

February 2025

Category review: Chips

Retail Analytics



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
- Quantum 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

Quantum 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

Task 1

Analyse the data to understand the current purchasing trends and behaviours.

02

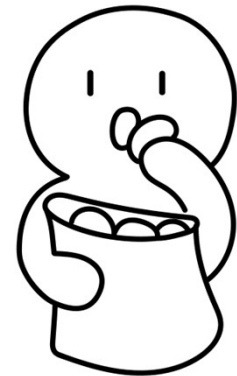
Task 2

Compare different control stores to each of the trail stores using Pearson correlations

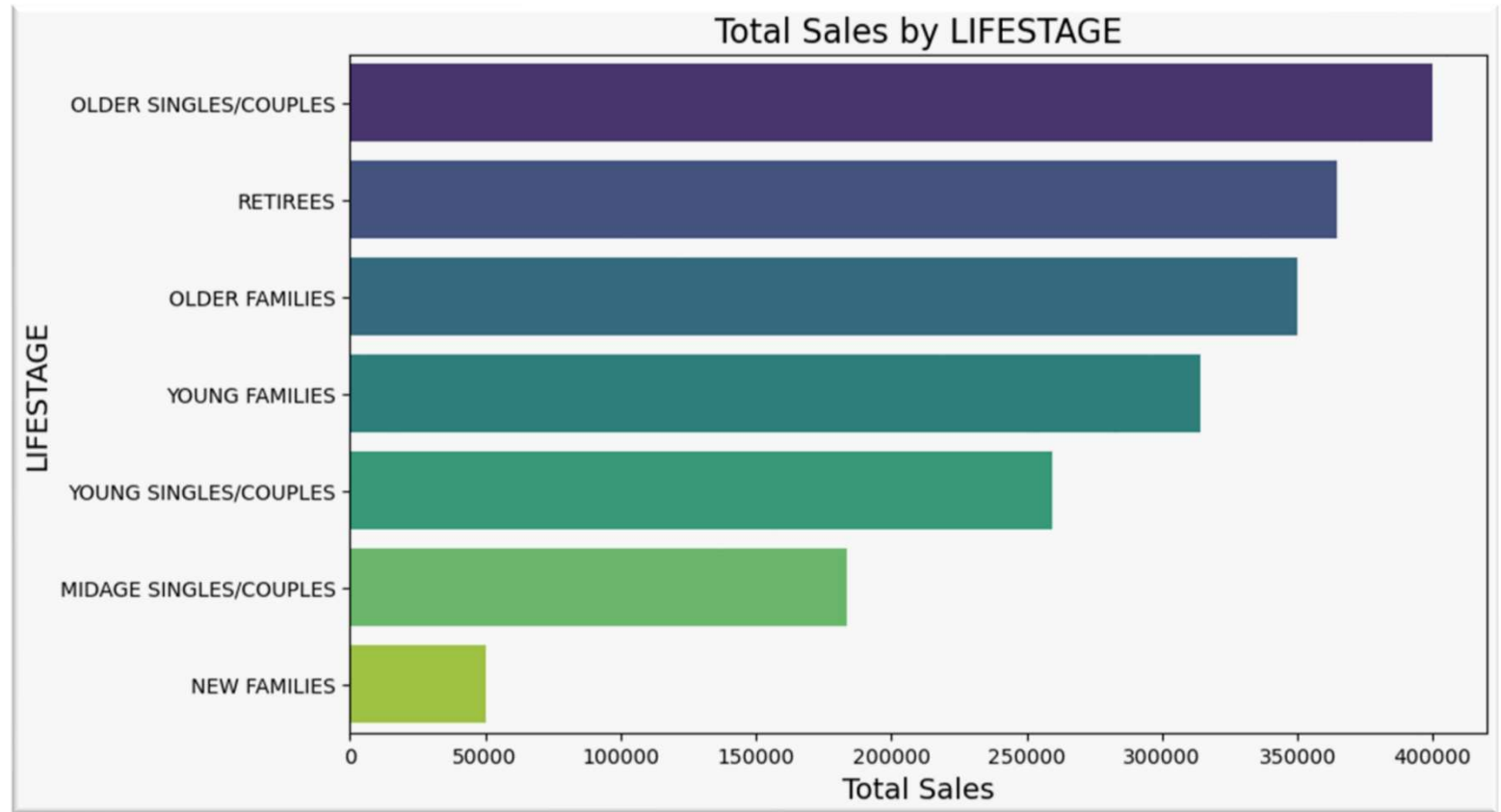
01

We need to present a strategic recommendation to our client that is supported by data which she can then use for the upcoming category review. However, to do so, we need to analyse the data to understand the current purchasing trends and behaviours. The client is particularly interested in customer segments and their chip purchasing behaviour.

