SKILL CAMPER

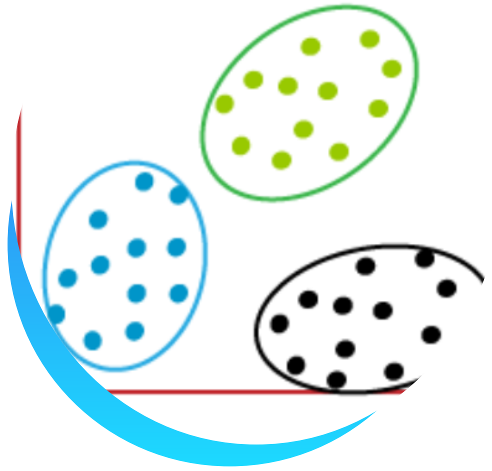
Customer Segmentation

Strategy

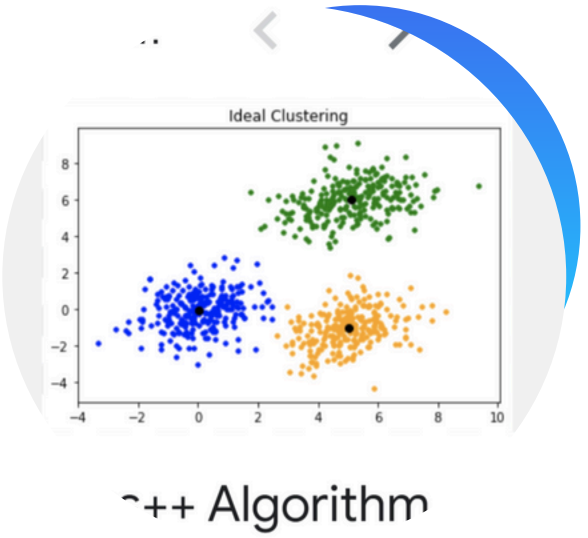
For Banking Marketing

Algorithms Used

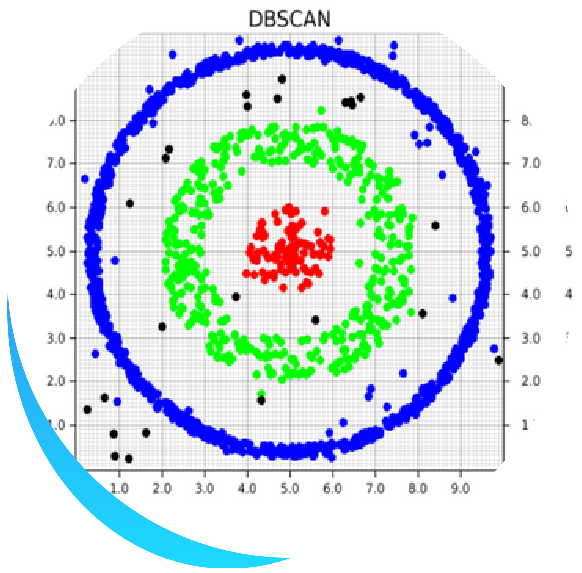
The algorithms used in customer segmentation are K-Means++, Hierarchical Clustering, and DBSCAN. Each offer unique ways to group customers based on data patterns. K-Means++ is efficient for creating clusters with well-separated groups and minimizes random starting errors, making it ideal for clear, compact segments. Hierarchical Clustering builds a hierarchy of clusters. DBSCAN is density-based and can identify irregularly shaped clusters and outliers.



