Determinaton of Quality Workers to Minimize the Offline Inspection Cost in Garment Industry

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1. 목적

- The purpose of this study is to find out the optimal number of quality inspectors with respect to their skill level to meet target values of offline inspection station.

2. 연구설계/ 방법론/ 접근방법

- In manufacturing industry, quality control is considered as important aspect of quality management system. To achieve good control of quality, inspection activities are very essential at different stages like incoming, online and offline. Offline inspection has been extensively studied in past keeping in view the inspection strategies, inspection locations and optimal inspection interval. The present study investigate the effect of human effect on offline inspection. For this purpose, three skill levels of quality inspectors are assumed on the basis of their inspection error, inspection cost and inspection quantity. The objective is to minimize the inspection cost and error by determining the optimal number of quality inspectors of each skill level.

3. 연구결과

- A mathematical model is presented to measure inspection cost, inspection error and inspection quantity. After defining the objective functions, Goal programming module of QM for windows is sued to determine the optimal number of quality inspectors of each skill level. This optimal numbers of decision variables will achieve all the objectives of offline inspection that includes low inspection cost and inspection error with high inspection quantity. Secondly sensitivity analysis is done to show the effect of objective function on inspection cost and number of quality inspectors.

4. 실험적 시사점

- This study determined the efficient combination of labour force for offline inspection that not only decrease cost but also meet the optimal values of inspection error and inspection target. It will also helpful for effective utilization of manpower in those industries that still rely on human labour.
5. 특성/ 가치
- In previous studies, off line inspection was studied at macro level in manufacturing and supply chain industry, but there is a lack of work on human factors with respect to their effect of total inspection cost. This study investigated the effect of human factors that stimulates inspection cost of single offline station in a garment manufacturing industry.

6. 키워드
- Quality control, offline inspection, inspection cost, inspection error, goal programming

7. 논문형식
- Research Paper( O ), Survey paper( ), Technical or Engineering Notes( ),
  Review( ), Article( ), Case Study( )

8. 주요 참고문헌

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