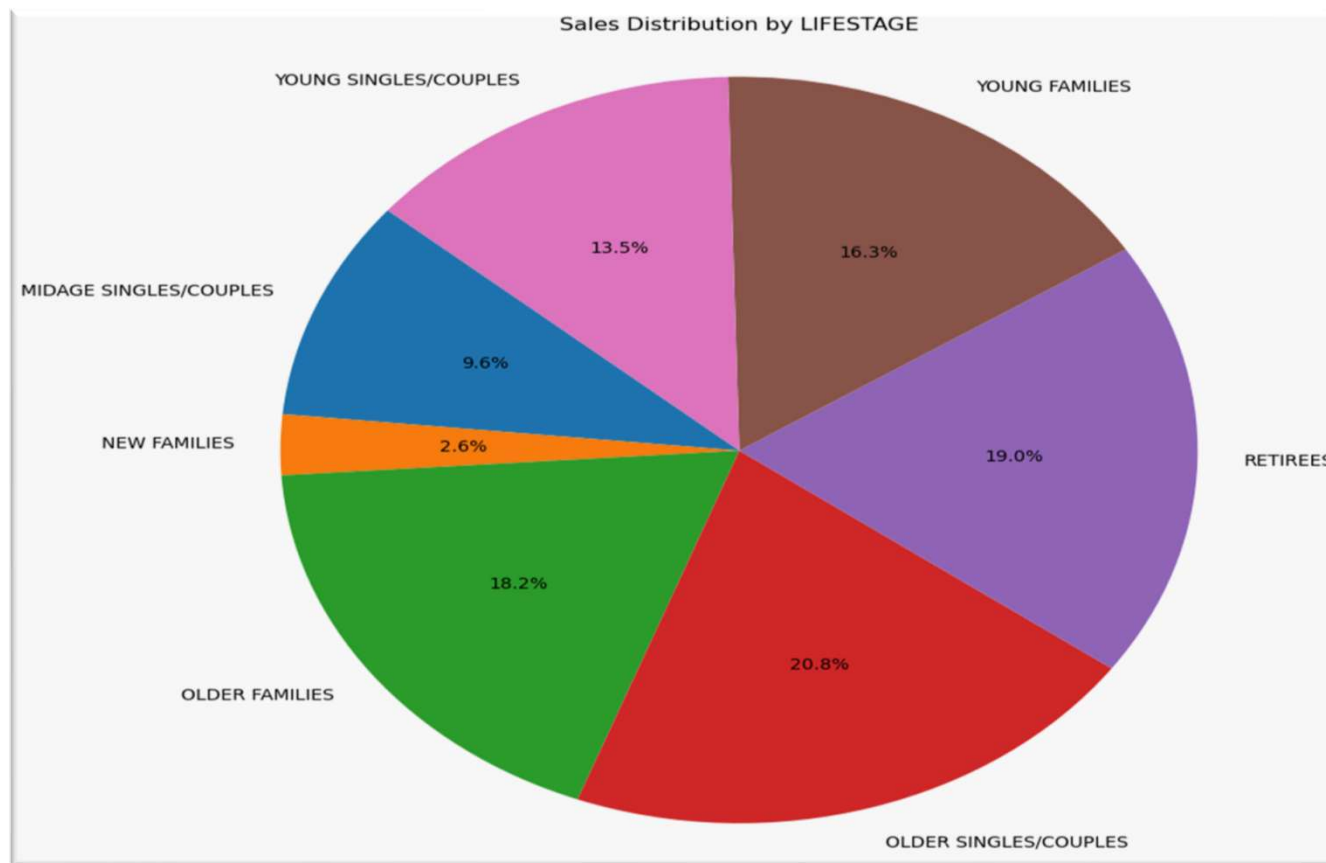
Consider what metrics would help describe the customers' purchasing behaviour.



