 150 - 200g were most frequently bought.

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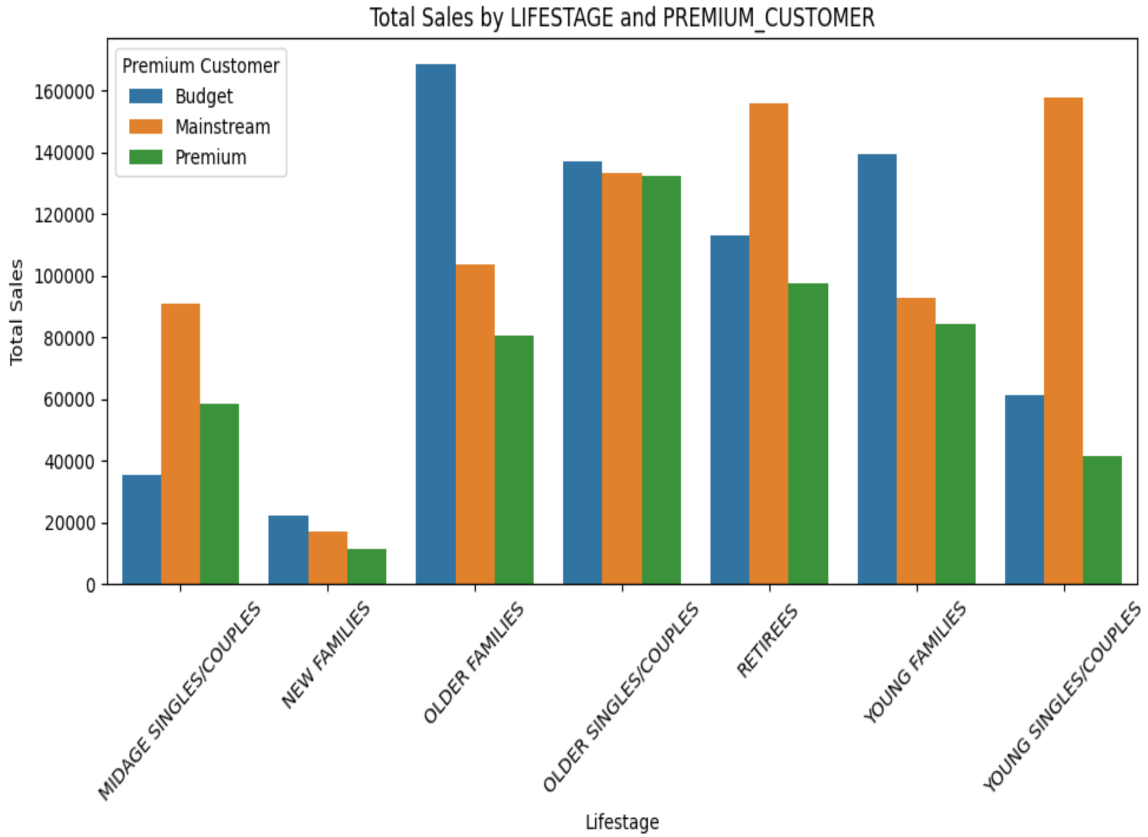
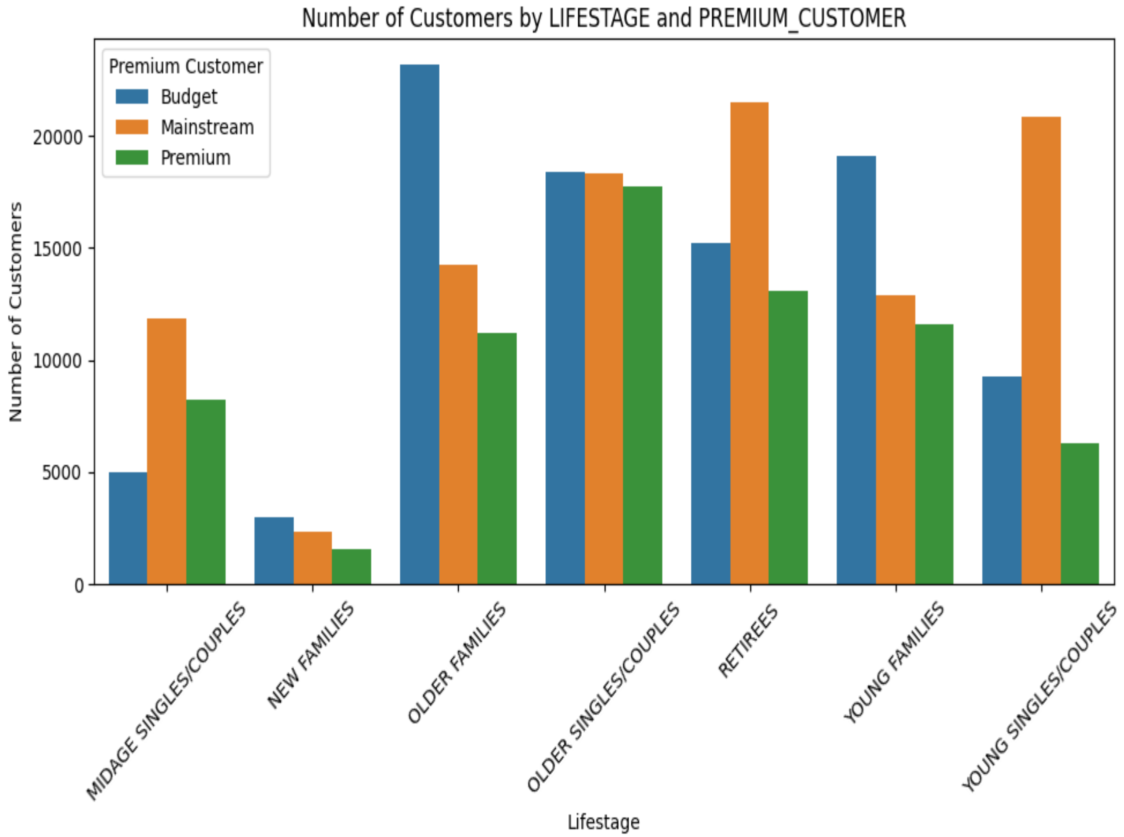
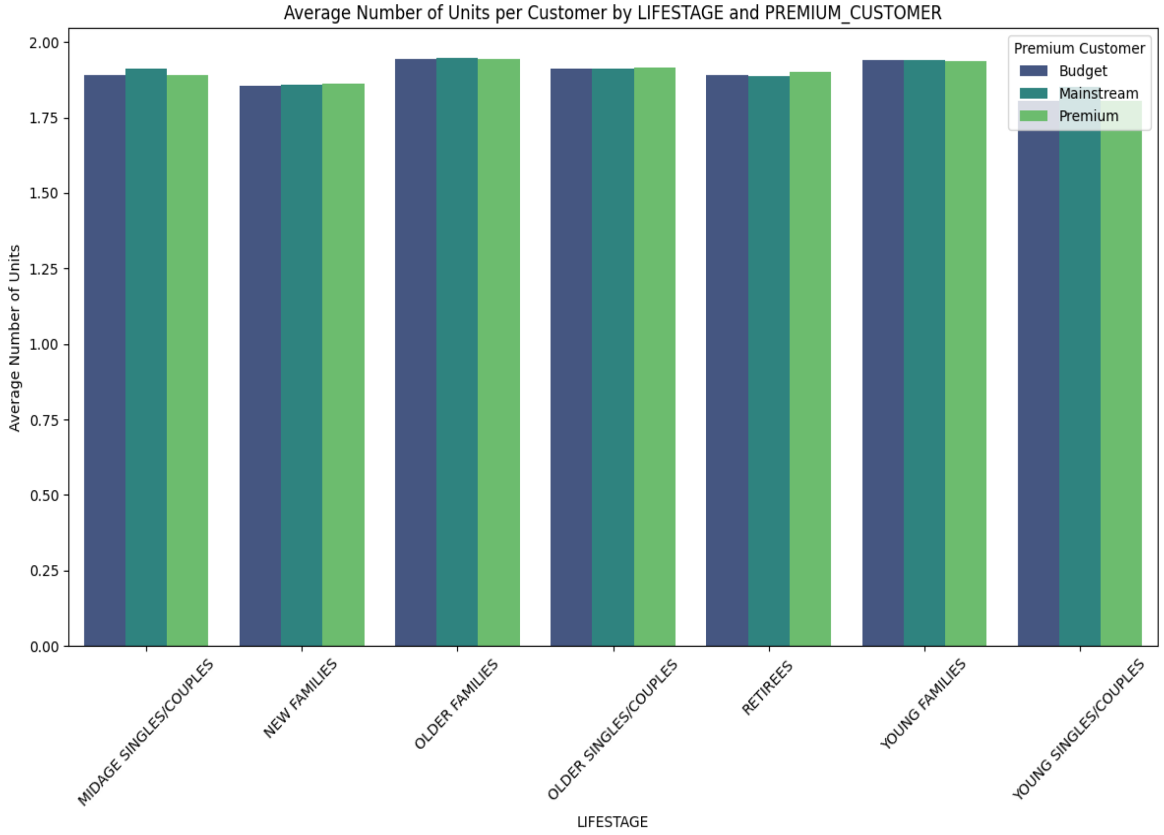
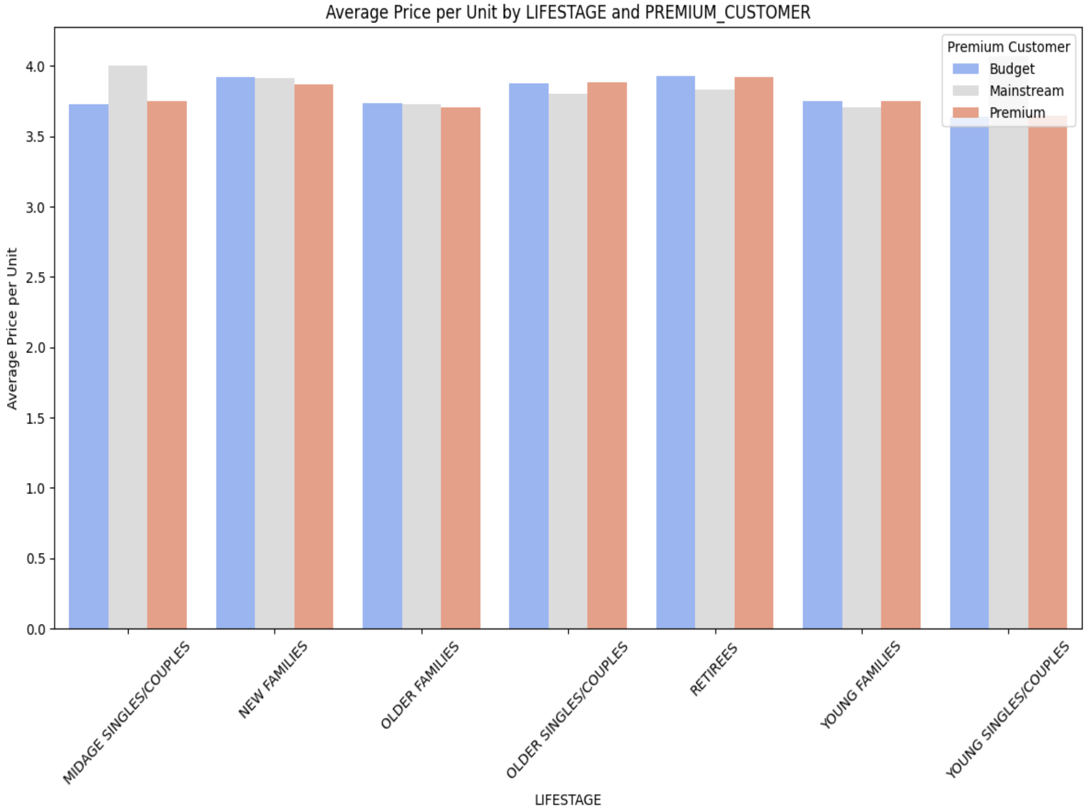




Most sales are coming from Budget Older Families, Mainstream Retirees and Young Singles/Couples. This is also supported as they are the highest number of customers. This indicates that they enjoy chips a lot more than other types of customers.





Older families and young families in general buy more chips per customers.

Mainstream midage and young singles and couples are more willing to pay a higher price per packet of chips compared to their budget and premium counterparts. This may be because premium shoppers are more inclined to purchase healthy snacks, and when they do buy chips, it's mainly for entertainment purposes rather than personal consumption. This is further supported by the fact that fewer premium midage and young singles and couples buy chips compared to their mainstream counterparts.

