August 2024

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

In this task, I analyzed the transaction data to identify and remove outliers. I first visualized the distribution of total sales using histograms and boxplots to detect any anomalies. Then, I focused on sales data below a certain threshold to better understand low-value transactions. By isolating these outliers, I aimed to clean the dataset for more accurate analysis in subsequent steps.

02 Task 2

In part 2 of the analysis, I calculated key metrics to better understand customer behaviour and sales performance . First I computed the total sales revenue. Next I determined the total number of unique customers and analyzed the total number of transactions. I then calculated the average number of transactions per customer. These insights provide a clear picture of customer engagement and overall sales activity in the dataset.

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01

Category

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Overview: The objective of this project is to analyze transaction and customer purchase behavior data to provide key insights and strategic recommendations to the Category Manager of chips.

Key Focus Areas :

- Data Preparation
- Customer Segmentation
- Transaction Analysis
- Recommendations

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- # Data Preparation:

Data preparation involves cleaning the dataset to fix inconsistencies and missing values, merging transaction data with customer demographics for a unified view, and standardizing the data for consistency. Feature engineering may be used to enhance or create variables that highlight important patterns. Finally, the dataset is validated to ensure accuracy before analysis. This thorough preparation helps ensure that the insights derived are reliable and actionable.

- # Customer Segmentation:

Customer segmentation divides the customer base into distinct groups based on lifestage and premium status. Key segments include Young Singles/Couples, Young Families, and different premium levels (Premium vs. Mainstream). Analyzing these segments reveals which groups contribute most to sales and highlights differences in purchasing behavior, such as frequency and average spend. This analysis provides insights into how to target each segment more effectively to drive higher engagement and revenue.

- # Transaction Analysis:

Total sales amounted to approximately $1.93 million across 264,834 transactions. The dataset identifies 241,584 unique customers, with an average of 0.91 transactions per customer. This low average indicates that most customers make only a single purchase. Visualizations, such as histograms and boxplots, reveal the distribution of sales values per transaction, highlighting the concentration of lower-value transactions. This analysis underscores the need to enhance customer retention strategies to increase repeat purchases and overall revenue.

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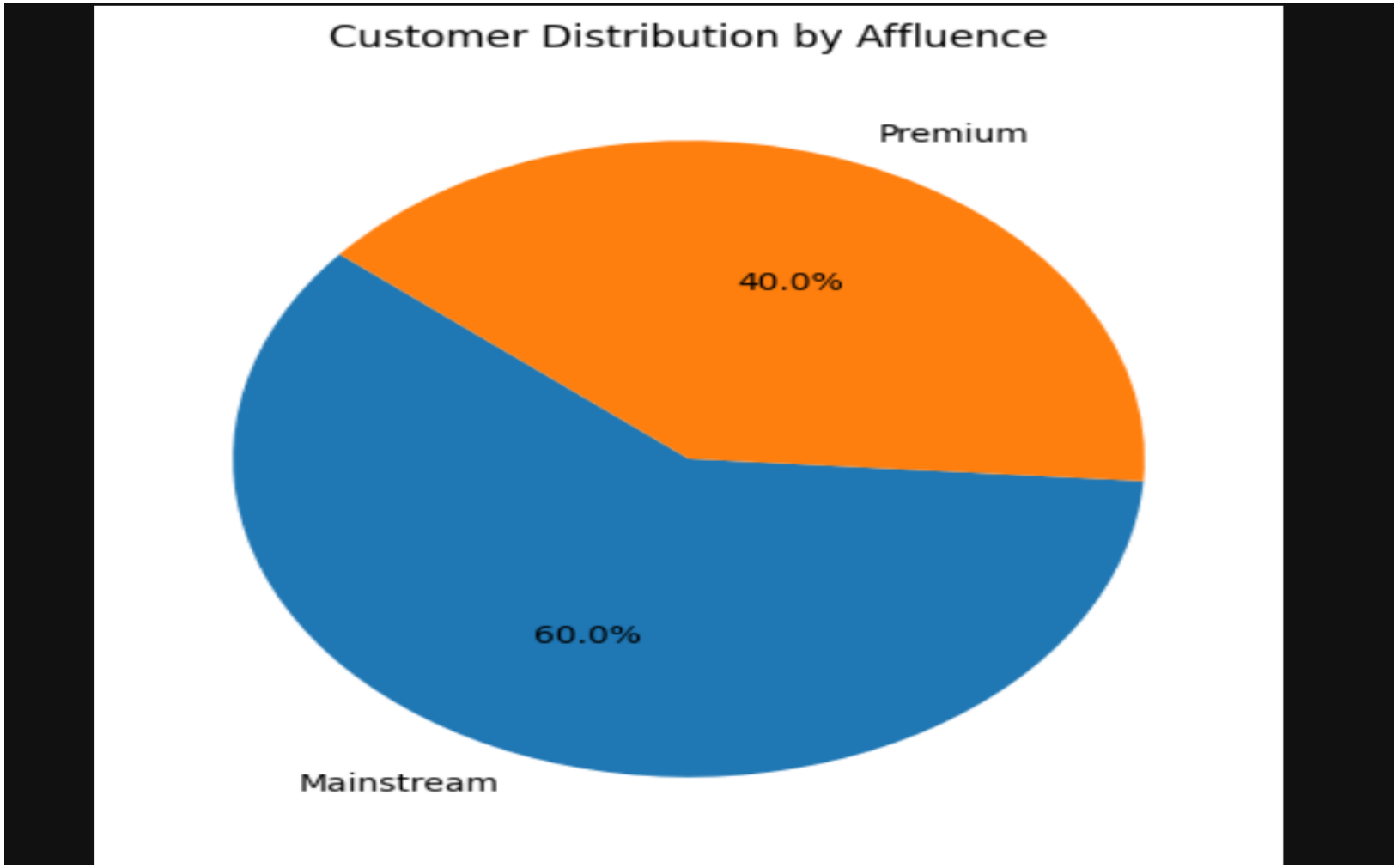
Pie Chart



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Trial store performance

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Explanation of the control store vs other stores

When comparing a control store to other stores, the control store acts as a baseline without interventions. The analysis focuses on key metrics such as sales performance, customer behavior, and operational efficiency. By comparing these metrics, we assess the impact of interventions or changes implemented in other stores. Statistical tests and visualizations help identify significant differences and determine if observed changes are attributable to the interventions. Insights gained from this comparison can guide strategic recommendations and improvements across the broader store network. This approach isolates the effects of specific strategies, aiding in the optimization of store performance.

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- To determine if the trial store was successful, we compare its performance metrics against the control store. Key indicators include total sales, customer traffic, and operational efficiency.
- If the trial store shows significant improvements in these areas, it indicates success. Positive outcomes suggest that the trial interventions were effective and could be expanded.
- Conversely, if the trial store underperforms or shows mixed results, further analysis is needed to understand why and to refine strategies. Overall, success is measured by clear enhancements in performance metrics and achieving set objectives.

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