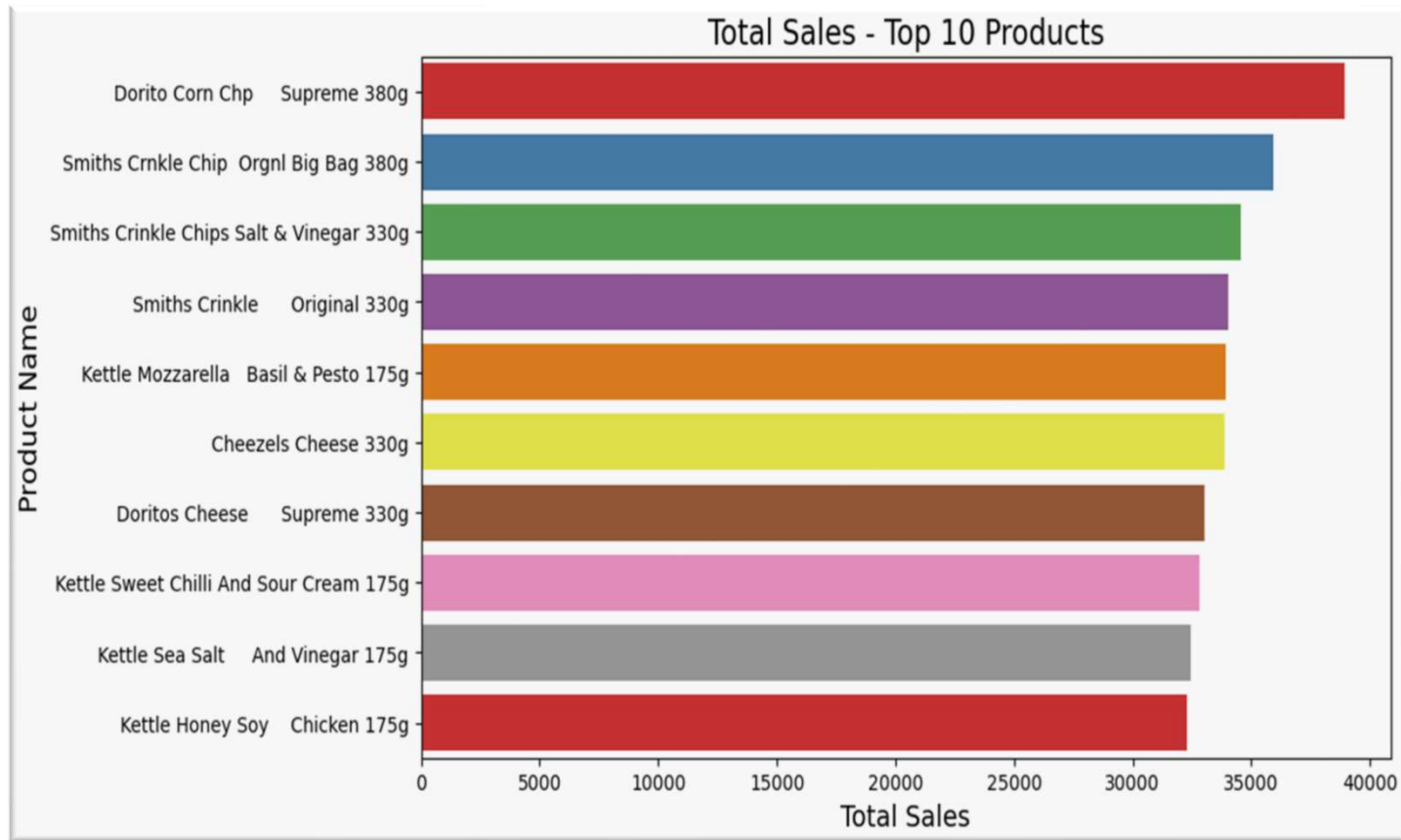
Total Sales by Different Life Stages



