Customer Segmentation Project

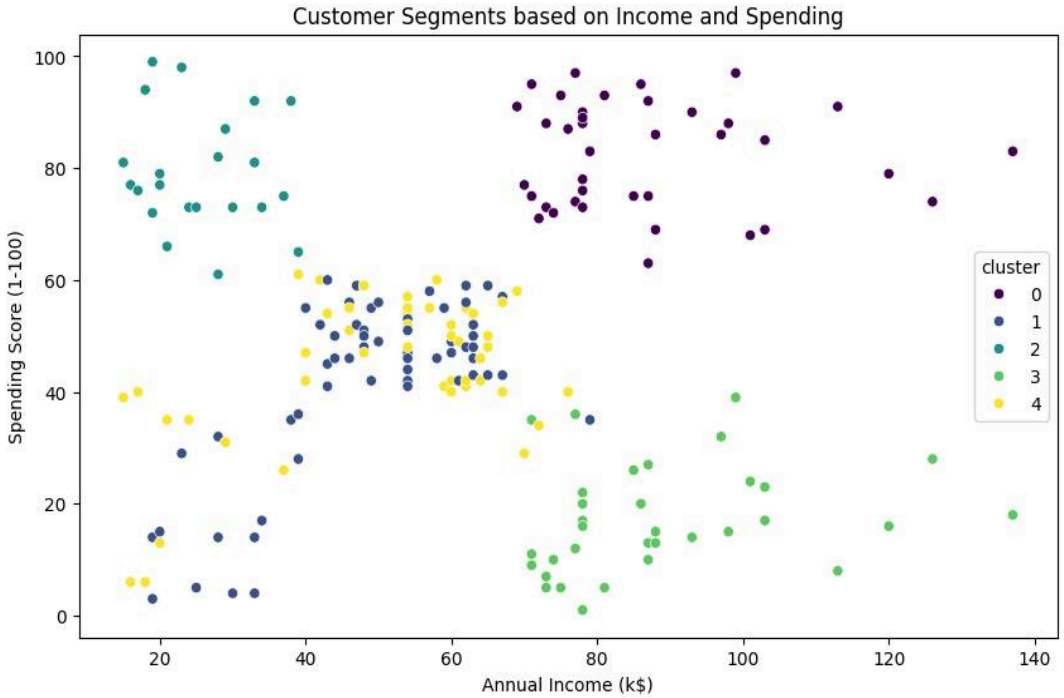
Data Analysis Key Findings

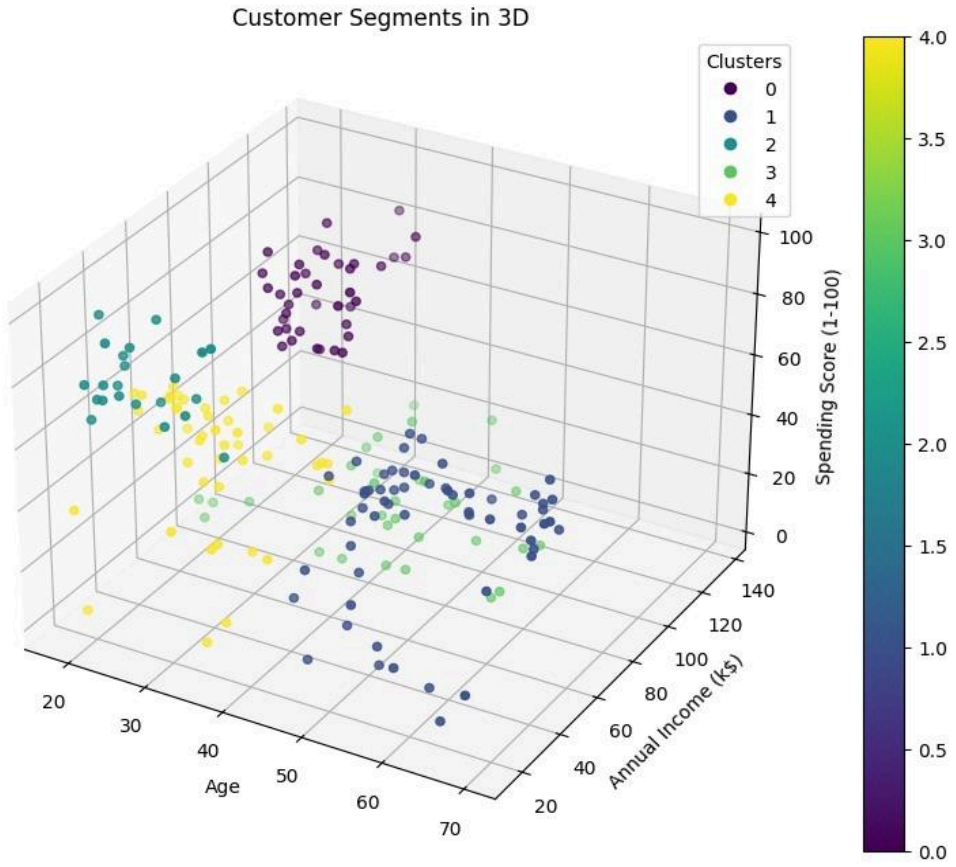
- The dataset customer_behaviour_data.csv was successfully loaded and contained no missing values.
- The available data included 'CustomerID', 'Gender', 'Age', 'Annual Income (k$)', and 'Spending Score (1-100)'.
- RFM (Recency, Frequency, Monetary) features could not be engineered due to the absence of transaction-level data (dates, identifiers, amounts).
- Customer data was preprocessed by scaling numerical features ('Age', 'Annual Income (k$)', 'Spending Score (1-100)') and one-hot encoding the categorical feature ('Gender').
- K-Means clustering was applied to the preprocessed data, resulting in 5 distinct customer segments.
- Analysis of the segments revealed distinct profiles based on average age, annual income, spending score, and gender distribution.
    - Cluster 0: High Income, High Spending, balanced gender.
    - Cluster 1: Older, Moderate Income, Moderate Spending, slightly more female.
    - Cluster 2: Young, Low Income, High Spending, predominantly female.
    - Cluster 3: High Income, Low Spending, slightly more male.
    - Cluster 4: Young, Moderate Income, Moderate Spending, predominantly female.

Insights or Next Steps

- The identified customer segments provide a strong basis for developing targeted marketing campaigns, allowing for more personalized messaging and offers for each group.
- To enhance future segmentation and marketing strategies, consider collecting transaction-level data to enable RFM analysis and potentially uncover different behavioral patterns.

Visualizations





Summary:

Key Findings

- The visualization step successfully generated both 2D and 3D scatter plots, effectively representing the customer clusters.
- The plots show customer segmentation based on 'Annual Income (k$)', 'Spending Score (1-100)', and 'Age', with different colors distinguishing each cluster.

Insights or Next Steps

- Analyzing the visual separation and characteristics of each cluster in the plots can provide insights into the different customer segments' behaviors.
- These visualizations can be used to inform targeted marketing strategies for each identified customer segment.