

PHASE-I: EDA

Team Member's Details:

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Problem Description: XYZ Bank wants to send personalized Christmas offers to different customer groups instead of sending the same offer to all. The goal is to create no more than 5 customer segments using machine learning to improve the efficiency of the campaign.

GitHub Repo link: <https://github.com/Thir13teen/DG-week-10.git>

EDA Performed:

1. Customer Age Distribution: The age distribution is bimodal, with peaks around 20 and 40-50 years, indicating two main customer age groups. The dataset skews towards younger customers.
2. Customer Seniority: Most customers have low seniority (<50 months), with a steady decline in longer-tenure customers, suggesting a largely new customer base with opportunities for retention strategies.
3. Primary Customer Status and Relation: The primary_customer_status is highly imbalanced, predominantly 1.0. The start_of_month_customer_relation is more balanced between two categories (A and I), providing better differentiation for customer behavior analysis.
4. Financial Product Usage: current_account_status dominates customer product use, while saving_account_status and credit_card_status have significantly lower usage, indicating room for growth in these products.

5. Household Income Distribution: Income is highly right-skewed, with most households falling in the low-income range and a few high-income outliers. There's potential for segmentation based on income groups.
6. Customer Segmentation: Clustering analysis identified distinct customer segments based on customer_age, household_income, and customer_seniority_months, revealing the potential to create tailored marketing strategies for these segments.

Final Recommendation:

1) Customer Segmentation and Personalization:

- Employ KMeans customer clusters to develop focused marketing campaigns and product offerings. The distinct age-income groups have unique financial needs, in which banking products can be marketed.
- Your core customer base ranges from low to moderate-income households. You will develop products serving their needs, such as credit at an affordable cost, micro-savings products, or basic current accounts.

2) Strategy and Diversification:

- Given the current account usage dominance, create awareness of and benefits about savings accounts and credit card products for diversified usage of the product and deepening the relationships with customers.
- The bimodal distribution of both age and tenure indicates different customer lifecycles. Create product offerings in line with customer lifecycle, such as youth accounts, family savings plans, or retirement-oriented products targeting older segments.

3) Customer Retention and Growth:

- Since the composition of recently acquired customers is very high, focus on onboarding and retention programs to increase tenure for converting into long-standing customers.
- As the high-income segment is small in composition yet significant in number, senior customers with long tenures need to be targeted with premium products, wealth management services, or exclusive benefits to maximize revenue potential.

4) Customer Relationship and Engagement:

- A and I Categories Use the balance of A and I- probably active and inactive states of customers-to create strategies for their activation or re-engagement, while keeping the active ones.
- Some of the channels through which the customers join are more engaging; hence, optimize them to perform better in acquiring and retaining customers.

5) Retention and Loyalty Programs:

- Younger customers form a big chunk; it is vital to engage them and introduce programs on loyalty/engagement that will help customers be with the bank for life as they grow through different life stages.
- Communication and engagement with each segment should be through their channels of communication and finance to enhance customer experience and overall satisfaction.

6) Monitoring and Evaluation:

- Monitoring, on a regular basis, the use of different financial offerings, such as savings accounts and credit cards, by varied segments of customers to review marketing strategies and product development.
- Continuously map evolving customer segments to build changing behaviors and preferences that will enable nimble adjustments to marketing and product strategy.