DATA MINING APPROACH FOR MULTI-ITEM INVENTORY REPLENISHMENT MODEL UNDER PURCHASE DEPENDENCY

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ABSTRACT

Traditionally, multi-item inventory replenishment model focus on joint replenishment of inventories at the sales level of a retail store which are treated as derived due to joint demand of items. The main focus of this paper is on the purchase and not demand of items that are to be jointly replenished. Very few studies have been incorporated on the aspect of purchase dependency of items, with knowledge of association rule items can be classified as jointly replenished items or individual replenished items for lowering inventory cost and increasing profitability. Various existing models of inventory replenishment policies have been simulated for a particular purchasing pattern and a new model is proposed for implementation for replenishment of inventory which is more efficient than existing models and can be universally applied. Cost benefit analysis of all the methods employed has been studied and their applicability on the simulated data has been compared for the suitability of method which can best be employed.

Keywords: *Purchase dependency, Association rule, data mining, multi-item inventory, joint replenishment*