✓ Multi-Behavior RFM Model Based on Improved SOM Neural Network Algorithm for Customer Segmentation. (Base Paper)

- Previous research on RFM models:
  The paper mentions that previous research on RFM models focused on analyzing only one type of user behavior data, which is the purchase behavior. Other interactions between users and items, such as clicking, favoriting, and adding items to the cart, were not considered.
- Proposal of a novel solution:
  The paper proposes a novel solution for deconstructing multiple behaviors of consumers within a specific period and performing customer segmentation. This solution is called the multi-behavior RFM (MB-RFM) model.
- Utilization of R, F, and M values:
  The proposed solution utilizes the recency (R), frequency (F), and monetary value (M) values to analyze the weight relationship between multiple behaviors of users and items. The superiority chart and entropy value methods are used for this analysis.
- Inclusion of multiple behaviors in the MB-RFM model:
  Each behavior exhibited by a customer is considered as a part of the MB-RFM model values. These values are then used to classify customers using an improved self-organizing map (SOM) neural network.
- Development of promotion strategies:
  Various promotion strategies are developed based on the customer categories obtained through the MB-RFM model. These strategies aim to improve application utilization and implement targeted promotion strategies for application vendors.
- Experimental validation:
  To validate the effectiveness of the proposed method, the paper uses two real-world datasets with sparse data. The experimental results demonstrate that the classification performance of the proposed method is significantly more accurate.
- Index terms:
  The paper provides index terms to summarize the key concepts discussed in the paper. The index terms include application promotion system, customer segmentation, multi-behavior RFM model, and self-organizing map neural network.

✓ Combining RFM Model and Clustering Techniques for Customer Value Analysis of a Company selling online.

- The paper presents a case study applying RFM model and clustering techniques to analyze customer value in the online commerce sector.
- Self-organizing maps (SOM) and K-means clustering are used to classify customers into eight clusters based on recency, frequency, and monetary variables.
- The study aims to identify loyal and profitable customers for effective marketing strategies by computing average RFM values for each cluster.
- Cluster 7 is identified as the most important cluster with higher average values of recency, frequency, and monetary variables.
- The integration of RFM model and clustering techniques allows for customer segmentation and better market segmentation for improved customer satisfaction and profitability.
- Recency, frequency, and monetary (RFM) model is an effective method for market segmentation based on customer behavior and spending patterns.
- The paper discusses the use of Self-Organizing Maps (SOM) and K-means algorithm as data mining techniques for clustering analysis.
- The RFM model helps in identifying profitable customers by analyzing their recency, frequency, and monetary values.
- The K-means clustering method is employed to group customers into similar clusters based on their RFM values.
- The number of clusters and their characteristics are determined using the combination of RFM model and clustering techniques.

✓ Customer Segmentation Using Machine Learning Model: An Application of RFM Analysis.

- The paper discusses customer segmentation using a combination of machine learning techniques and RFM (Recency, Frequency, Monetary) analysis.
- The goal is to predict customer churn based on transactional data.
- The study focuses on businesses in the United Kingdom that often rely on transactional data from Enterprise resource planning (ERP) systems.
- The dataset used in the research is obtained from an online retail dataset search website.
- RFM scores are computed for each customer based on recency, frequency, and monetary value.
- The paper compares the use of K-means and DBSCAN clustering algorithms.
- The limitations of RFM analysis include its lack of consideration for customer demographics and future customer behavior.
- The need for a more comprehensive approach that incorporates advanced predictive methods is highlighted.
- The paper emphasizes the importance of personalized and targeted marketing campaigns based on customer segmentation.
- Customer churn prediction involves using supervised machine learning models trained on historical data.
- The choice of the best machine learning algorithm for customer churn prediction is debated, and the paper proposes and evaluates different algorithms.
- The research contributes to the literature on customer segmentation methodologies, with a focus on the allocation of resources to high-value customers.
- The authors mention the challenges of identifying an optimal segmentation strategy and the potential use of data integration for more accurate predictions.
- The paper concludes that dividing customers into distinct clusters is a practical and straightforward approach.