K-Means



K-Means ++



DBSCAN

Hierarchical Clustering

SKILL CAMPER

Objective

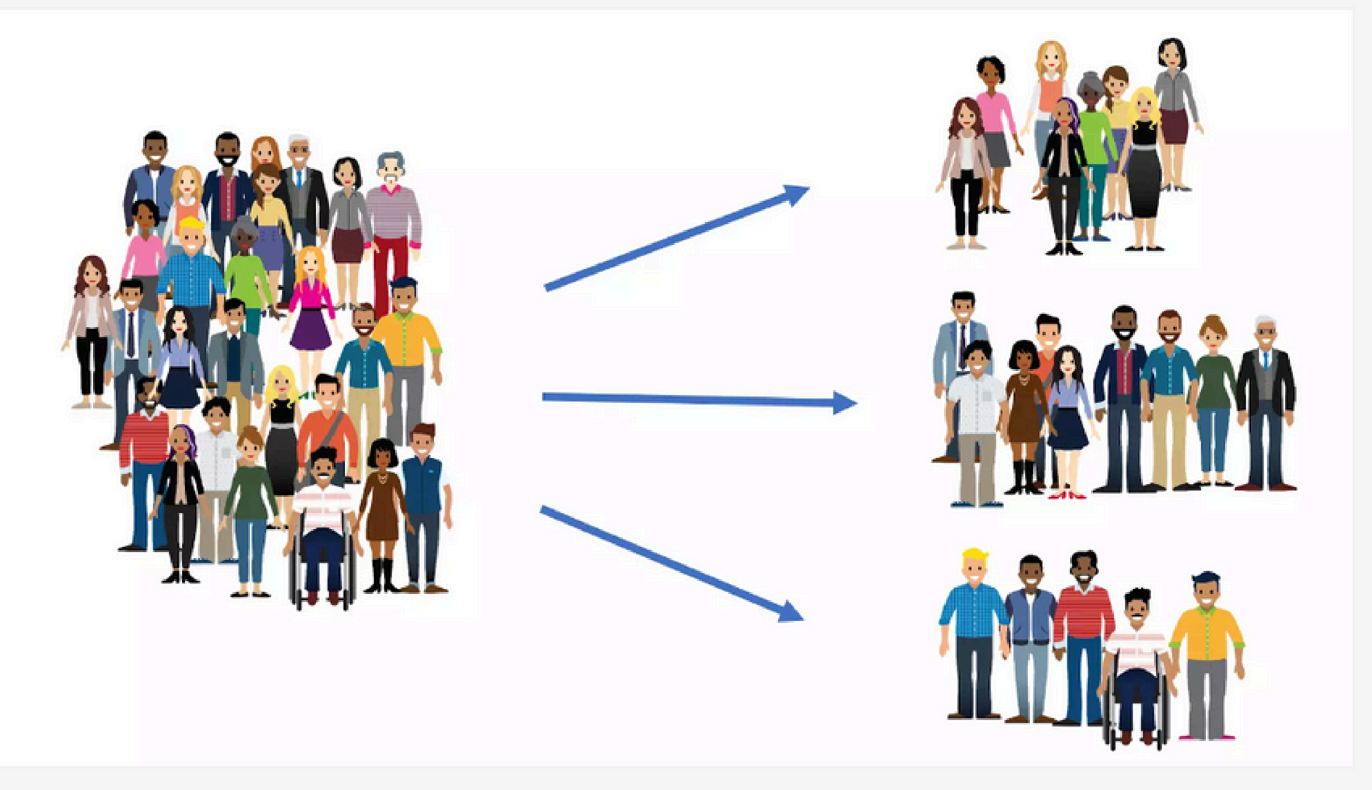
To group customers into categories based on their behavior and demographics, like age, income, and spending habits. By understanding these groups, banks can create targeted marketing campaigns and offer personalized services that match each group's needs.

This helps increase customer satisfaction, improves marketing efficiency, and boosts customer retention, ultimately leading to better returns on marketing investments.

What is customer segmentation?

