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

We all have a responsibility to use data for good

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.

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

1. Older age groups were critical in the last year, accounting for over 50% of all sales.

2. Larger sharing bags were by far the most popular choice as consumers look to for volume and value for money as a priority.

3. Mainstream and budget customers comfortably outperformed premium customers.
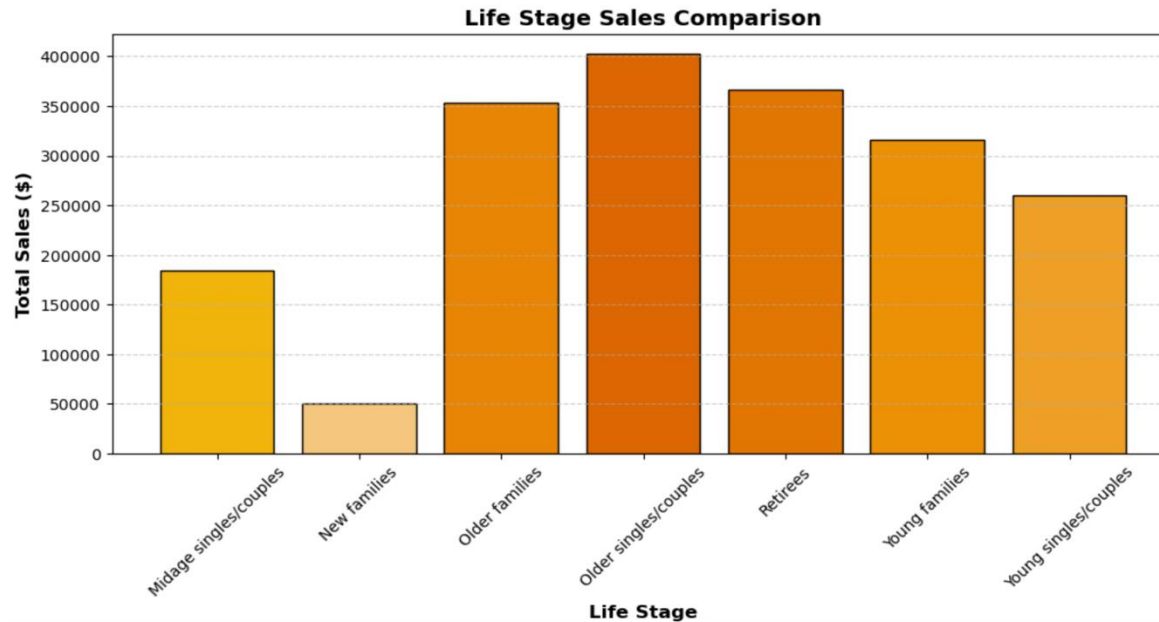
(02) Task 2

1. The 3 trial stores all saw improvements during the trial period, though 2/3 were outperformed by their respective control stores.

2. Because of this, it is not clear whether the trial has had a significant impact.

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01

Sales Insights and the Current
Purchasing Trends of Consumers.

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Older consumers are our most valuable 'life-stage' audience.

Retirees, Older Families & Older Singles/Couples make up 58% of our total sales ($1,122,658.85).

