

Chapter 11

Appraise the Economic Values of Logistic Handling System under Mixed Information

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ABSTRACT

Logistics activities are globally recognized as a core heart of each industry, as major content of productivity of industries exclusively depend on this. The system being used to manage logistic activities of firms is called as logistic system i.e. JCBs, robots, mono-trucks, trolleys conveyors etc. In recent years, assessments of logistic activities of firms are found as historic topic in the realm of industrial management. Each parameter leads the trait role in relation to materialize the economic values of material handling system. It is observed that in the context of decision making, MCDM problems under concerns of observed data rather than verbal data is resolved with short computation task by exploration of algorithmic techniques. It became indeed imperative to aid the managers from soft computing algorithmic technique for making decision under subjective or objective or subjective cum objective information. The present chapter flaunted an application of Multi Level Multi Criterion Decision Making (MLMCDM) algorithmic technique for appraising the economic values of MHS candidate choices under subjective (linguistic information provided by personnel) or objective or subjective cum objective information. A hypothetical research work is conveyed to end for aiding the firms from a DSS, in order that they could manage the logistic systems of their firms.

AT A GLANCE

This chapter regards the problems in relation to quantifying the economic values of Material Handling System (MHS). This chapter dealt with the fuzzy cum non-fuzzy information embedded with Multi Level Multi Criterion Decision Making (MLMCDM) algorithmic technique for appraising the economic values of MHS candidate alternatives. The proposed chapter objective is to crack the logistic system evaluation problems under mixed information. This chapter has vast scope amongst practitioners, academicians, research scholars, as they can relate shared technique for solving their professional problems. Furthermore, proposed technique can be implemented in order to resolve miscellaneous quandaries of industries (i.e. performance measurement of supply chain management, benchmarking of advanced manufacturing technologies, port selection, shipping logistic route evaluation, layout evaluation, banking sector evaluation, hotel election, etc.) This chapter displays a flexible decision support system for quantifying the economic values of MHS candidate alternatives.

INTRODUCTION

In today's emerging technology, MHS (Material Handling System) has been determined as boon for traditional and advanced manufacturing firms. MHS leads a significant function to complete the production tasks under scheduled time. MHS is found active to perform repetitious, thorny as well as precarious production tasks with great accuracy. The material handling system transfers the materials such as stuffs, parts, and finished goods from one place to another through pre-planned path or layout and enabling parts and material transportation between various stages of processing. It is responsible for:

- Ensuring the right product,
- Location,
- Condition,
- Quantity, and
- Timing of materials delivery.

Material handling systems are those systems, where parts are stacked onto pallets to send to a warehouse for storage, prior to be finally picked and assembled into customer orders for distribution and delivery. Askin and Standridge (1993), articulated that material handling systems are characterized by a high intensity of material flows and storage to dispatch to a prominent place.

Recently, several MHS,

- i.e. Powered trucks,
- Non-powered trucks,
- Dock equipment,
- Truck restraining devices,
- Fixed path conveying,
- Gravity conveyors,
- Horizontal powered conveyors,
- Vertical conveyors,

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