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A Review on Inspection Cost Minimization by Optimal Number Inspectors in Apparel Manufacturing

Shibbir Ahmad
Mechanical Engineering Department
Dhaka University of Engineering & Technology, Gazipur, Bangladesh
ahmadjerin@gmail.com

Abstract

The apparel manufacturing organization is striving to minimize manufacturing costs, including inspection costs. The main goal of this paper is to reduce inspection costs by utilizing a minimum number of inspectors. In this paper, a mathematical model has been developed which will emphasize the determination of the inspection cost. The inspection cost is related to the standard minute value and the cost per minute. Furthermore, this study has been focused on the resolution of the capacity and skill level of the inspectors. Moreover, a linear program has been developed which can provide the number of inspectors required based on cost and the number of pieces needed to be inspected. The data has been collected from three types of factories: large, medium-sized and low-scale manufacturing units. It has been seen that at least 30%–35% of inspectors are higher than standard. The reason behind that is a lack of awareness and knowledge by the quality manager regarding inspection capacity, skill, and inspection target for the inspector. Large scale companies take an additional 25% of inspectors to stay relaxed. Medium-sized factories used 30% more inspectors to cover the inspection.

Keywords
Inspection cost, mathematical model, linear programming, cost minimization, inspection target, cost per minute, and standard minute value.