Higher proportions of 'Mainstream' and 'Budget' Customer Types emphasises consumer preference for value/lower cost.
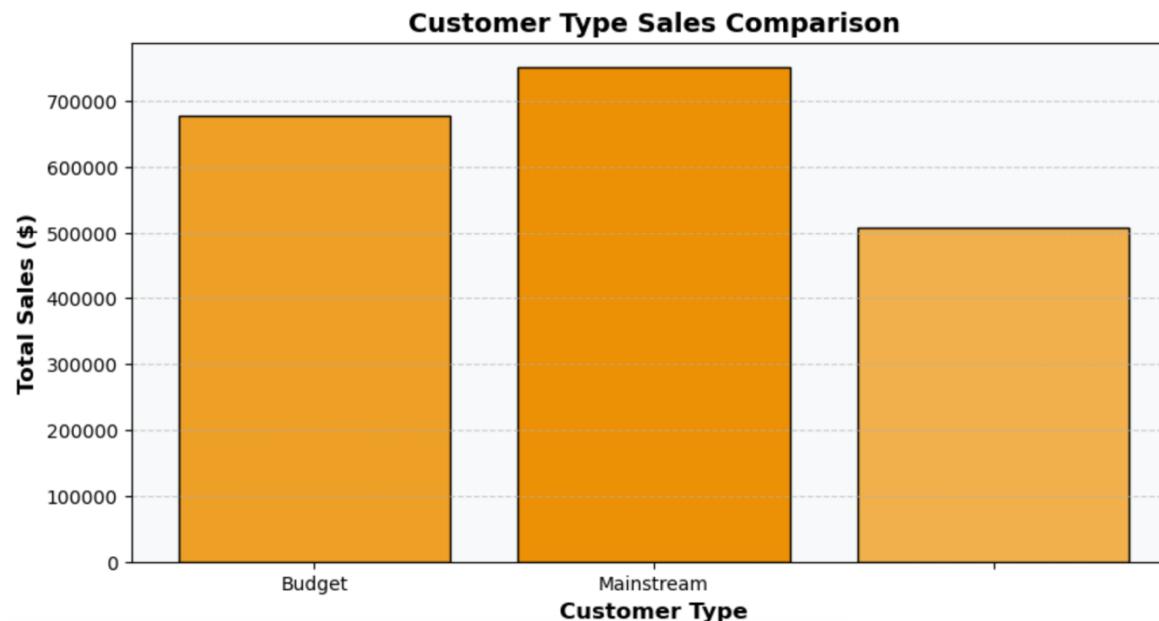
Recommendation: Focus ad investment in these successful areas. Low sales in 'New Families' suggests chips are being seen currently as a luxury. Potential also to run ads to challenge this notion.

Sharing Bags are Best Sellers

The average weight of a sharing bag in the US is ~235g.

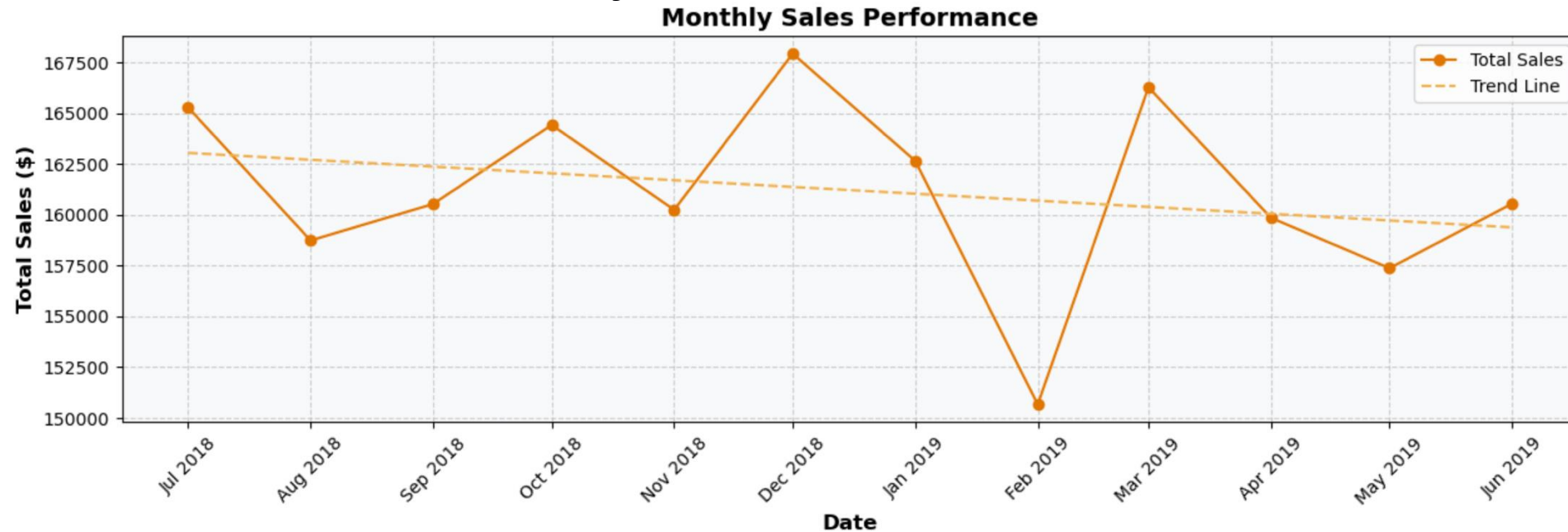Our top 5 best selling products are all over 300g.

