Abstract

Multifinance is a financial finance company that plays a role in providing customer funds for procurement of goods based on the productive and consumptive needs of the community. In carrying out its operations, the Company observes customer data based on customer risk profiling to determine how much loan the company can provide. However, customer data which consists of many numbers and categories and has an unstructured form makes it difficult for financial institutions to make decisions on the financing process. then we need a tool that can group customer data based on the level of similarity or proximity between the data so as to make it easier for companies to segment customer profiles based on the level of risk. To overcome this problem, this study uses the Clustering method to group mixed-type data on customer data of a multi-finance company PT Bima Multifinance Branch Sragen using the k-prototype algorithm. The working procedure of the k-prototype algorithm is by integrating the k-means and k-modes algorithms that are used to handle mixed data types. In addition, the k-prototype algorithm has advantages such as being easy to implement and being able to handle large data sets better than other hierarchical-based algorithms. The test in this study uses elbow calculations to find the optimal cluster and performs further analysis by re-testing at the initiation stage of the number of clusters. The results of clustering in this study show one type of cluster with a 100% smoothness rate and the total salary to customer installment ratio is below the average, namely 1.3% which makes this cluster a cluster with the highest smoothness rate compared to other clusters.

Keywords: *Multifinance, Mixed Type Data, Clustering, K-Prototype, K-Means, K-Modes.*