Predicting Customer Spending at Datixity

Model

We employed a Logistic Regression model to classify customer transactions as "High Spenders" (above average total) and "Low Spenders" (below average total). The analysis utilized customer purchase data, which includes details on products, quantities, prices, customer demographics, and payment methods.

Evaluation Metrics

The Logistic Regression model achieved the following metrics on the testing set:

- Accuracy: 0.97
- Precision: 0.97
- Recall: 0.97
- F1score: 0.97
- ROC AUC Score: 0.969

These metrics indicate robust performance in distinguishing between high and low-spending transactions.

Feature Importance

The coefficients from the Logistic Regression model provide insights into feature importance:

1. **High Positive Impact**:
    - Quantity: 1.49 (Increased quantity correlates with higher spending)
    - Tax 5%: 3.97 (Reflects higher overall purchase value)

- COGS: 3.97 (Higher cost of goods sold correlates with high spending)
- Payment_Credit Card: 0.16 (Credit card users tend to spend more)
- Product Line: Sports and Travel: 0.15 (This category may include higherpriced items)

2. **High Negative Impact**:
    - Fashion Accessories: 0.49 (This category is associated with lowerpriced items)
    - Payment_Ewallet: 0.18 (Ewallet users tend to spend less on average)

Recommendations

Based on the analysis, the following strategies are proposed to increase customer transaction values:

1. **Product-Based Strategies**
    - Cross-Selling and Upselling: Encourage customers to purchase complementary items or premium versions of selected products by offering a 10% discount, potentially increasing average order value by 15%.
    - Bundle Promotions: Create attractive product bundles that group related items at a 20% discount, which may boost purchase sizes by 25%.
    - Limited-Time Offers: Promote highvalue products with a 30% discount for a limited time (e.g., one week) to create urgency, potentially increasing sales by 20%.
2. **Customer-Based Strategies**
    - Personalized Recommendations: Utilize customer purchase history to recommend tailored products with a 5% discount, enhancing relevance and potentially improving conversion rates by 10%.

- Tiered Loyalty Programs: Establish loyalty programs that offer exclusive rewards to highspending customers. This can lead to a 20% increase in repeat purchases by providing benefits such as priority access to sales.
- Targeted Promotions: Implement personalized promotions based on customer preferences and demographics via email or app notifications, which can result in a 15% increase in open rates and clickthrough rates.

3. **Payment-Based Strategies**
    - Credit Card Incentives: Offer exclusive discounts or rewards (e.g., cashback, points) for credit card users, which may increase credit card usage by 10% and improve average order value.
    - Buy Now, Pay Later (BNPL) Options: Introduce flexible payment solutions like BNPL to facilitate larger purchases, which could raise the average order value by 15%.
4. **Location-Based Strategies**
    - Local Promotions: Design promotions specific to certain branches or regions, targeting local preferences and trends. This could increase store traffic and sales by 10% through personalized marketing.
    - Store-Specific Events: Organize special events or promotions (e.g., instore demos, flash sales) at underperforming branches to enhance foot traffic and sales by 20%, creating unique experiences for local shoppers.

Important Considerations

The figures and percentages in the recommendations are speculative and based on industry best practices, benchmarks, and expert opinions. The actual impact of these strategies may vary depending on:

- The unique characteristics of Datixity's customer base

- The effectiveness of implementation
- The competitive landscape
- General economic conditions

For more accurate estimates, Datixity could conduct A/B testing or pilot programs to measure the actual impact of these strategies by implementing them on a smaller scale and comparing results to a control group.

Link

GitHub: https://github.com/JoshuaPaul-lasisi/Customer-Purchase-Behavior-Analysis

Dataset:https://drive.google.com/file/d/15AcAd06ok0ZqLrEiLYyMN6ZDm5BaAlrw/view?usp=share_link