Products weighing over 250g, and especially over 300g, bring in more sales.

With the current high cost of living, consumers prioritise value for money.

Recommendation: Focus ad campaigns here. Run ads around sharing/big events/parties. *'Food for the Occasion.'*
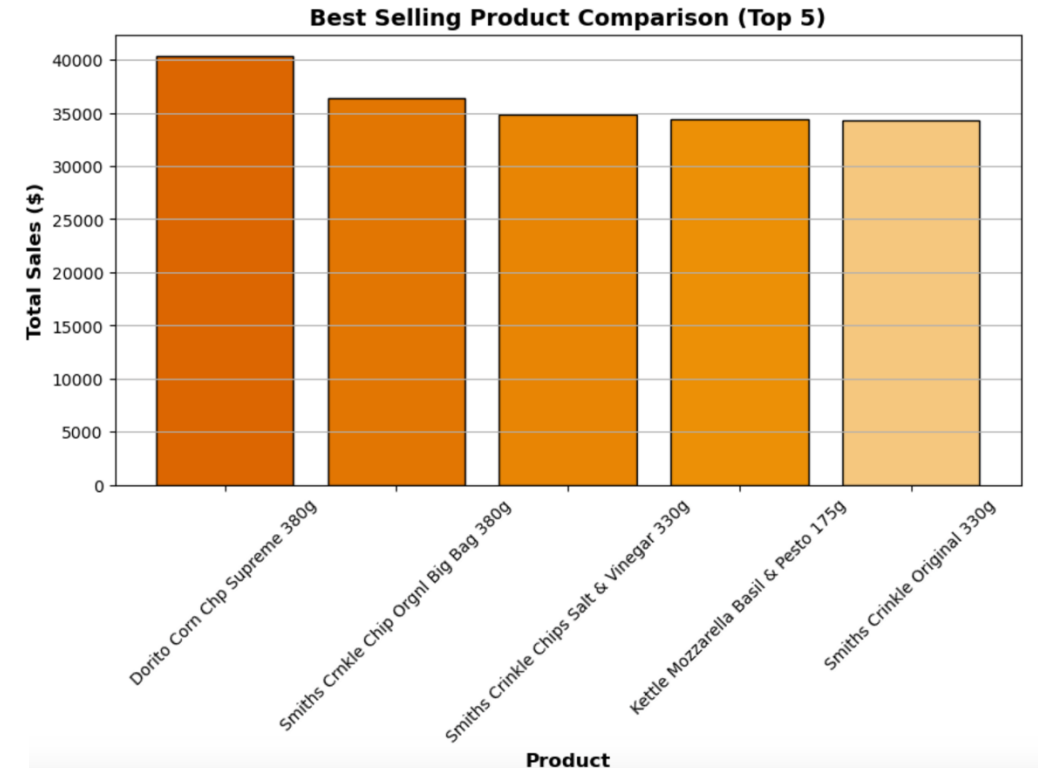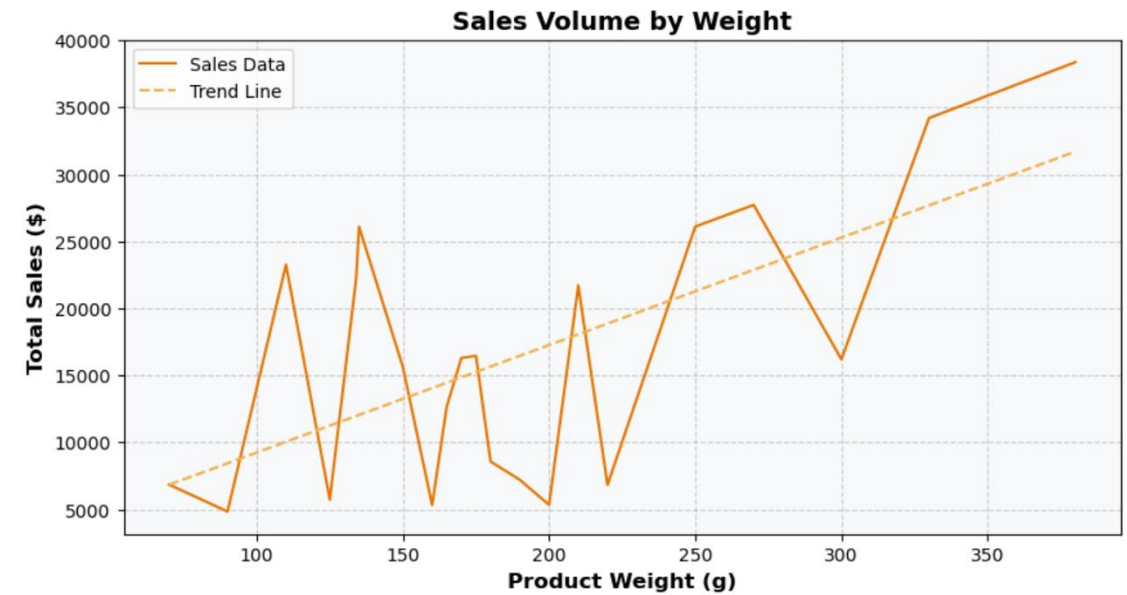
Total Sales have fallen this year