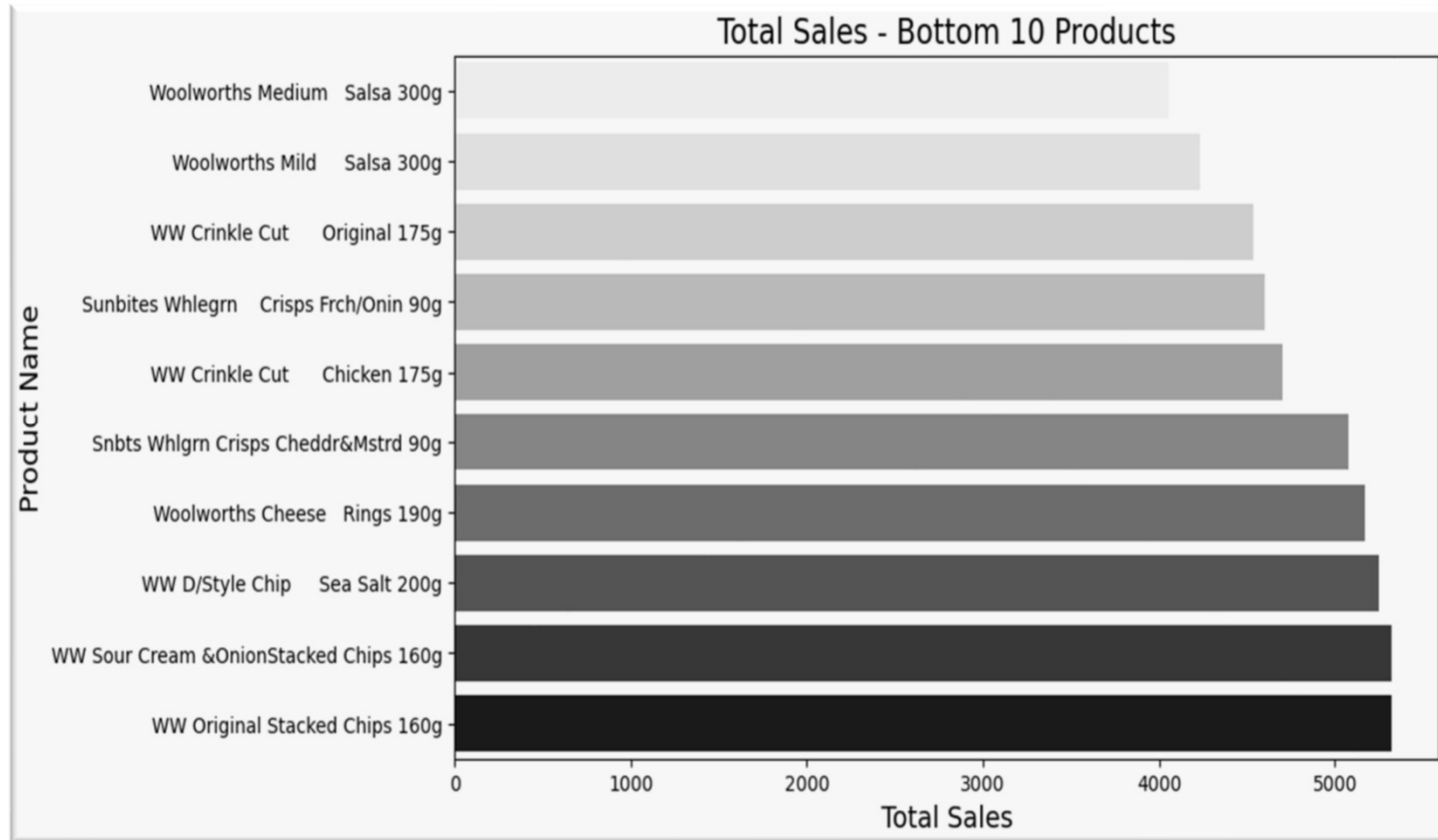
Sales Distribution by LIFESTAGE



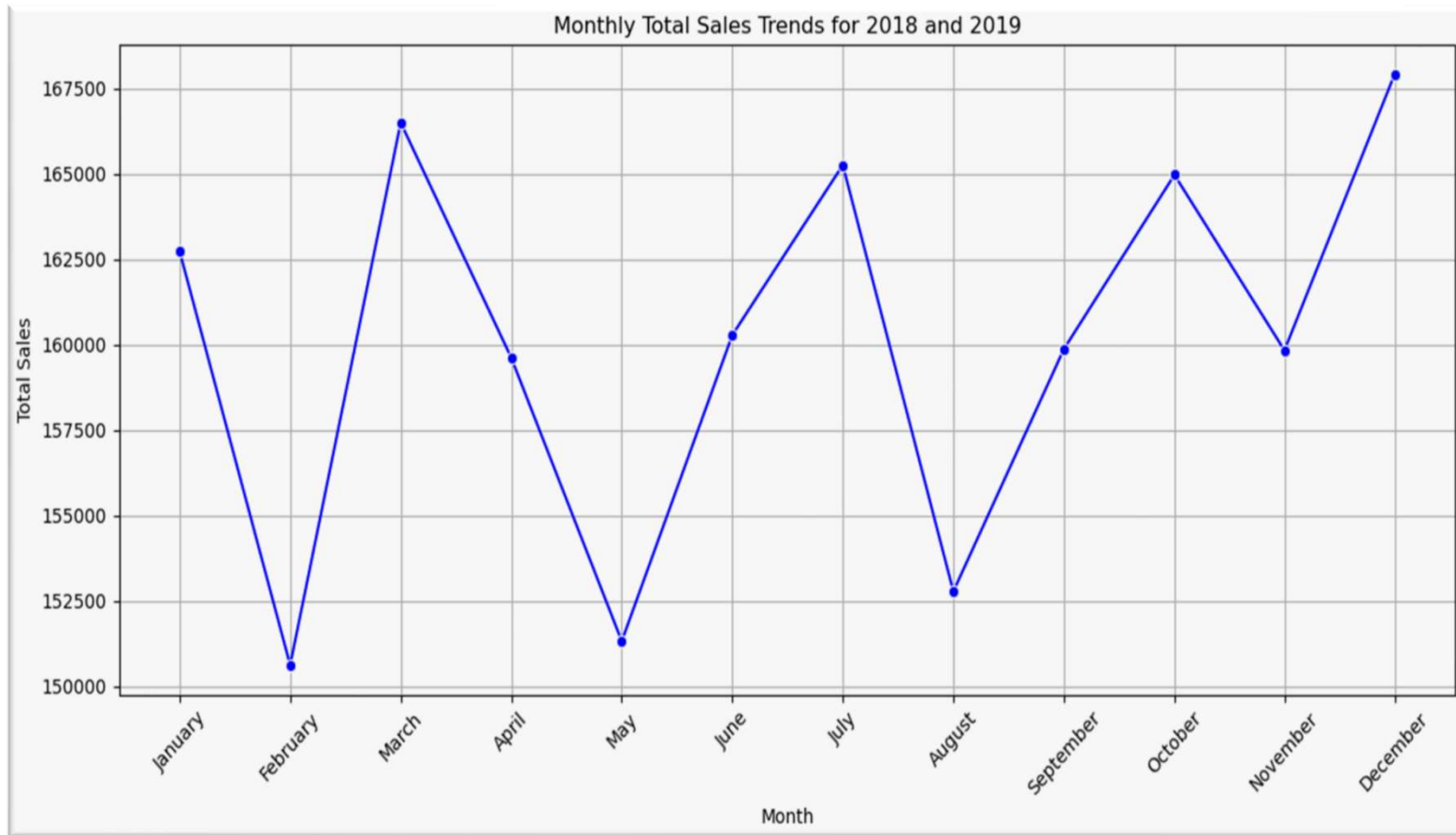