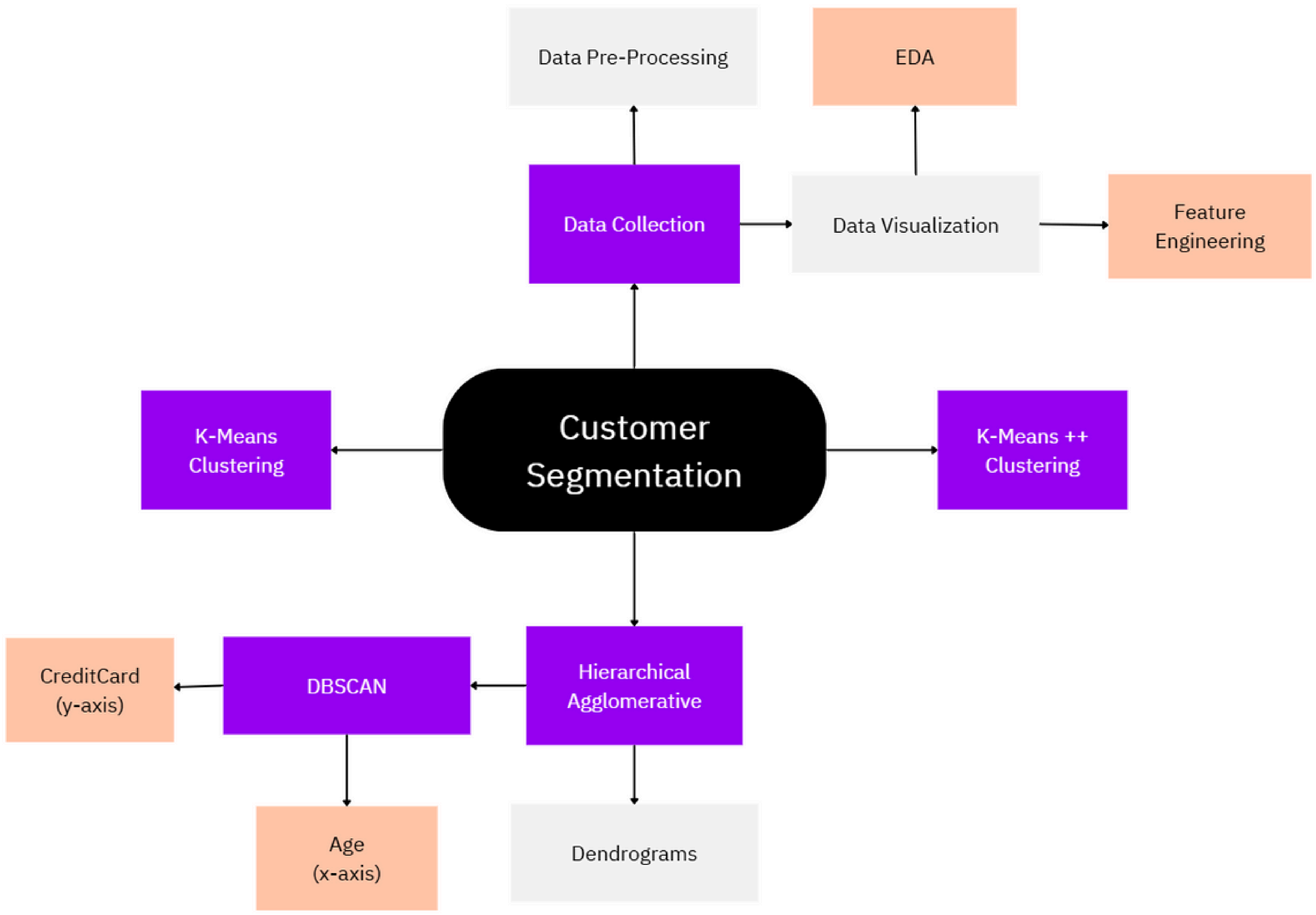
Customer segmentation is the process of dividing a bank's customers into smaller groups based on similar characteristics, like age, income, spending habits, or interests. Instead of treating all customers the same, banks group customers with similar needs or behaviors together. This helps them understand who their customers are and what they need, so they can serve them better.

By understanding these segments, banks can create tailored products, services, and marketing campaigns that are more likely to appeal to each group. This focused approach makes customers feel valued, increases satisfaction, and helps the bank build stronger relationships.



Block
Diagram

Customer segmentation undergoes the following steps.