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```
Mainstream Young Singles/Couples Brand Preferences:
    support    itemsets
0  0.267928   (doritos)
1  0.378956    (kettle)
2  0.250742  (pringles)

Mainstream Midage Singles/Couples Brand Preferences:
    support    itemsets
0  0.320359   (doritos)
1  0.475150    (kettle)
2  0.299102  (pringles)
3  0.280539    (smiths)
```

For Mainstream Young Singles/Couples, the top brand preferences are Doritos, Kettle, and Pringles, with Kettle being the most favored. For Mainstream Midage Singles/Couples, the preferred brands include Doritos, Kettle, Pringles, and Smiths, with Kettle being the most popular and Doritos coming in second.

I recommend that Julia increase the stock of Kettle for the Mainstream Young Singles/Couples segment, and for the Mainstream Midage Singles/Couples segment, she should stock up on both Kettle and Doritos. Additionally, if there is funding available, Julia should consider running a targeted campaign focused on Kettle, as it is the most frequently purchased item by both segments. This strategy is likely to boost overall sales.

```
Mainstream Young Singles/Couples Brand Preferences:
    support itemsets
0  0.219708  (110.0)
1  0.250742  (134.0)
2  0.318867  (150.0)
3  0.448566  (175.0)

Mainstream Midage Singles/Couples Brand Preferences:
    support        itemsets
0  0.281437         (110.0)
1  0.299102         (134.0)
2  0.405389         (150.0)
3  0.226946         (170.0)
4  0.564072         (175.0)
5  0.243413  (150.0, 175.0)
```

For Mainstream Young Singles/Couples, the most popular pack sizes are 110g, 134g, 150g, and 175g, with 175g being the top choice. For Mainstream Midage Singles/Couples, the favored pack sizes include 110g, 134g, 150g, 170g, 175g, and both 150g and 175g combined, with 175g being the most popular.

