LITERATURE SURVEY

Date	19 September 2022
Team ID	PNT2022TMID12477
Project Name	Inventory Management System for Retailers

Paper 1: A Review of Inventory Management System (Varalakshmi G S, Shivaleela S, June 2021)

This inventory system speeds up the process while minimizing manual labour, human error, and manual delays. Sales data can be tracked by this inventory management system in addition to inventories. A web application for Windows that focuses on inventory and sales clearance is the inventory management system. For Windows operating systems, it was developed. There are numerous aspects in the inventory management system. This web programme offers logical capabilities for automatically choosing the best replenishment tactics and assessing ideal inventory levels. Additionally, it is able to compute reorder points automatically, highlight potential stock-outs, and determine stock levels. By reducing delays, this method avoids the possibility of stock-outs of commodities with high demand.

Paper 2: Forecasting intermittent demand for inventory management by retailers (Xin Tian a b , Haoqing Wang a b , Erjiang E c, September 2021)

In order to estimate intermittent demand, this study suggests a Markov-combined method (MCM) that takes into account product history and inventory levels. The prediction procedure is split into two steps by them. The transition probabilities of the four fundamental demand and inventory states are computed in the first stage. The second stage involves choosing the appropriate and relevant prediction method based on the anticipated situation. Additionally, they validate our findings and demonstrate that the MCM forecasts more precisely than the Single Exponential Smoothing (SES), Syntetos-Boylan Approximation (SBA), and Croston (CR) approaches using two sizable datasets from the two largest e-commerce enterprises in China. Due to its ease of computation and generally higher accuracy, the MCM can be used as a substitute approach for anticipating intermittent demand.

Paper 3: Inventory management, managerial competence and financial performance of small businesses. (Laura A. Orobia, Joweria Nakibuuka, Juma Bananuka, Richard Akisimire. 29 May 2020)

Establishing the links between inventory management, managerial skill, and financial performance as well as determining whether inventory management acts as a mediator in the relationship between managerial skill and financial performance are the two main goals of this study. Cross-sectional and correlational study designs were used. 304 Ugandan small companies participated in a questionnaire survey. Analysis of Moments Structures (AMOS) software was used to evaluate hypotheses using a bootstrap analysis technique. According

to the findings, managerial skill and inventory management are highly related to the financial health of small firms. The relationship between managerial skill and financial performance is also partially mediated by inventory management. Additionally, separately testing the indirect effects of inventory management is done rather than just concentrating on the direct effects of managerial competency and inventory control.

Paper 4: Optimal inventory control of obsolete products with price-dependent demand. (Hassan Zamani ,Mohammad Reza Gholamian, November 2020)

The purpose of this study is to create an inventory policy for shops selling products with abrupt obsolescence that maximises profits while taking into account the type of obsolescence's exponential length. The study was conducted using a real-world case study of a tablet PC, where demand is believed to decrease as the price at which it is sold by the store increases. However, when obsolescence occurs, demand drops abruptly to zero. The mathematical model was created using the concepts of inventory management, taking into account the decision factors of order amount and retailer selling price. Sensitivity analyses on crucial model parameters were carried out using real-world data as a numerical example.

Paper 5: Coordinated inventory control and pricing policies for online retailers with perishable products in the presence of social learning
(Mahmood Vahdani, Zeinab Sazvar, June 2022)

This study intends to investigate how social learning affects the coordinated dynamic pricing and inventory control problem for a perishable good. Through social learning, it is envisioned that online merchants using the Expiration Date-Based Pricing (EDBP) policy to sell perishable goods will be able to offset the practice's implied low quality. A mathematical model is created to frame the issue, and its structural characteristics are examined for a two-period lifetime product. In order to gain some managerial insights, numerical analysis is also carried out in a real-world case study. The findings gained demonstrate that the online shop can advertise the EDBP by using a system of user-generated online reviews. Additionally, the online retailer should modify the product pricing and inventory control regulations in accordance with the development of the system in order to effectively leverage it. Finally, by taking into account customers' social learning behaviour in the price and inventory rules, the company's profit and waste avoidance are increased.

PROJECT DESCRIPTION

Retail inventory management is the process of ensuring you carry merchandise that shoppers want, with neither too little nor too much on hand. By managing inventory, retailers meet customer demand without running out of stock or carrying excess supply.

In practice, effective retail inventory management results in lower costs and a better understanding of sales patterns. Retail inventory management tools and methods give retailers more information on which to run their businesses. Applications have been developed to help retailers track and manage stocks related to their own products. The System will ask retailers to create their accounts by providing essential details. Retailers can access their accounts by logging into the application.

Once retailers successfully log in to the application they can update their inventory details, also users will be able to add new stock by submitting essential details related to the stock. They can view details of the current inventory. The System will automatically send an email alert to the retailers if there is no stock found in their accounts. So that they can order new stock.

Technical Architecture :