

ABSTRACT

***CUSTOMER CHURN ANALYSIS WITH DATA MINING
IMPLEMENTATION BASED ON RANDOM FOREST ALGORITHM
(CASE STUDY: PT PRIORITAS PURWOKERTO GROUP)***

PT Prioritas Purwokerto Group, a retail business operating in the furniture and electronics sector with four branches in Bobotsari, Sidareja, Maos, and Purwokerto, is compelled to adapt rapidly to the changing market landscape. Digital transformation has become a key strategy in addressing these challenges, particularly with the shift in consumption patterns post-pandemic and the rapid growth of e-commerce. The company faces significant challenges in maintaining market share and overcoming declining sales, with *customer churn* being a critical issue that needs to be addressed. This study focuses on identifying *customers* with high *churn* potential and the factors influencing it. Utilizing the RapidMiner data mining platform and implementing the Random Forest algorithm, an accuracy value of 97.28% was achieved, indicating the model's strong ability to correctly classify data. Recency, Frequency, Monetary (RFM) segmentation was employed to analyze *customer* data obtained from the Company's database, consisting of 6961 data points. Following RFM segmentation, 340 *customer* data points were classified into four loyalty categories: Platinum, Gold, Diamond, and Silver. The analysis revealed that 54% of PT Prioritas Purwokerto Group's *customers* fall into the Gold category, followed by 29% Silver, 14% Platinum, and 3% Diamond. The dominance of the Gold category indicates a relatively high *customer churn* rate, necessitating the implementation of effective retention strategies to enhance *customer* loyalty. This contributes to increased *customer* loyalty, optimized profitability, and the achievement of sustainable competitive advantages..

Keywords: Retail Business, Customer Churn, Random Forest, RFM, RapidMiner