Average monthly sales have declined by 2.87% from July 2018 – June 2019.

This speaks to a wider picture of consumers spending less and showing a preference for lower cost, higher volume products.

Focusing on our key demographics and attempting to make inroads into younger consumers should be prioritised.

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02

Trial Store Performance

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The Success of the Trial

Overall, despite trial stores improving performance during the trial period, the significant success of control stores means we **cannot confirm that the trial layout was the sole reason for increased metrics.**

Trends for many of the stores show a post-Christmas slump followed by a rebound that coincided with the dates of the trial.

Observed growth in the trial stores should not be ignored however, though further analysis will be necessary.

Store 88 was the most successful of our trial stores when compared to the control store.

Store 77 was the most successful when compared to its own previous performance.

My recommendations would be to re-run the trial in the middle of the year, when sales appear at their most stable.

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Setting up a Control Store

To help validate our trial period data, we picked a control store to measure alongside each trial store.

This control store will be a store similar in performance to the trial store.

By measuring this store throughout the trial period and comparing with the trial store, we will be better able to say whether the new trial layout had a significant impact on the results.

If the trial store's performance is suddenly notably better or worse than the previously similar control store, this will help us to confirm that the trial layout has had an effect.

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Choosing the Control Stores

We identified suitable control stores using a Euclidean Distance analysis.

The trial stores were compared with all other non-trial stores against metrics such as:
- Total Sales
- Number of Transactions
- Number of Unique Customers

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

The store with the smallest Euclidean distance to the trial store means it is the most similar across all measured metrics and was therefore selected as the control.

The selected control stores were as follows:

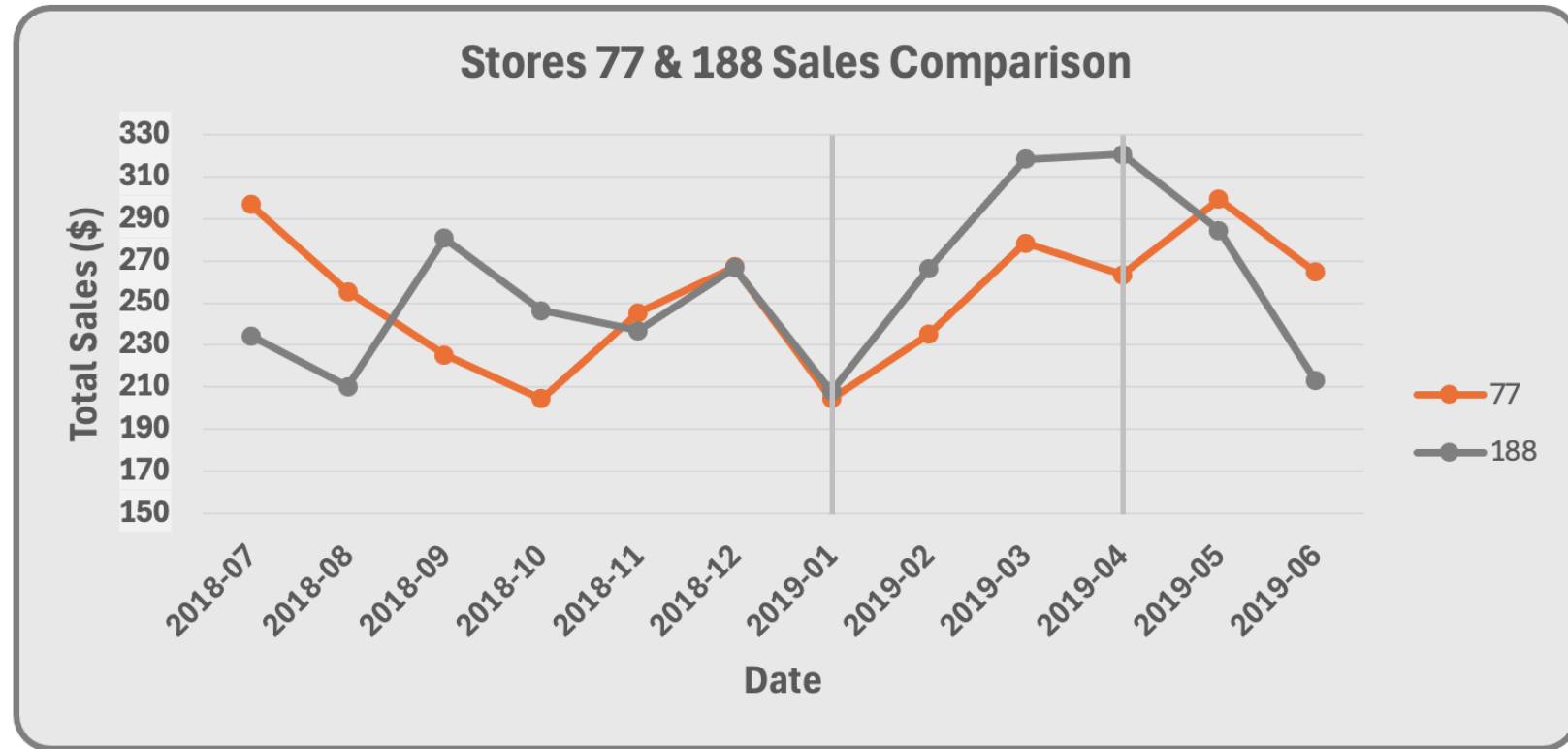For Trial Store **77**: Control Store = **188** (d = 35.23)
For Trial Store **86**: Control Store = **13** (d = 16.27)
For Trial Store **88**: Control Store = **237** (d = 21.74)

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The Chosen Metrics

Metric	Explanation
Average Total Sales	Control period sales divided by 7 months (the length of the control period).
Average Numbre of Transactions	Control period transaction count divided by 7 months.
Average Number of Unique Customers	Control period unique loyalty card number count divided by 7 months.
Average Items per Transaction	Control period number of transactions divided by total product quantity.
Average Lifestage	For this measure we assigned each lifestage category a number. An average could then be taken for each store. And compared with other stores.
Average Customer Type.	For this measure we assigned each customer type category a number. An average could then be taken for each store. And compared with other stores.

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Trial Store 77

Trial store 77 and its chosen control store 181 were both on downwards trends when looking at monthly sales averages.

Both stores picked up in the trial period, with the control store improving sales to a higher degree.

Store 77's monthly sales average was up **6.70%** during the trial period.

Store 181 was up **25.40%** during the trial period.

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Trial Store 77

Store Number	77	181
Average Total Sales Change	6.70%	25.40%
Average No. of Transactions Change	8.90%	17.90%
Average No. of Unique Customers Change	21.10%	35.30%
Average Items per Transaction Change	3.50%	3.20%
Average Customer Type Change	1.50%	4.60%

This table shows the percentage change in key store performance metrics for the trial period, compared to its own performance in the control period.

All of Store 77's metrics have increased, though Store 181 has increased significantly more in almost all categories.

Store 77 outperformed the control store in 'Average Items per Transaction Change'.