Customer Segmentation Flow

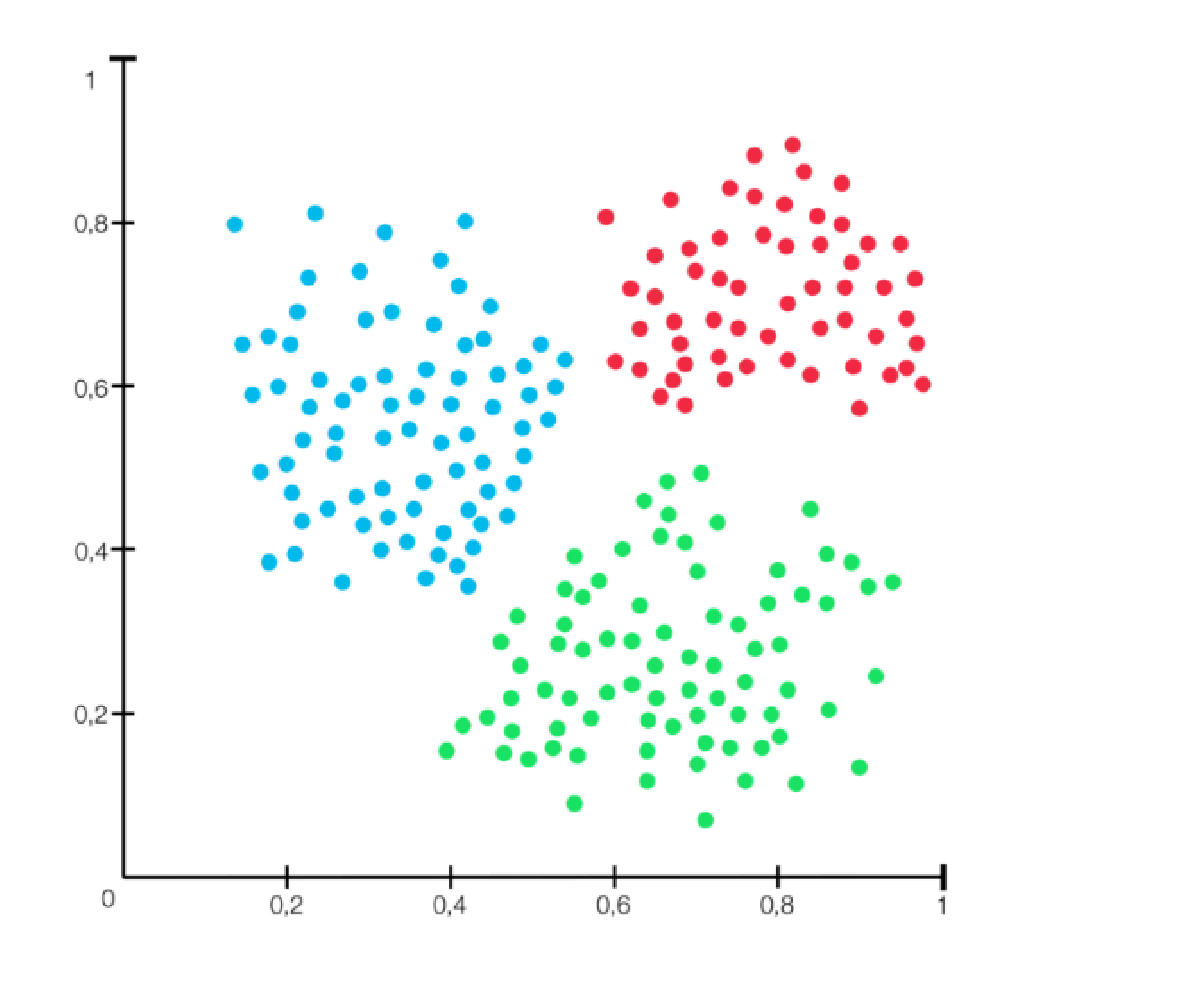
1. **Data Collection**: The data has been gathered from kaggle. The customers are segmented through their demographics information, loan information and product usage such as Age, Experience, Income, Family, CCAvg, Education, Mortgage ,etc....

2. Data Preprocessing: The data is Cleaned and standardized to handle missing values and scale features. Preprocessing ensures consistent and reliable inputs for the clustering algorithms.

Customer Segmentation Flow

3. Algorithm Selection: Clustering algorithms like K-Means, K-Means++, DBSCAN, and Hierarchical Agglomerative Clustering has been used. Each algorithm provides different insights into the customer groups based on density or hierarchy

4. Cluster Analysis: Interpreted the clusters to identify customer segments, like high-income or young customers. These clusters reveal the behavioral patterns for targeted marketing.



SKILL CAMPER

Customer Segmentation Flow

5. Marketing Strategies: Developed personalized marketing strategies for each customer segment. Tailored campaigns improve engagement, retention, and customer satisfaction.

6. Evaluation Metrics: Used metrics like silhouette score to assess cluster quality and separation. These metrics validate how well the segmentation represents distinct customer groups.

