ABSTRACT

The rapid growth of e-commerce has driven the use of affiliate marketing to boost sales. However, its effectiveness varies based on several factors. This study classifies office stationery products based on sales performance using Agglomerative Hierarchical Clustering and optimizes the number of clusters with Pseudo F-Statistic. A Graphical User Interface (GUI) built with R Shiny facilitates data analysis and interpretation of clustering patterns, enabling business owners to evaluate product performance and refine marketing strategies effectively. The analysis identifies three optimal clusters using the Ward method with a Pseudo F-Statistic value of 77.42. Cluster 1 contains high-performing products with strong sales, clicks, and positive Return on Investment (ROI). Cluster 2 includes products with high clicks but low conversions and negative ROI. Cluster 3 consists of products with low clicks and sales, yet a positive ROI, indicating room for marketing improvement. Validation confirms that Agglomerative Hierarchical Clustering effectively categorizes products based on sales performance. The findings serve as a foundation for optimizing affiliate marketing strategies, ensuring better targeting and profitability.

Keywords: Affiliate Marketing, E-Commerce, Shopee, Agglomerative Hierarchical Clustering, Pseudo F-Statistic, ROI, R GUI.