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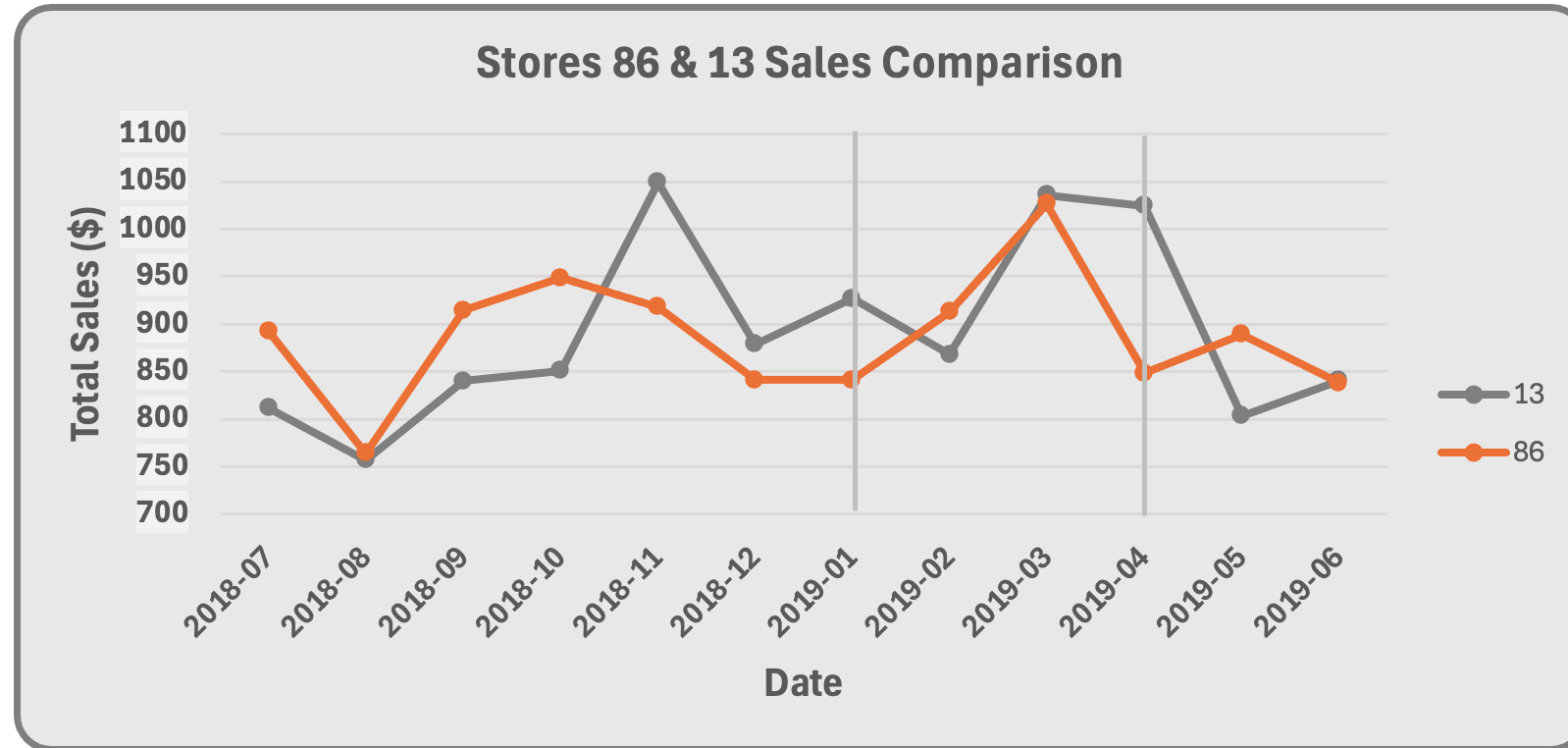
Trial Store 86

Trial store 86 and its chosen control store 13 were both trending upwards when looking at monthly sales averages.

Both stores initially picked up, though trial Store 86 then decreased significantly from March to April.

Store 86's monthly sales average was up **6.30%** during the trial period.

Store 13 was up **11.70%** during the trial period.

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Trial Store 86

Store Number	86	13
Average Total Sales Change	6.30%	11.70%
Average No. of Transactions Change	7.90%	9.50%
Average No. of Unique Customers Change	97.50%	81.10%
Average Items per Transaction Change	0.40%	0.30%
Average Customer Type Change	-8.10%	1.90%

This table shows the percentage change in key store performance metrics for the trial period, compared to its own performance in the control period.

Store 86 saw improvements in total sales and number of transactions and most notably saw a 97.50% increase in monthly number of unique customers.

Store 13 made more significant gains in sales and transactions.

