IMPLEMENTATION OF SUGENO'S FUZZY METHOD TO DETERMINE THE ELIGIBILITY OF BORROWERS IN COOPERATIVES (Case Study: KOSPIN PURNAMA)

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ABSTRACT

The rapid development of computer technology provides convenience for a business field in making a decision. The Purnama Savings and Loans Cooperative (KOSPIN Purnama) is a business entity engaged in the savings and loan sector, which already has procedures for handling loan transactions. The problem that occurs with the implementation of this procedure is when the number of borrowers is quite large, while the amount of available funds is limited, so that the credit officer or committee is quite overwhelmed to determine the appropriateness of the borrower. To help overcome this problem, the researcher implemented the use of a decision support system to determine the eligibility of borrowers using the Fuzzy Sugeno method at KOSPIN Purnama. The customer data used are 40 people with 5 variables, namely income, loan principal, term, length of membership, and remaining loan. There are 243 rule data in the testing process with the decision results in the form of being eligible or not eligible to receive a loan based on the results of the crisp output value or the final value of the Sugeno method in the defuzzification section. The results of the decisions obtained are 39 eligible customers and 1 customer is not eligible to receive a loan, this has been able to assist cooperatives in determining borrower eligibility decisions. However, if there is a reduction in the acceptance of the borrower's eligibility, it can be determined based on the higher crisp output value which is prioritized in KOSPIN Purnama.

***Keywords**: Cooperative, Fuzzy Sugeno, Borrower, Decision Support System*