✓ New RFM-D Classification model for improving customers analysis and response prediction.

- The paper introduces a new RFM-D classification model for improving customer analysis and response prediction in marketing campaigns.
- Customer segmentation is crucial for successful advertising and marketing strategies.
- The RFM model (Recency, Frequency, Monetary) is commonly used for customer segmentation, but it has limitations in certain contexts.
- The proposed RFM-D model adds a fourth parameter, Diversity (D), which considers the diversification of products purchased by customers.
- The model aims to identify behavior patterns and predict customer responses to new product offerings.
- Machine learning techniques, particularly clustering algorithms like K-Means, are applied for customer segmentation based on the RFM-D model.
- The optimal number of clusters is determined using evaluation methods such as the silhouette and Elbow methods.
- The effectiveness of the segmentation is measured by calculating the accuracy of customer responses to new products.
- Diversity is a behavioral parameter that reflects customers' preferences for diversified product baskets.
- The study highlights the importance of customer segmentation and offers a novel approach to improve the RFM model for better marketing campaign outcomes.

✓ RFM ranking – An effective approach to customer segmentation.

- The paper discusses the use of RFM (Recency, Frequency, and Monetary) analysis for customer segmentation in enterprises.
- Customer segmentation based on RFM values helps in understanding customer needs and identifying potential customers.
- Retaining existing customers is considered more important than acquiring new customers.
- The paper proposes a novel method for choosing initial centroids in the K-Means algorithm for customer segmentation.
- The study compares the results obtained from K-Means, Fuzzy C-Means, and the proposed method based on iterations, cluster compactness, and execution time.
- Customer segmentation using behavioral data and RFM analysis is effective in predicting customer patterns and lifetime.
- The K-Means algorithm is applied to cluster the customer base, and the behavior of each cluster is analyzed to identify profitable customer segments.
- Fuzzy C-Means clustering and the proposed method with chosen initial centroids are also used for customer segmentation.
- The study aims to reduce the number of iterations and time required for customer segmentation.
- The clusters of customers are analyzed to understand the differences between them and target specific customers with appropriate promotions and offers.
- The paper introduces a Repetitive Median based K-Means algorithm to further improve clustering efficiency.
- The study evaluates the clustering approaches based on iterations, cluster compactness, execution time, and other factors.
- The literature review highlights various approaches and algorithms used for customer segmentation, including K-Classifiers Segmentation, customer lifetime value (CLV) improvement, weighted frequent pattern mining, and CRM.
- The paper emphasizes the importance of customer segmentation for marketing strategies, product development, and advertising campaigns.
- The authors discuss the integration of RFM analysis and customer segmentation with other methods such as LTV and churn prediction.
- The paper concludes that meaningful customer segmentation obtained through the proposed approaches can benefit marketing professionals.

✓ Customer Segmentation Using Fuzzy-AHP and RFM Model.

- The paper focuses on customer segmentation using the RFM (Recency, Frequency, Monetary) model and Fuzzy-AHP (Analytic Hierarchy Process) technique.
- The goal is to determine the customer lifetime value (CLV) for a UK-based company that sells unique gifts.
- Customer segmentation is performed based on the three purchase variables: Recency, Frequency, and Monetary.
- Fuzzy AHP is used to assign weights or priority to these variables.
- The dataset is divided into eight clusters, and CLV values are used to rank these clusters.
- The results help marketers make selling and marketing decisions based on CLV values.
- Customer lifetime value (CLV) is defined as the total value a customer brings to the company over their lifetime.
- RFM is a behavioral model used for customer loyalty and predicting future customer behavior.
- The study applies customer segmentation to a transactional dataset of a UK-based company.
- K-means clustering is utilized for data segmentation, aiming to classify data into homogeneous subgroups.
- Fuzzy-AHP combines fuzzy set theory with the AHP technique for evaluating criteria.
- The paper presents a numerical illustration of the proposed framework.