Customer Segmentation Cluster Analysis

- *Cluster 0: Low-Value, Older Customers*
  - Education: Highest average (2.90)
  - Income: Lowest (-0.45)
  - Web Visits: Slightly above average (0.33)
  - Age: Oldest (5.41, likely 55+ years)
  - Purchases: Lowest (-0.72)
  - Spending: Lowest (-0.78)
  - Marital Status: Highest percentage of widowed (3.8%) and divorced (13.2%)

Interpretation: This cluster represents older customers with higher education but lower income and spending. They visit the website occasionally but have the lowest purchase and spending rates.

For more information, see jupyter notebook here

Customer Segmentation Cluster Analysis

- *Cluster 1: Average-Value, Middle-Aged Customers*
  - Education: Above average (2.65)
  - Income: Slightly above average (0.35)
  - Web Visits: Slightly above average (0.12)
  - Age: Second oldest (5.28, likely 45-54 years)
  - Purchases: Above average (1.00)
  - Spending: Slightly below average (0.45)
  - Marital Status: Highest percentage of married (40.4%)

Interpretation: This cluster represents middle-aged, married customers with above-average education and income. They have average web engagement and purchasing behavior.

For more information, see jupyter notebook here

Customer Segmentation Cluster Analysis

- *Cluster 2: High-Value, Young Adult Customers*
  - Education: Above average (2.50)
  - Income: Highest (1.10)
  - Web Visits: Lowest (-1.23)
  - Age: Second youngest (4.82, likely 35-44 years)
  - Purchases: Above average (0.66)
  - Spending: Highest (1.31)
  - Campaign Acceptance: Highest (0.82)
  - Marital Status: Highest percentage of engaged (26.3%)

Interpretation: This cluster represents young adult customers with high income and spending. They have the highest campaign acceptance rate but visit the website less frequently.

For more information, see jupyter notebook here

Customer Segmentation Cluster Analysis

- *Cluster 3: Low-Middle Value, Young Customers*
  - Education: Lowest (1.74)
  - Income: Second lowest (-0.87)
  - Web Visits: Highest (0.63)
  - Age: Youngest (4.00, likely 25-34 years)
  - Purchases: Slightly below average (-0.87)
  - Spending: Second lowest (-0.82)
  - Children: Highest average (0.96)
  - Marital Status: Highest percentage of single (26.8%)

Interpretation: This cluster represents young, single customers with lower education and income. They have the highest web engagement but lower purchasing and spending rates.

For more information, see jupyter notebook here

Customer Personality Analysis for Marketing Retargeting

Rakamin Academy

Key Insights:

- Age and life stage significantly influence customer behavior across clusters.
- Income levels correlate with spending patterns and campaign responsiveness.
- Web engagement doesn't always translate to higher purchase rates or spending.
- Education levels vary across clusters but don't directly correlate with spending.
- Marital status and the presence of children appear to influence customer behavior.

For more information, see jupyter notebook here

Customer Personality Analysis for Marketing Retargeting

Rakamin Academy

Insights	Action	Example
Age and Life Stage Influence	Develop age-specific marketing campaigns and product offerings.	- Create a loyalty program for older customers in Cluster 0, focusing on value and reliability. - Design trendy, innovative products for the younger Cluster 3, emphasizing digital engagement.
Income Levels Correlation	Tailor pricing strategies and product ranges to each cluster's income level.	- Offer premium, high-end products to Cluster 2 (high-income group). - Develop budget-friendly options and value deals for Clusters 0 and 3.
Web Engagement vs. Purchase Rates	Optimize the website to convert high engagement into sales, especially for Cluster 3.	- Implement personalized product recommendations and targeted promotions on the website. - Use retargeting ads for Cluster 3 to convert their high web visits into purchases.

For more information, see jupyter notebook here

Customer Personality Analysis for Marketing Retargeting

Insights	Action	Example
Education Level Variations	Adjust communication styles and product information to suit each cluster's education level.	- Provide detailed, in-depth product information for the highly educated Cluster 0. - Create more visual, easy-to-understand content for Cluster 3 with lower average education.
Marital Status and Children Influence	Develop products and services that cater to different family structures.	- Create family-oriented promotions for Cluster 3, which has the highest average number of children. - Develop "couples" packages or services for the predominantly married Cluster 1.

For more information, see jupyter notebook here

Customer Personality Analysis for Marketing Retargeting

Insights	Action	Example
Cross-Cluster Strategies	Implement strategies to move customers up to higher-value clusters.	- Create a mentorship program where high-value customers from Cluster 2 share experiences with those in Cluster 3, potentially increasing engagement and spend. - Develop a tiered loyalty program that encourages customers to increase their purchasing behavior to reach higher tiers with better benefits.
Customer Lifetime Value Focus	Implement strategies to increase the lifetime value of customers in each cluster.	- For Cluster 0, focus on retention through personalized service and age-appropriate products. - For Cluster 2, emphasize exclusive experiences and early access to new products to maintain their high-value status.

For more information, see jupyter notebook here

Customer Personality Analysis for Marketing Retargeting

Comparison of EDA and Clustering Insights

- *Similarities*
  - Income and Spending Correlation
    - EDA: Higher income levels are associated with higher conversion rates and increased total spending.
    - Clustering: Income levels correlate with spending patterns and campaign responsiveness (Key Insight 2).
    - Similarity: Both analyses confirm that higher income is associated with higher value customers in terms of conversions and overall spending.
  - Age-Based Differences
    - EDA: Younger to middle-aged adults tend to have higher conversion rates compared to older age groups.
    - Clustering: Age and life stage significantly influence customer behavior across clusters (Key Insight 1).
    - Similarity: Both analyses highlight the importance of age in customer behavior, suggesting the need for age-specific marketing strategies.
  - Interconnected Customer Behavior
    - EDA: Strong interconnections between different types of customer spending, with positive correlations across product categories and purchase channels.
    - Clustering: Web engagement doesn't always translate to higher purchase rates or spending (Key Insight 3).
    - Similarity: Both analyses suggest complex relationships between different aspects of customer behavior, although they highlight different specific relationships.

For more information, see jupyter notebook here

Customer Personality Analysis for Marketing Retargeting

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Comparison of EDA and Clustering Insights

- *Potential Contradictions or Nuances*
  - Web Engagement and Purchases
    - EDA: Suggests a positive correlation between engagement and spending across channels.
    - Clustering: Indicates that high web engagement doesn't always lead to higher purchase rates (Key Insight 3).
    - Nuance: This suggests that while there's generally a positive relationship between engagement and spending, this relationship may vary across different customer segments.
  - Age and Value
    - EDA: Suggests younger to middle-aged adults have higher conversion rates.
    - Clustering: Identifies the oldest cluster (Cluster 0) as having the highest education but lowest income and spending.
    - Nuance: This highlights the complexity of age-based segmentation, where factors like education and income interact with age to influence customer behavior.
  - Education and Customer Value
    - EDA: Doesn't explicitly mention education.
    - Clustering: Notes that education levels vary across clusters but don't directly correlate with spending (Key Insight 4).
    - Nuance: This suggests that while education is an important factor in segmentation, its relationship with customer value is not straightforward and interacts with other factors like age and income.

For more information, see jupyter notebook here

Additional Insights from Clustering

1. The clustering analysis provides additional insights into the role of marital status and presence of children in customer behavior.
2. The clustering approach allowed for the identification of distinct customer segments (e.g., high-value young adults, low-middle value young customers), providing a more nuanced view than the general trends identified in the EDA.

For more information, see jupyter notebook here