Abstract

Recency, Frequency, Monetary model (RFM) has been widely used to analyze the customers’ value in traditional market using three purchasing behavior attributes. This is considered one dimensional view of customers’ value that is based on profit and purchasing criteria and ignores other useful attributes. Online customers have additional attributes that when captured and analyzed can give more details about customers’ value other than provided by traditional RFM model. This gives companies better vision of their customers, and therefore serve them effectively, resulting in strong and long relationship with them. New Behavioral RFM Model (BRFM) is proposed in this paper to provide online retailers with a new customers' insight that reflects their web behavior beside their profitability. Three web behavioral attributes, represented in Recency of Session (Rs), Frequency of Session (Fs), and Number of clicks (NoC) are added to the traditional RFM attributes for customer value segmentation in online market using K-means clustering algorithm. The effectiveness of BRFM model is compared against the traditional RFM using Dunn index and Davies- Bouldin measures. Results show that the BRFM model enhances the clustering accuracy and reveals new customers’ clusters.
disregarded by the traditional RFM model.

References

study of RFM model-based customer segmentation using data mining. Journal of Database

small-sized online shopping mall based on association rules and sequential patterns. Expert
Systems with Applications. 39 (9), 7736- 7742.

(Eds.), Data Mining Using RFM Analysis. INTECH publisher, Croatia, PP. 91-108.

Value: An Electronic Retailing Case Study. In The 3rd International Conference on Data Mining
and Intelligent Information Technology Applications. The Westin Resort Coloane, Macao.

Lifetime Value and RFM Model by Data Mining Techniques. International Journal of Information
Science and Management, 70-82.

segmentation quality under different preprocessing types of RFM attributes. International

Usage Data: A Survey of Web Usage Pre-processing Techniques, In: Das V.V. et al. (Eds.),
Information Processing and Management. Communications in Computer and Information

discovery and applications of usage patterns from Web data. SIGKDD Explorations
Newsletter.1 (2), 12-23.

Morgan Kaufmann Publishers, Burlington, Massachusetts.


Performance and Validity Indices for Clustering the Web Navigational Sessions. World of

Clustering and Application in Color Image Segmentation. The 4th International Conference on
Advances in Pattern Recognition and Digital Techniques, Portugal.

Perner P. (Eds.), Machine Learning and Data Mining in Pattern Recognition. Springer, Berlin,

Techniques. In 5th WSEAS International Conference on Artificial Intelligence, Knowledge
Engineering and Data Bases WSEAS International Conference on Artificial Intelligence,
Knowledge Engineering and Data Bases, Cambridge, United Kingdom.

Index Terms

Computer Science  Information Sciences
Keywords

Customer value analysis; Recency, Frequency, Monetary Model; K-means clustering algorithm; Dunn Index (DI); Davies Bouldin (DB)