Total Sales - Top 10 Products



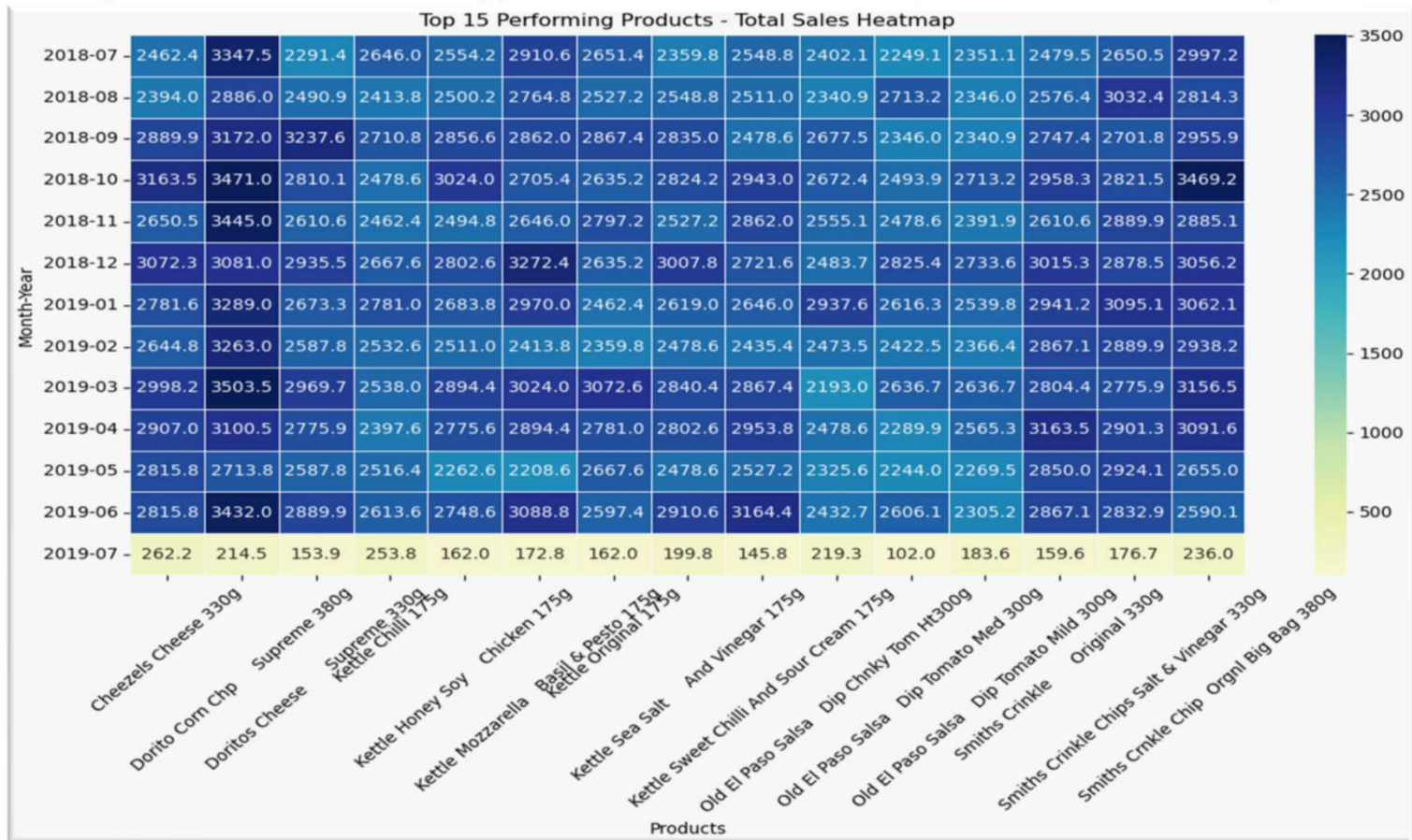
Total Sales - Bottom 10 Products



