Multi-Behavior RFM Model Based on Improved SOM Neural Network Algorithm for Customer Segmentation

Yashraj Devrat
Anish Date
Shubham Keskar
Vipshyana Jawale

yashraj.devrat.aids.2020@vpkbiet.org

Guide - Prof.Pradip Paithane
Department of Artificial Intelligence & Data Science
Vidya Pratishthan's Kamalnayan Bajaj Institute of Engineering and
Technology
Vidyanagari, Baramati-413133

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Content

- Introduction of RFM

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- Objectives

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What is RFM and how it is used for customer segmentation ?

- Recency : Measures the number of days that have passed since the customer's last transaction.

- Frequency : Measures the number of times the customer has engaged with the business.

- Monetary : Measures the monetary value of customers transaction.

- RFM Analysis : RFM analysis assigns scores to each customer based on these three factors and puts them into segments.

Problem Statement

How can we classify customers effectively for profit of company ?

Combining RFM And SOM Neural Network For Customer Segmentation

- RFM Segmentation.

- SOM Neural Network

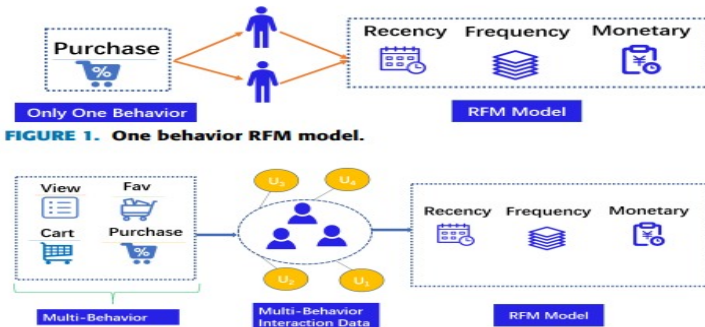- K-Means Clustering.

Methodology

Multi-Behavior RFM (MB-RFM) Based On Self Organization Maps Algorithm

- SOM method to determine best number of clusters for the model.
- Research Classified 730 customers into eight groups via the K-means method .

FIGURE 1. One behavior RFM model.

Multi-Behaivour RFM Model

Algorithm

Categories Of Clusters

- Key Customers
- Key Development Customers
- General Development Customers
- General Retention Customers
- Key Retention Customers
- Maintenance Customers
- Worthless Customers

Research Paper

- 1. Multi-Behavior RFM Model Based on Improved SOM Neural Network Algorithm for Customer Segmentation.

- 2. Combination of Adaptive Resonance Theory 2 and RFM Model For Customer Segmentation in Retail Company.

- 3. An Empirical Study Study on Customer Segmentation By Purchase Behaivour Using a RFM Model and K-Means Algorithm

- 4. RFM ranking – An Effective Approach To Customer Segmentation

Applications

Real-world examples of customer segmentation using RFM and kmeans model

- Retail Industry : A retail chain used RFM and kmeans to segment its customers and found that a small but valuable segment showed low customer engagement.
- Beverage Industry : Using RFM and kmeans to analyze customer behavior, a beverage company identified five distinct groups based on buying habits, allowing it to target its marketing appropriately and increase its sales.
- Finanace Sector : A bank used RFM and kmeans to segment customers, and discovered that a specific high-value group exhibited a particular spending pattern.

Conclusion

Key Takeways from the Project

- Customer segmentation is critical for businesses to leverage the power of data analysis for improved profitability.
- When segmentation techniques like RFM and SOM Neural Network are used together, the insight gained can generate significant returns on investment.
- SOM model was used to classify customers into seven categories to provide complementary marketing strategies .
- The proposed MB-RFM model could analyze and extract user-item multi-behaviors and effectively implement customer classification .

Thank you