I suggest that Julia increase the stock of 175g chips, as this size is frequently purchased by both segments. If there is available funding, a targeted campaign for 175g chips could further boost sales.
Based on these insights, Julia should also focus on stocking up 175g Kettle chips, as this size is frequently bought by the highest spenders. This strategy should help to further enhance overall sales.

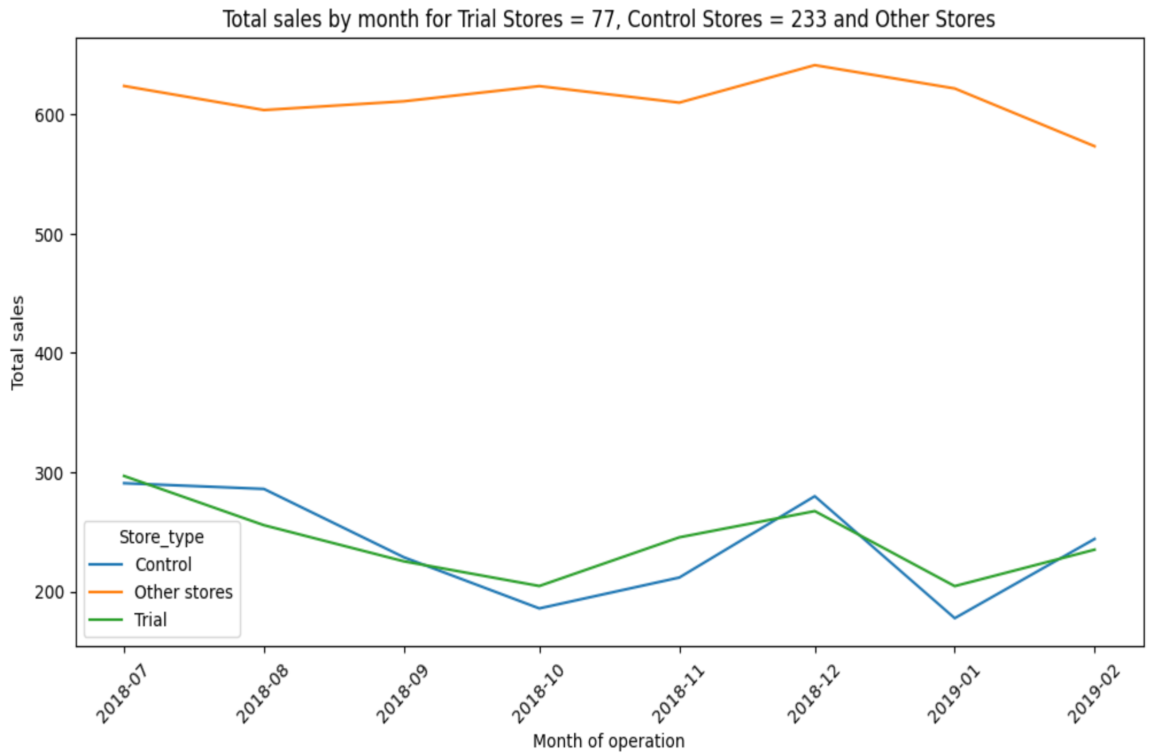
02

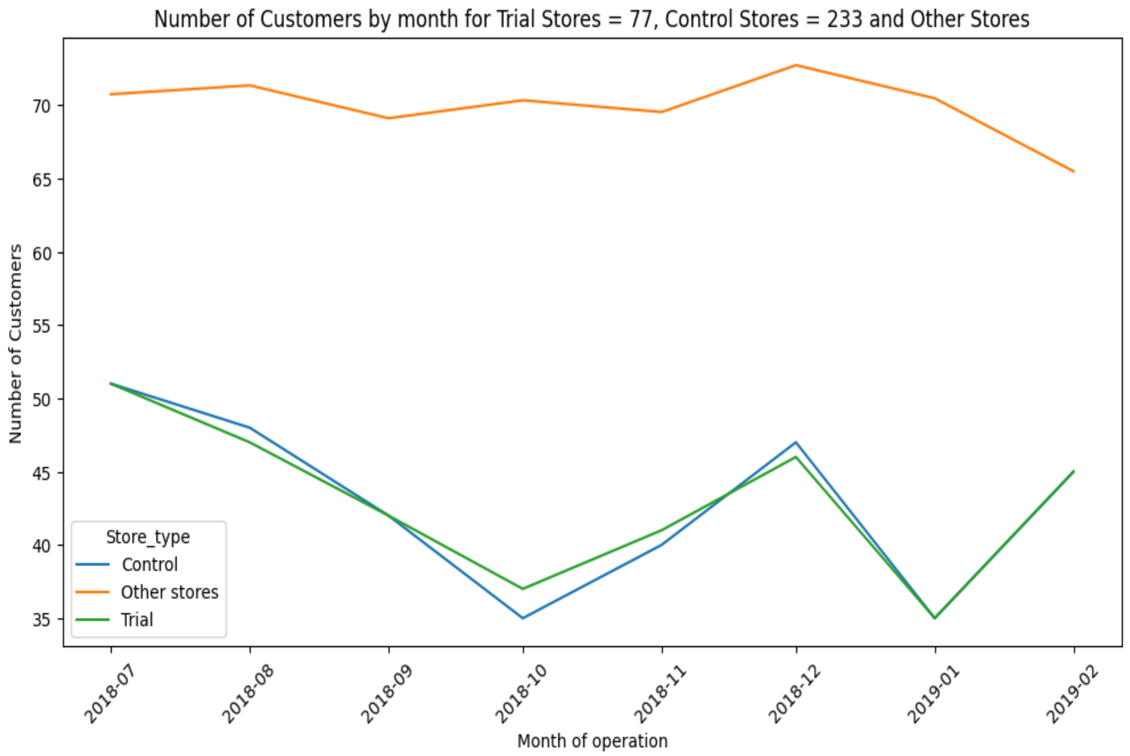