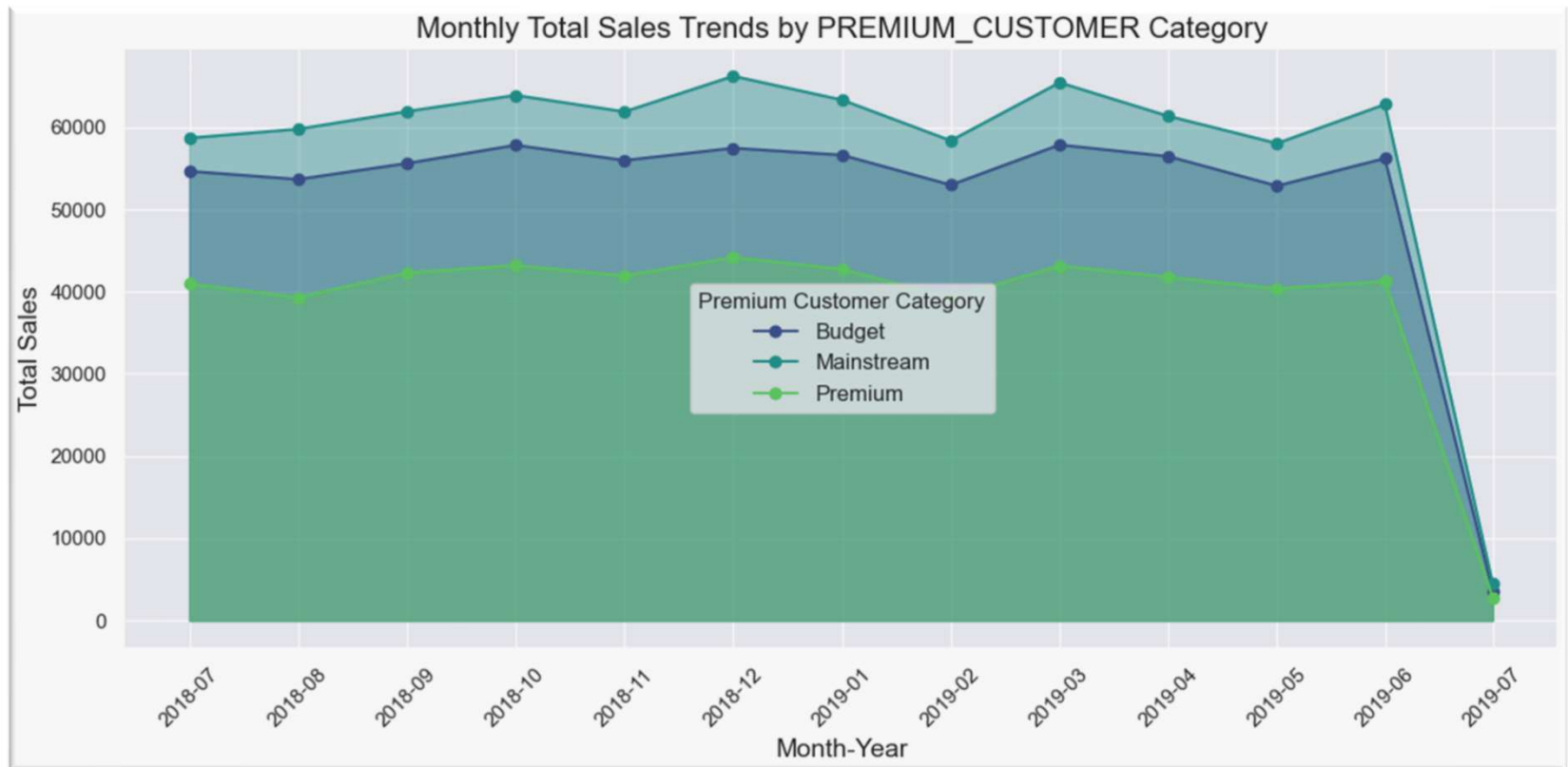
Monthly Total Sales Trends for 2018 and 2019



