종속 생산공정에 대한 베이지안 선별형 샘플링 검사방식의 경제적 설계

Economic Design of Bayesian Rectifying Sampling Plans for Dependent Production Process

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Abstract

This reaearch studies the design of Bayesian single attribute acceptance sampling plans under dependent production processes. An economic Bayesian model is first constructed using two economic evaluation criteria: Average Lot Inspection Cost (ALIC) and Average Outgoing Quality (AOQ). It then attempts to prove that the mathematical characteristics of the Bayesian model are analogous these of the Non-Bayesian model. A computational study is performed in order to investigate the dependence patterns and the types of prior distributions on the Bayesian model.

The direct analysis of the Bayesian model is quite undertaking and difficult to justify the validity of their functional assumptions. This research applies the simulation optimization to resolve these difficulties embedded in dealing with the model. Two simulation optimization methods, the Pairwise Comparison Stochastic Cutting Plane (PCSCP) method and the Modified Pattern Search (MPS) method, are applied here and their relative performance is also evaluated through a computational study.