

ANALYSIS OF CUSTOMER SATISFACTION LEVELS AT PLASA TELECOMMUNICATIONS BENGKALIS USING THE RANDOM FOREST ALGORITHM

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ABSTRACT

This research implements the Random Forest algorithm to analyze customer satisfaction levels at Plasa Telekomunikasi Bengkalis. Customer satisfaction is a significant challenge for Plasa Telekomunikasi Bengkalis as it can help the company prevent customer loss, retain existing customers, attract new customers, and increase long-term revenue and profit. The Random Forest algorithm is used to analyze customer data based on variables of product quality, service quality, price quality, service quality, and customer satisfaction. The research aim is to help Plasa Telekomunikasi Bengkalis identify factors that affect customer satisfaction and build a system that can understand customer satisfaction levels using the Random Forest algorithm. The research uses the waterfall methodology to develop a web-based system. Data was obtained through questionnaires, then processed through preprocessing, data cleaning, transformation, and division into training and testing data. The Random Forest model developed achieved 91.67% accuracy, 93% precision, 92% recall, and 92% F1-Score. The analysis results show five variables that influence satisfaction with their impact weights: price quality (0.29), product quality (0.27), customer satisfaction (0.23), service quality (0.14), and technical service quality (0.08). Based on these results, improvement focus should be directed to variables that need enhancement, especially price quality and product quality. This model is expected to be an effective instrument for improving customer satisfaction.

Keywords : *Indihome, Customer Satisfaction, Random Forest*