Top 15 Performing Products - Total Sales Heatmap



Monthly Total Sales Trends by PREMIUM_CUSTOMER Category



Key Findings for Each Analysis:

Data Cleaning and Preparation:

- 1. Data Integrity:** No null values were present in the datasets. Duplicates were minimal (only one duplicate in the transaction dataset).
- 2. Outlier Removal:** Identified and removed outliers from the TOT_SALES column using the IQR method.
- 3. Data Merging:** Datasets were merged on LYLTY_CARD_NBR, resulting in 264,258 entries.
- 4. Feature Engineering:** Converted dates from numerical format to datetime and categorized life stage and premium customer columns.

Analysis Highlights:

1. Total Sales by Life stage: Older Singles/Couples generated the highest sales (399,971.15 units).

Other significant contributors included Older Families and Retirees.

2. Total Sales by Premium Customer Category: Mainstream customers contributed the most sales (746,475.85 units),

followed by Budget (671,985.80 units) and Premium (503,295.30 units).

3. Product Performance: Top products included Natural Chip Company Sea Salt 175g and CCs Nacho Cheese 175g.

The bottom-performing products were mostly niche or less popular variants.

4. Monthly Sales Trends: Steady sales trends across 2018-2019, with peaks during specific months such as December

(likely due to seasonal demand).

5. Sales Distribution by Life stage: Older demographic groups formed the bulk of sales, aligning with the trend observed in total sales by life stage.

6. Monthly Sales Comparison by Customer Category: Budget and Mainstream categories showed more consistent

performance compared to Premium customers, which had sporadic peaks.

7. Top Product Sales Heatmap: Certain products showed seasonal trends, peaking during festive periods

Summary/Highlights:

Older demographics are the primary contributors to chip sales, especially in the Mainstream and Budget segments. Product preference varies, with a clear inclination toward popular chip brandlike Natural Chip Co. and CCs. Seasonal trends suggest the importance of strategic promotions during high-demand months like December. The data provides actionable insights for targeted marketing strategies, such as focusing on Older Families and Singles in the Budget and Mainstream categories for maximum ROI.