Bussiness outcomes

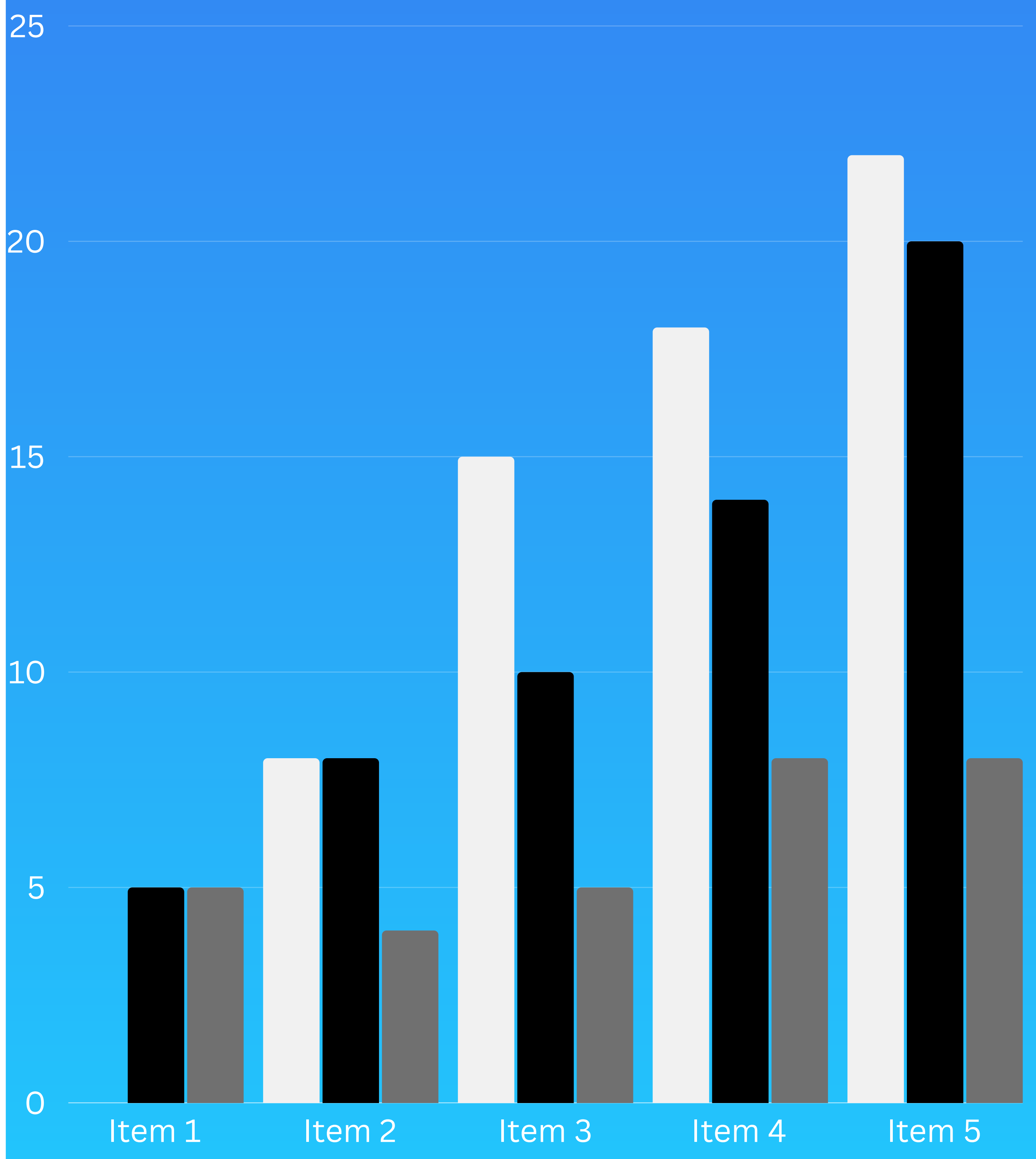
1. **Improved Marketing ROI:** Targeted campaigns ensure marketing budgets are spent on relevant segments, maximizing returns. Effective resource allocation reduces waste and enhances campaign efficiency.

2. Enhanced Customer Engagement: Tailored marketing campaigns increase customer interest and response rates. Engaged customers are more likely to explore additional bank services, improving overall interaction.

Bussiness outcomes

3. Higher Customer Retention: Personalized services based on segmentation make customers feel valued, leading to higher satisfaction and loyalty. Reduced customer churn saves acquisition costs and boosts long-term profitability.

4. Revenue Growth: Cross-selling and upselling opportunities become more apparent within each segment, such as promoting loans or investments to relevant customers. Increased product uptake drives revenue growth.



Bussiness outcomes

5. Operational Efficiency: Resources are allocated to high-value segments for personalized services, while automated solutions serve simpler needs. This segmentation optimizes resources and improves overall efficiency.

6. Stronger Competitive Position: With insights into customer preferences, banks can stay ahead of competitors by offering targeted and innovative services. A clear customer understanding strengthens the bank's market position