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Results of Display Advertising Campaign for Brand X

I. Introduction

The goal is to identify the impact of the display campaign advertisement, to seek opportunities for increasing revenue, improving customer targeting, and enhancing overall business strategies.

In order to optimize sales performance and better understand customer behavior, conduct a comprehensive analysis of the brand's sales data as a result of the campaign.

II. Methodology

1. **Overall Sales Data Analysis:**
   a. Examined revenue and total orders.
   b. Conducted a top-down analysis and delved into basket-level attributes.
2. **Basket View Analysis:**
   a. Explored various metrics: Avg unique products per order, avg revenue per order, and the percentage of single and multiple purchases.
3. **Product Affinity Analysis:**
   a. Identified products likely to sell together by creating a list of unique product ID combinations and their frequency.
   b. Focused on the top 10 product affinities.
4. **Customer Segmentation:**
   a. Segmented customers based on revenue:
      i. High-revenue (Top 20%)
      ii. Medium-revenue (20-80%)
      iii. Low-revenue (Bottom 20%)
   b. Emphasized analysis on high and medium-revenue segments.

Attributes Explored:
1. Time Dimensions:
2. Day of week, time of day.
3. Geographical Dimensions:
4. Country, Country Province, City

5. Payment Type: cc@braintree, paypal@braintree, pbi@afterpay
6. Demographics:
    a. Gender (Female, Male).
    b. Age Category (0-18, 19-25, 26-35, 36-50, 51+).

Attribute-Specific Analysis:
1. Analyzed single and multiple purchases based on:
    a. Time dimensions, geographical factors, payment types.
    b. First order status (first purchase or recurring).
    c. Coupon usage (yes or no).
    d. City, country province, user type (registered or non-registered).

Product Affinity:
1. Identified top 10 product combinations likely to sell together.

Customer Segmentation Analysis:
1. Focused on high and medium-revenue customers.
2. Compared attributes such as first order, payment type, coupon usage, city, and number of unique orders.
3. Analyzed the average products sold per order for each segment.

III. Findings

Overview:

In the overview analysis, the total revenue and sales amount to $6.7 million and 101.3k, respectively, with peak performances occurring around every 6 days. Both revenue and sales exhibit a downward trend.. The top three revenue-contributing provinces are NSW (49%), VIC (23%), and QLD (11%), while the majority of revenue (95%) and sales (94%) come from Australia. Sydney emerges as the leading city in both revenue (3.5%) and sales (3.2%). In terms of payment types, cc@braintree stands out with the highest revenue and sales, surpassing paypal@braintree by 120% in revenue and 96% in the number of orders. The gender breakdown reveals that 84% of revenue and sales are attributed to females, suggesting an opportunity to cater to the diverse needs of both genders. Regarding age categories, the 26-35 age group contributes the highest revenue and orders, indicating a target audience encompassing young adults, middle-aged individuals, and seniors. These key insights underscore the significance of tailoring strategies to the preferences of different demographics, particularly in payment methods, gender preferences, and age categories.

Single/Multiple purchase Analysis:

The analysis of revenue and sales by single/multiple purchases across various attributes reveals valuable insights. For first orders, revenue from multiple and single purchases is similar, but for non-first orders, multiple purchases generate 117% more revenue than single purchases. Payment types showcase significant variations, with cc@braintree leading with 83.3% higher revenue for multiple purchases, while paypal@braintree sees twice the

revenue for multiple purchases compared to single purchases. Gender-wise, multiple purchases by female users yield 80% more revenue than single purchases. Revenue generated from using coupons is 140% higher for multiple purchases compared to single purchases.. In terms of geographical attributes, the majority of sales (94%) originate from Australia, where multiple purchases outpace single purchases by 80%. City-wise, Sydney, Melbourne, and Auckland are the top revenue generators for both multiple and single purchases. Notably, user registration status influences single purchase revenue, with non-registered users contributing 48% more than registered users. However, this trend does not significantly impact the proportion of revenue and sales for multiple purchases, suggesting potential opportunities to convert non-registered users and enhance overall revenue.

Findings for product affinity:

Products combinations	Count
(NI126AA40TEL, NI126AA41TEK)	8
(CA221AC27YSE, CA221AC29UPY)	6
(ON866AA63CDC, ON866AA65CDA)	5
(ON866AA63CDC, ON866AA64CDB)	5
(NI126SA70ZTL, NI126SA78QUZ)	5
(LY151AA05YNM, LY151AA23YMU)	4
(MI202AA30ORL, MI202AA31ORK)	4
(CA221AC27UQA, CA221AC29UPY)	4
(AT049AA65FBY, AT049AA68FBV)	4

Customer Segmentation analysis:
The analysis of customer segmentation between high-revenue and medium-revenue customers reveals distinct patterns in their purchasing behavior. High-revenue customers, with an average product purchase of 3.6, exhibit a significant engagement level, with 78% of their transactions being multiple purchases. Notably, 84% of these multiple purchases are not first orders, indicating a strong trend of repeat business. The preferred payment method for both high and medium-revenue customers is consistently cc@braintree, with 49% and 47% of multiple purchases, and 44% and 48% of single purchases, respectively. In terms of coupon usage, high-revenue customers show a remarkable 481% higher rate for multiple purchases, suggesting the effectiveness of discounts in encouraging repeat business within this segment. Conversely, medium-revenue customers exhibit similar coupon usage patterns for both single and multiple purchases. The geographical analysis unveils that 91% of high-value customer orders are multiple purchases, with Sydney emerging as a dominant market, contributing 34% of multiple and 100% of single purchases. In contrast,

medium-value customers display a more balanced distribution between single and multiple purchases across various cities. These findings underscore the importance of tailored marketing and promotional strategies based on customer spending behavior, payment preferences, and regional dynamics to optimize engagement and encourage repeat business.

IV. Recommendations and Insights

Time Dimension:

- **Promotions Focus:**
    - Schedule targeted promotions on Wednesdays and during morning hours,leveraging various channels for time-specific deals
    - A/B Testing to see if targeted advertising affect sales revenue. T-test to determine significance.

Regional Analysis:

- Conduct surveys to understand regional preferences and customize marketing messages to align with region preference.
- ANOVA test to determine if there are statistically significant difference in revenue across regions

Payment Type:

- Feature promotions specifically for customers using cc@braintree, emphasising convenience and security

Coupon Use:

- Create exclusive coupon codes for high-revenue customers.
- Implement personalized email campaigns targeting high-revenue customers with these exclusive offers.
- Logistic regression to see likelihood of multiple purchase when using a coupon

High Revenue Customers:

- Feature product bundles or exclusive items to encourage multiple purchases.
- Engage high-revenue customers through loyalty programs or VIP memberships

Medium Revenue Customers:

- New Business: Implement a "Welcome Discount" for first-time purchases to encourage initial engagements.

V. Conclusion

In summary, the analysis reveals recurring six-day peaks in revenue, a consistent downward trend, and a strong preference for cc@braintree across customer segments. High-revenue customers exhibit elevated engagement and a tendency for multiple purchases, with coupon usage significantly influencing their behavior. Sydney stands out as a key market. Recommendations include optimizing promotions on peak days, tailoring marketing to payment preferences, and implementing targeted coupon campaigns for high-revenue customers. Encouraging non-registered user conversion and considering regional dynamics in marketing efforts can enhance overall business performance. These insights guide strategic decisions for business growth.