

ABSTRACT

Research Basis. 69 percent of stock value (BHT 4,175,663) is impacted by production batch quantities which are unsynchronized with demand quantities. The production batch size has significant impact on overall company costs, since large batch production size requires a high holding cost under a similar demand pattern. Also, the company never determines the effective reordering point in preventing product shortage.

Methodology. This study applies the simulation technique in discovering appropriate batch production size as well as effective production sequence in order to diminish the number of end products. ROP (reordering point) is calculated where demand rate is also generated via simulation.

Contribution. This paper attempts to contribute a better planning of production batch quantity size as well as determining the effective reordering point. The reduction in the number of end products with no reduction in service level is expected from the study.

Scope. The scope of this research is using the real factors which affect the number of end products. Factors such as production lead-time, demand rate, production batch size, and reordering point are observed and recorded. The top five items in sales value are selected in testing for appropriate batch production size and effective ROP.

Findings. This paper applies simulation technique in finding appropriate production batch size as well as effective reordering point. The validation of the data and simulation model are conducted before selecting two cases in which to find proper production batch size. The first case starts at 1,000 units batch production size, and the study manipulates input by increasing the batch size by 1,000 units up to 10,000 units. In the second case, production sequences are set by items 4, 1, 3, 2, and item 5. ROP starts testing by generating random demand via simulation, then ROP for each batch production size is calculated. Applying appropriate batch production size with ROP is conducted before comparing the simulated result with actual data. Evaluation is also done under defined performance indicators.