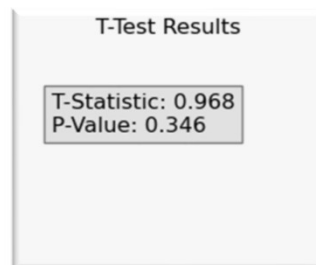
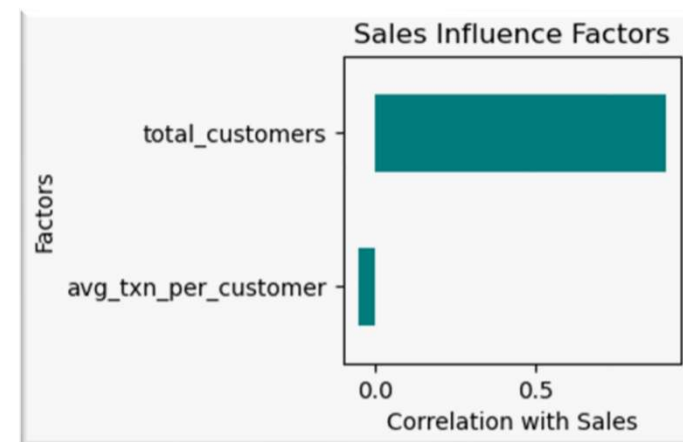
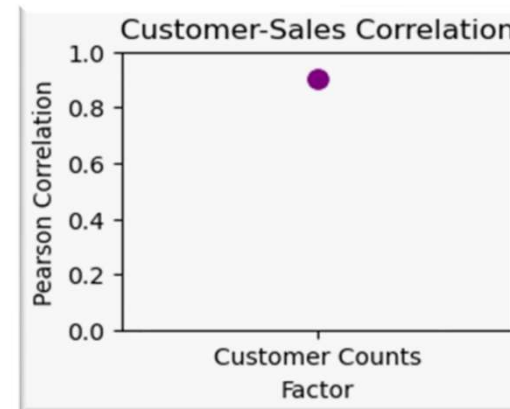
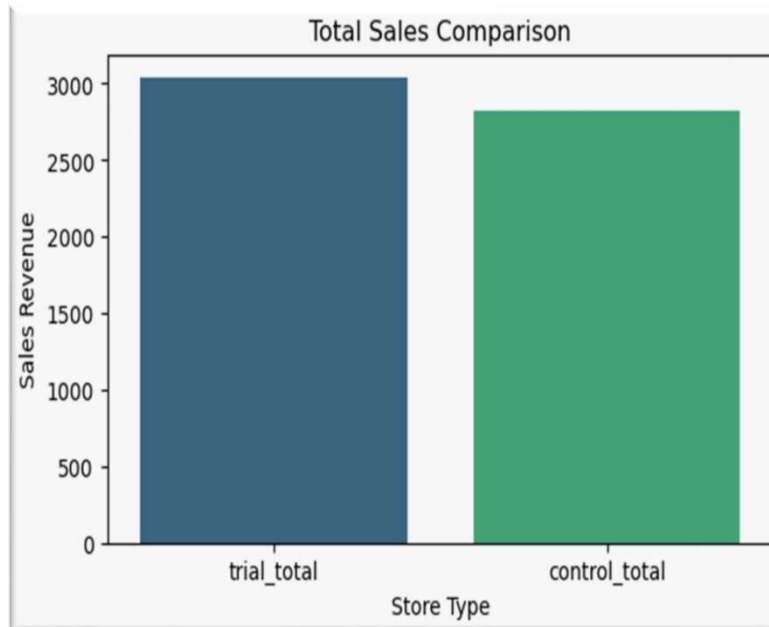
02

Trial Store vs Control Store

Performance



Trail Stores VS Control Stores Performance



Summary of Insights:

Trial Store Performance:

Sales are slightly higher in the trial store compared to the control store, but the difference is not statistically significant.

Key Driver of Sales:

The increase in customer counts is the primary factor influencing sales performance. Efforts to drive sales should focus on attracting more customers rather than increasing transactions per customer.

Statistical Significance:

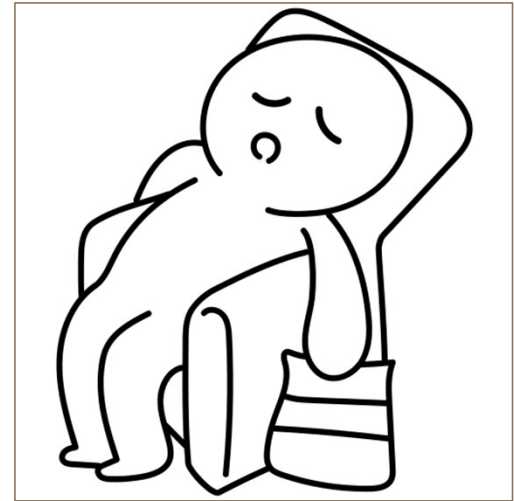
The lack of statistical significance suggests that the observed differences might not be attributable to the trial intervention. This analysis provides actionable insights for strategizing sales improvement initiatives.

THANK YOU!

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