New Insight into Customer Value Analysis using Data Mining Techniques

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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.

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Index Terms

Computer Science Information Sciences
Keywords

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