Task 2 – Analysis of Trial and Control Stores

Explanation of the control store vs other stores

Control Stores are stores that have the most similar performance with a trial store. The performance are calculated using correlation and magnitude distance to get the scores and then tested against different stores to determine the control store.

The combination of trial and control stores are the following: (77, 233), (86, 155) and (88, 237).
For example: (77, 233) show similar performance in sales and number of customers.





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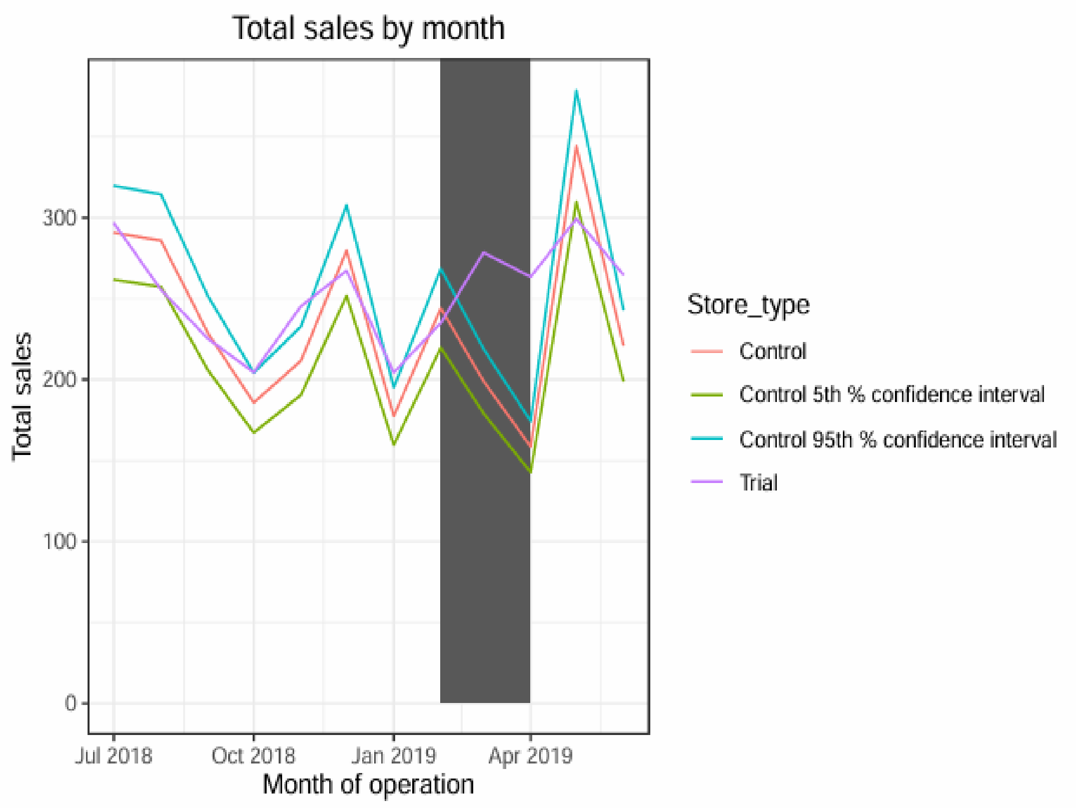
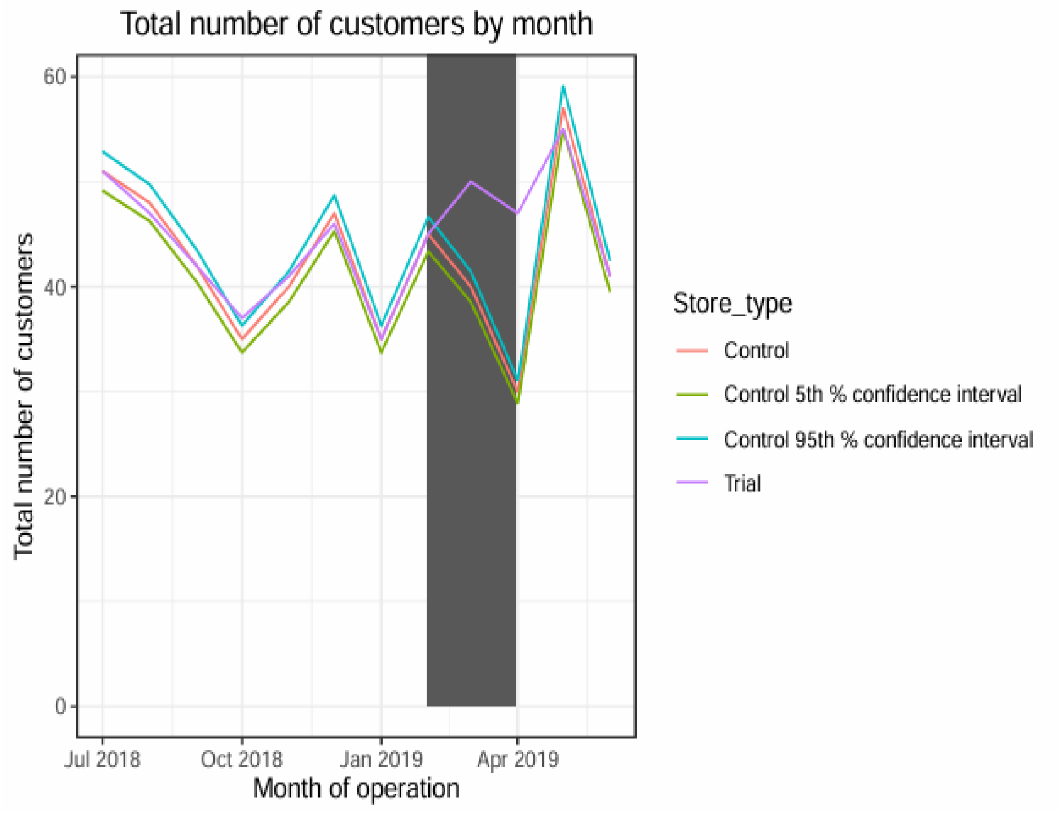
Trial Store 77 and Control Store 233 Total Sales and Number of Customers





This shows that the trial in store 77 is significantly different to its control store in the trial period as the trial store performance lies outside of the 5% to 95% confidence interval of the control store in two of the three trial months.

