ABSTRACT

Today’s enterprises realizes that to establish an effective and efficient supply chain, they need to develop a performance measurement of Supply Chain Management. This research is addressed to analyze the performance of a conjoined supply chain. A performance measurement system that contains only a single measurement is usually insufficient because it ignores the interactions between important supply chain characteristics, and ignores critical aspects of that characteristics, that are involving key elements which contains resource, output and flexibility measurements. Resource usage, the desired output, and flexibility (how well the system reacts to uncertainty) have been identified as vital components to supply chain success. UD Azam Jaya is a small-scale industry company that producing sandals and shoes whose market is consisting of Asian countries and few European countries. To supports it’s improvement, the company should first analyze the factors that affects it’s supply chain performance and how much the factors is affecting the supply chain performance, hence the development that will be done can be more focused. The problem that arise in this research is how to analyze the supply chain performance to investigate the relationship between the factors affecting the performance with the overall supply chain performance.

Six performance measurement parameters belonging to three supply chain performance measurement classes are used in this research to study the performance effect of various determined variables on conjoined supply chain performance parameters. The classes are: resource measurement containing inventory level and transportation cost measurements, output measurement containing stockout fraction, customer response time and manufacturing lead time measurements, and flexibility measurement containing volume flexibility measurement. This study is accomplished via experimental design simulation modelling that is made to represent the real system conditions. The experiment design will be used is Box-Behnken design for four factors with three levels. Simulation model will be made by using software AweSim 3.0.

The simulation model output will be analyzed by linear regression models, and the results shows the effects of the various variables on overall supply chain performance and by that model suggestions will be made for the company to improve the overall supply chain performance.

Keywords: Box-Behnken, performance supply chain, permodelan simulasi, regresi linier.