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THE EFFECT OF DECISION MAKERSâ€™ RISK ATTITUDE ON SERVICE LEVEL CALCULATION
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ABSTRACT

Traditional inventory models, characterizing replenishment strategies to maximize expected total profit or equivalently minimize expected total cost, is appropriate for risk neutral decision makers. However, many decision makers are not risk neutral making their preferences could not be accommodated by using the model. In this research, risk preference is incorporated in inventory model using service level. There has not any formulation to calculate service level yet. Therefore, researcher proposes a model to calculate service level with regard to risk attitude of decision makers.

Stockout cost and utility function of decision makers are simulated to develop service level formulation. Service level of different decision makers is compared using utility function in order to examine how risk attitude can influence the value of service level. Researcher further determines the optimum value of service level and also conducts a model testing to investigate consistency of the analysis and the real condition.

The research shows risk attitudes do influence service level. Decision makers with higher degree of risk aversion need to assign higher service level to achieve same satisfaction. Utility that represents satisfaction level shall be used instead of monetary value so as to achieve optimum service level. A model testing proves the experiment is consistent with the analysis.

Keywords: inventory model, service level, risk attitude, utility, decision analysis