DECISION SUPPORT SYSTEM FOR STOCK REPLENISHMENT USING TOPSIS METHOD ON A MOBILE PLATFORM CASE STUDY: TWINS PANCING STORE IN TEMANGGUNG

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ABSTRACT

Ineffective stock management can lead to issues such as overstocking or stockouts, inaccurate pricing decisions, and difficulties in identifying best-selling products—factors that negatively impact the performance and profitability of Twins Pancing Store in Temanggung and reduce customer satisfaction. To address these challenges, this study develops a mobile-based Decision Support System (DSS) utilizing the TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) method. The system is designed to assist store owners in making informed decisions regarding stock replenishment, inventory management, and identification of high-demand products. The research process includes problem identification, data collection, system architecture design, implementation of the TOPSIS method, and system testing. Decision-making factors include price, stock quantity, and weekly sales. The results indicate that the system effectively recommends stock replenishment, prioritizing products with strong sales and adequate stock levels. The top-ranked product recommendation was *Joran Red Angle* with a preference value of 0.8963. System testing with real data from Twins Pancing Store showed a 98% accuracy rate when compared to manual calculations. Accessible via mobile devices, the system enables real-time decision-making anytime and anywhere. Overall, this DSS enhances operational efficiency and business performance by offering a structured and efficient stock management solution that supports increased profitability.

Keywords: Decision Support System, TOPSIS, Mobile Application, Store Management, Inventory Control