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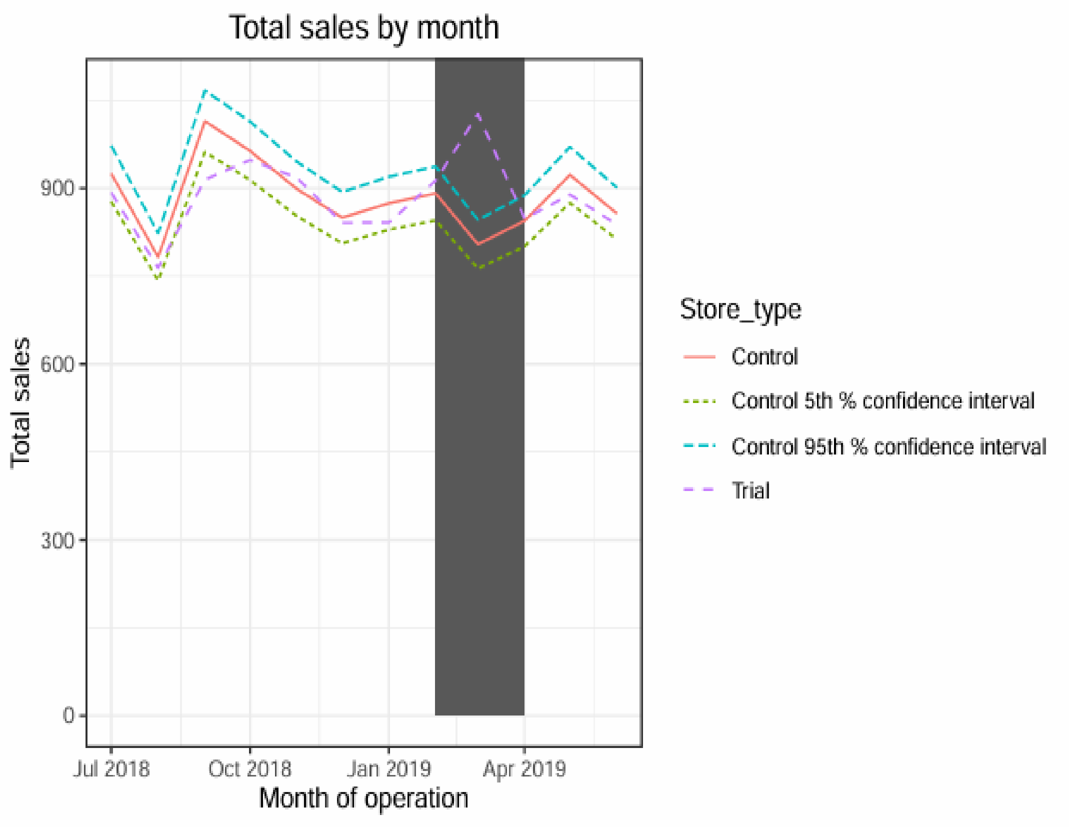
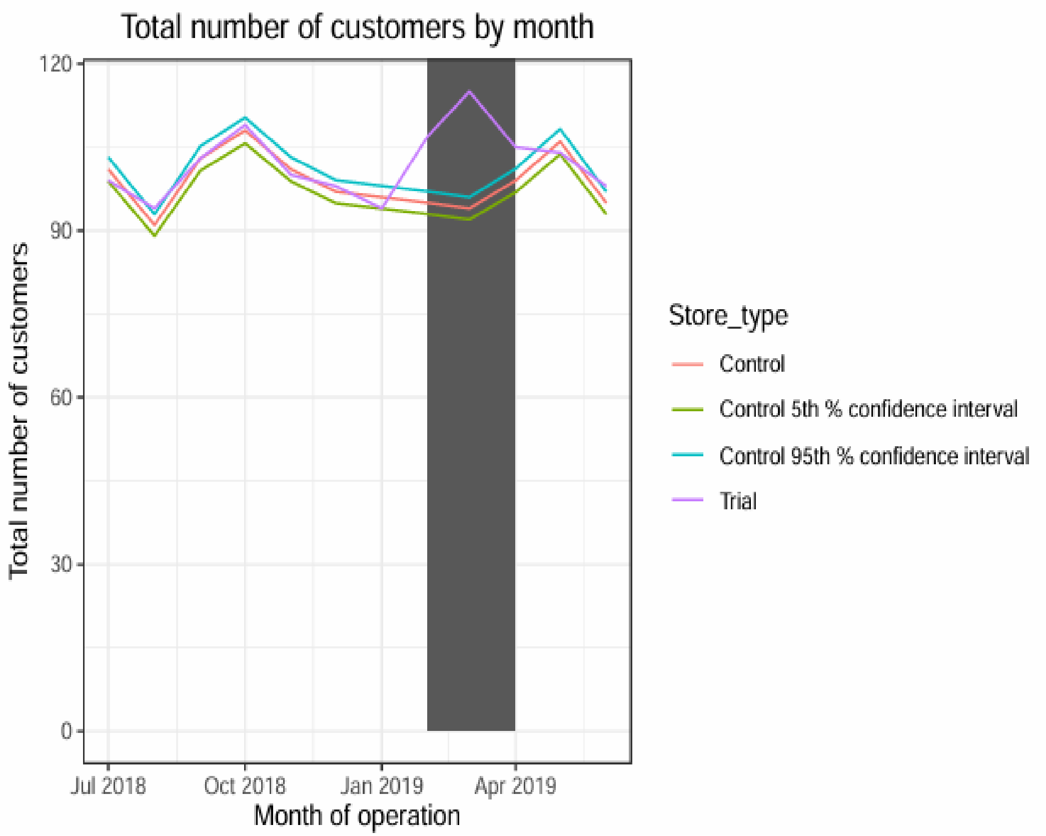
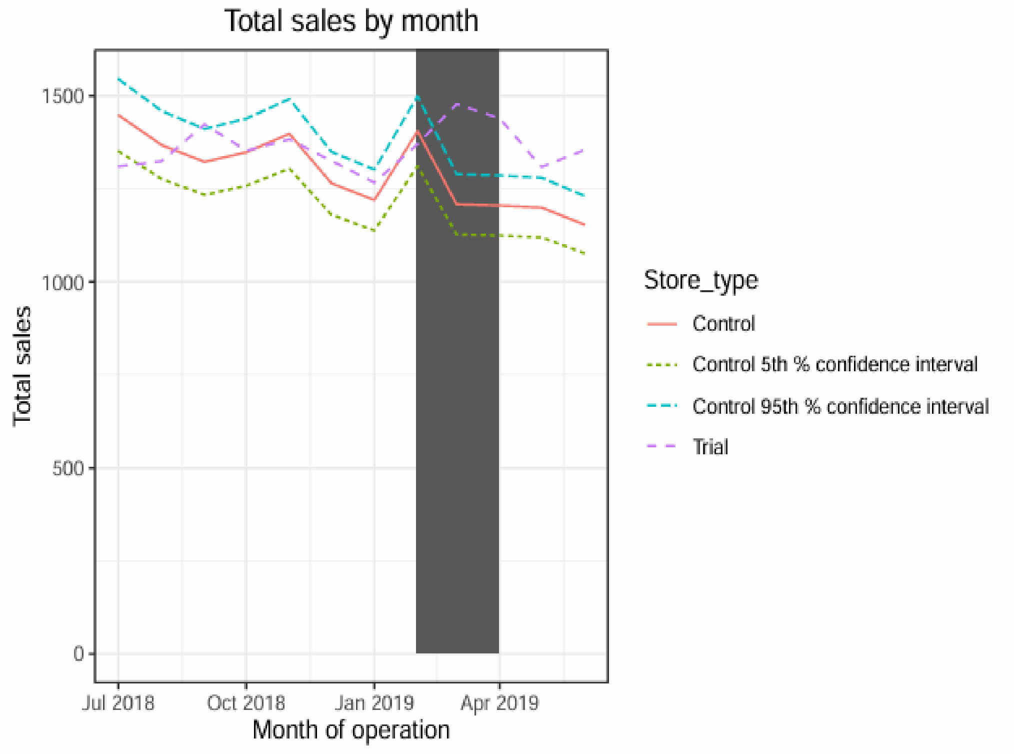
Trial Store 86 and Control Store 155 Total Sales and Number of Customers

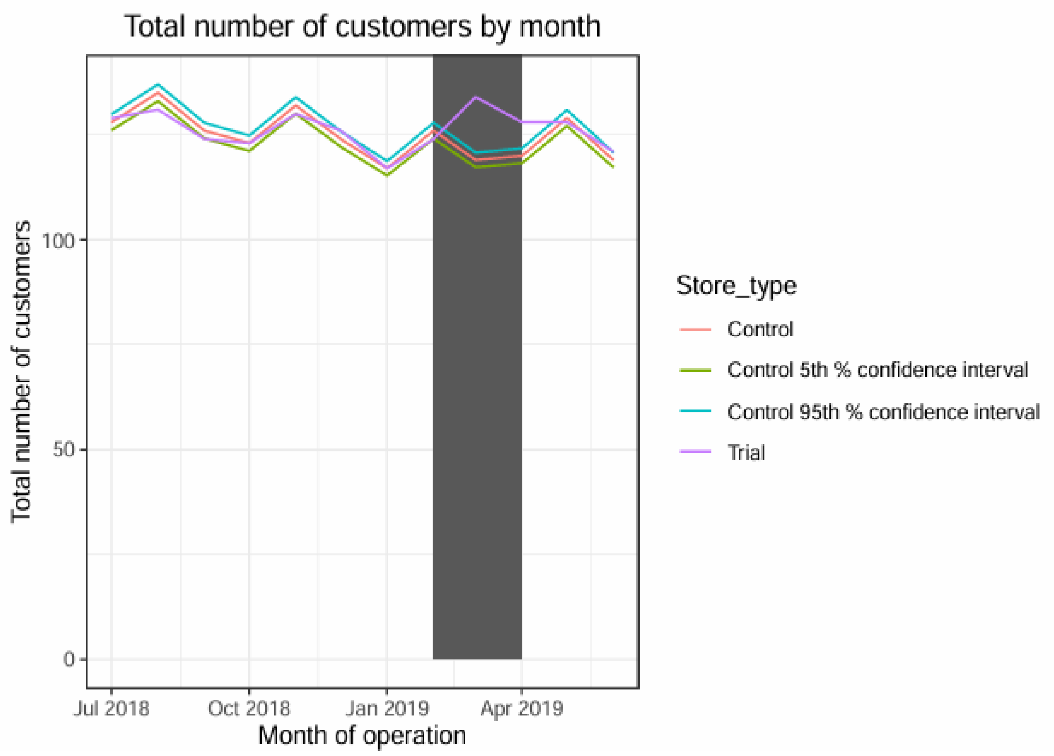




The total sales are not statistically different as the trial store's total sales are inside of the 5% to 95% confidence interval for two of the three trial months. We may need to check with the client if the implementation of the trial was different for this store.

Trial Store 88 and Control Store 237 Total Sales and Number of Customers





This shows that the trial in store 88 is significantly different to its control store in the trial period as the trial store performance lies outside of the 5% to 95% confidence interval of the control store in two of the three trial months.

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