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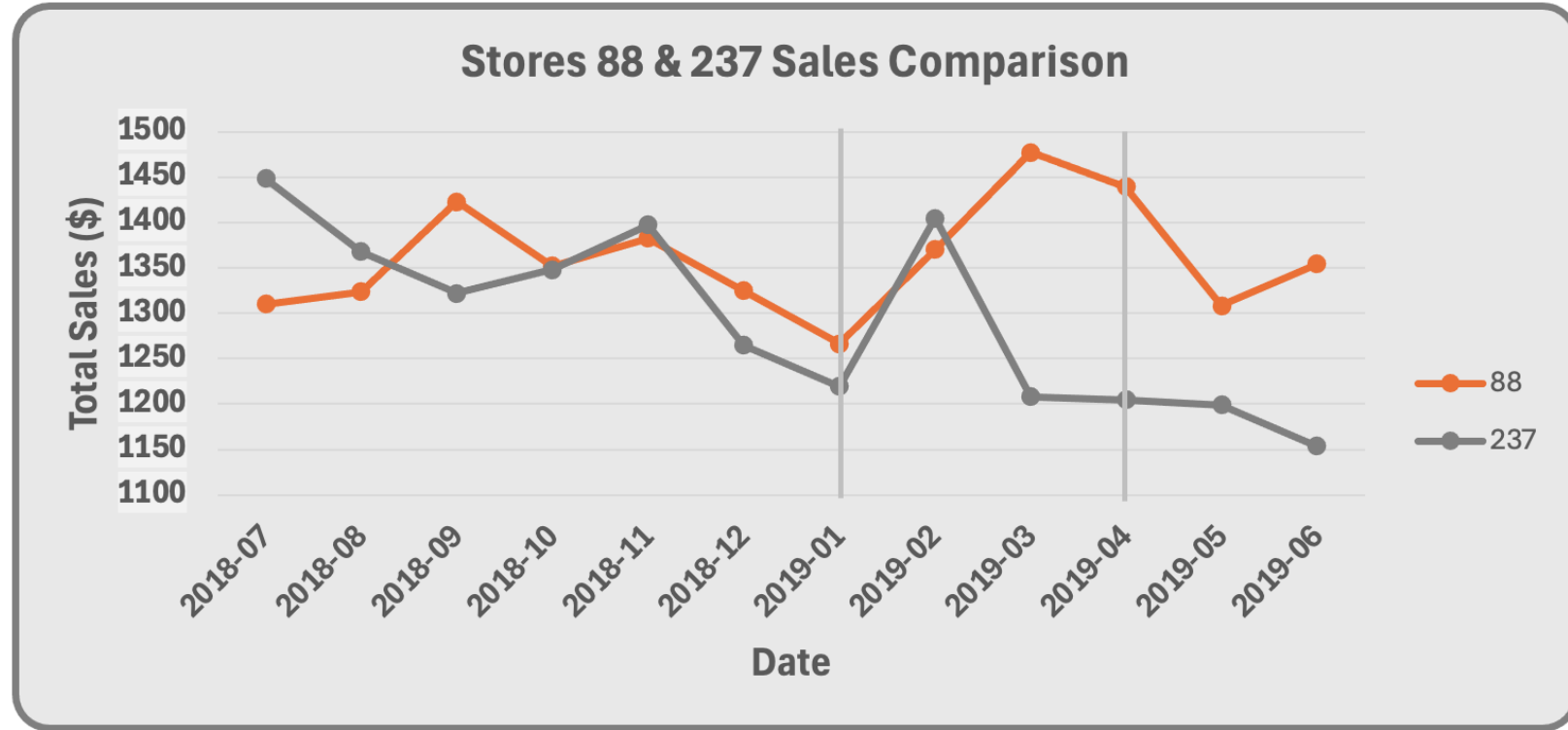
Trial Store 88

Trial store 88 and its chosen control store 237 were both steady yet dropped in the new year (a trend across all stores).

Both saw an initial increase, though only our trial store sustained these gains, as the control store dropped off in March.

Store 88's monthly sales average was up 6.60% during the trial period.

Store 237 was down 4.90% during the trial period.

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Trial Store 88

Store Number	88	237
Average Total Sales Change	6.60%	-4.90%
Average No. of Transactions Change	4.80%	-6.50%
Average No. of Unique Customers Change	62.80%	69.30%
Average Items per Transaction Change	0.80%	1.20%
Average Customer Type Change	0.90%	-13.25%

This table shows the percentage change in key store performance metrics for the trial period, compared to its own performance in the control period.

Store 88 saw improvements in total sales and number of transactions and comfortably outperformed the control store during this period.

Store 13 saw a significant shift in its customer type, trending towards budget customers and away from premium.

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03

Thank you for Reading.

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