

DECISION SUPPORT SYSTEM FOR DETERMINING THE PRODUCTION OF KALIS DONUTS USING THE FUZZY TSUKAMOTO METHOD

(CASE STUDY: PT. KALIS DAMAI SEJAHTERA)

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ABSTRACT

PT. Kalis Damai Sejahtera is a private company engaged in the production and sale of food, especially donuts. So far, the level of demand has fluctuated from customers and coffee shops that have worked together so that in this case the company has difficulty determining the number of donuts to be produced. This study raises a case that is determining the amount of production to facilitate work, in this case based on the Fuzzy Tsukamoto Method a model of a system that is capable of estimating and providing recommendations for the amount of production that is applied in a decision support system (DSS) will be produced. Tsukamoto's Fuzzy method in determining the amount of production is based on three variables which are demand, supply and production. The demand variable consists of three fuzzy sets which are, (1) Down; (2) Fixed; (3) Up. The inventory variable consists of three fuzzy sets which are, (1) Little; (2) Moderate; (3) A lot. Meanwhile, the production variables consist of three fuzzy sets which are, (1) Reduced; (2) Fixed; (3) Increase. By combining all these fuzzy sets, nine fuzzy rules are obtained, which are then used in the inference stage. At the inference stage, the antecedent membership value (α) and the estimated production amount (z) of each rule are sought. The amount of goods to be produced (Z) is found using the centralized average defuzzification method. The results of the SPK calculation are not different from the results of manual calculations, this is demonstrated by testing the validity of the DSS and producing an SPK validity level of 100%. Besides having very good performance, this SPK can also run in a very short time. Thus, without reducing the accuracy in calculations, SPK can be used to save time in determining the amount to be produced.

Keywords: Decision Support System, Fuzzy Tsukamoto, Production, PHP, MySQL