IMPLEMENTATION OF PURCHASING MANAGEMENT MODEL FOR MATERIAL COST EFFICIENCY USING MONTE CARLO SIMULATION WITH ADEMPIERE DATABASE

STUDY CASE: LEATHER INDUSTRY DWI JAYA ABADI, TANGGULANGIN, SIDOARJO

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Abstract

In Supply Chain Management, supplier selection in purchasing material is an important decision because wrong decision causes a damage of profit in enterprise. Generally, supplier is selected by considering parameter both qualitative and quantitative.

For UKM (Usaha Kecil Menengah) leather products, material is the biggest part in a main cost of production. Cost efficiency is necessary in the competition with a kind of UKM leather.

DSS for purchasing management in this research used Monte Carlo Method and can be consideration in selecting supplier. Monte Carlo is more flexible and faster in estimating purchasing price, additional cost, and total cost. DSS estimated (in probabilistic way) on each total cost component. Simulation is started by defining problem, variable determination, model building, simulation process, result validation, and decision making.
DSS Model for purchasing management can determine number of supplier for efficiency and give information about some probability in purchasing material related to additional cost, purchasing price, and total cost. DSS model is built being an application integrated to Adempiere database.

Keywords: Decision Support, Purchasing Management, Material total cost, Monte Carlo Simulation