# TITLE: Inventory Control Using ABC and Min-Max Analysis on Retail Management Information System

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**YEAR:** 2018

Determination of reorder point aims to meet the safety stock. This is a central parameter of inventory control. This study aims to find reorder point based on goods classification and safe stock. This approach is implemented in retail information systems that have been running. The information system has about 15.000 active items with the number of sales transactions around 1.100 per day. The problem in determining the reorder point is the unavailability of the safe stock reference. Lack of safe stock information triggered the ordering goods error. This error causes over stock. It can increase the potential of expired goods. In this study the researcher classifies the goods and determines the amount of safe stock to control the inventory. We used ABC analysis method for goods classification. It divides the group of goods into A, B, C, and D. The amount of safe stock is determined based on the goods sale's history using Min Max Analysis method. Classification result is used to determine the limits on the inventory of allowed items to be ordered. Limitation safety stock amount refers to the limits from the min max method result. While, testing is done by comparing cost before and after implementation of this method.

# TITLE: ABC Analysis: A Qualitative Case Study On Inventory Management In Giant Superstore Taman Connaught, An Outlet Of GCH Retail (Malaysia) SDN. BHD.

**AUTHORS:** Shamani Jayakumaran1, Wong Zi Shan1 and Dazmin Daud1

**YEAR:** 2019

This study aimed to understand the inventory management of Giant Superstore Taman Connaught. The study was qualitative study that explored the ABC analysis efficiency of inventory management in Giant Superstore, Taman Connaught an outlet of GCH Retail (Malaysia) SDN. BHD. ABC analysis was one method to manage the inventory management who good position was arranged according to the category such as A category product was high in value but low in quantity and C category product was low in value and high in quantity. The elements that were selected as significance included the product consumption rate, carrying cost and replenishment product lead time which contributed toward ABC analysis of inventory management efficiency in Giant Superstore. The study indicated dissimilarities in controlling the inventory in Giant superstore. The study found Giant had used POM.net in their inventory management since this software from ABC tool. HR manager needs to recruit quality skilled workers that have proper qualifications and acceptable for particular job duties.

# TITLE: Influence of Technological Advances and Change in Marketing Strategies Using Analytics in Retail Industry

**AUTHORS:** [Jasmine Kaur](https://link.springer.com/article/10.1007/s13198-020-01023-5#auth-Jasmine-Kaur),  [Vernika Arora](https://link.springer.com/article/10.1007/s13198-020-01023-5" \l "auth-Vernika-Arora) & [Shivani Bali](https://link.springer.com/article/10.1007/s13198-020-01023-5" \l "auth-Shivani-Bali)

**YEAR:** 2020

A nexus of technological advances and an increasingly competitive environment of the retail industry has taken the phrase, “Customer is the King” to a new tangent altogether. It has been observed how combination of technologies along with analytical concepts of video analytics, social media analytics, wireless analytics and smart vision systems on marketing concepts like market basket model, value-based customer segmentation, campaign planning, etc. can impact the customer satisfaction and reduce the customer churn rate. An effective amalgamative implementation of these concepts will help enhance customer satisfaction and help the retailers gain an edge in the competitive market environment. The aim of this paper is to understand the technological advancements along with the impact of data analytics in the retail sector and to capture and retain maximum customers by conceptualizing effective merchandising and marketing strategies.

1. **TITLE:** Data Mining Algorithm for Demand Forecasting Analysis on Flash Sales Platform

**AUTHORS: Mingyang Zhang,**1Yixin Wang,1and Zhiguo Wu2

**YEAR:** 2021

With the development of the digital economy, the emerging marketing strategy of the e-commerce flash sales has been changing the traditional purchasing habits of customers. This imposes new decision-making challenges for companies involved in flash sales. It is important for companies to build the accurate product demand forecast analysis focusing on the characteristics of the flash sales and customer behaviors. In this paper, VIPS (Weipinhui, a Chinese e-commerce platform) is taken as a case study with the key focus on how sentiment factors in customer reviews affect product demand in flash sale platforms. The paper adopts two sentiment analysis methods based on emotional dictionaries. The method with a higher evaluation index is adopted to integrate the emotional factors into the autoregressive model for product demand and assessment. The experiments prove that the autoregressive model for integrating the sentiment factors demonstrates better forecasting performances than the models without sentiment factors. The experiments further confirm that when product demand for the previous two weeks and customer review sentiment factors in the previous week are taken into consideration, demand forecast effects are most accurate.

# TITILE: Multiperiod Dynamic Pricing and Inventory Control Decisions For An Omnichannel Bops Retailer With Reference Price Effects

**AUTHORS:** **Yuan Li**

**YEAR:** 2021

This paper utilizes the consumers’ reference price in prospect theory to analyze an omnichannel retailer’s multiperiod pricing and inventory management problem in which consumers can cancel their orders before payment and return the products after payment if the products do not meet their expectation. The omnichannel retailer’s optimal equilibrium pricing and ending inventory level are derived under reference price effects by maximizing the discounted total profit over the infinite planning horizon, where the optimal decisions we discussed under two scenarios: loss neutrality and loss aversion. The analysis shows that the convergence of the pricing and ending inventory level toward their equilibrium is from above or below, depending on the relative location of the initial reference price with respect to the unique equilibrium price. Moreover, a set of sensitivity analyses is discussed to characterize the impacts of system parameters on the optimal decisions. This research fills the gap of behavioral operation in the field of omnichannel joint pricing and inventory management.

# TITLE: Integrated Vendor-Managed Time Efficient Application to Production of Inventory Systems

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**YEAR:** 2021

This paper establishes a solution for the management of the inventory products concerning time and cost for the efficient delivery of the products into the competitive market with the inventory management rules and policies where the stock deteriorates with time and recovery process is unreliable. It has focused on the demand and supply chain of the goods taking minimum time into the consideration for maximizing the profit throughout the cycle of delivering the products. It establishes a user interface software that maintains all of the records of buying and procuring the products from the stock. It emphasizes the problem related to the integrated transportation of an inventory. It has focused to manage the distribution network at minimal cost and time and optimization techniques have been performed for the maintenance work of the software and system. Both hardware and software interface has been designed It has been designed in such a way that it becomes familiar with both users and admin in a short span of time and easy to use conveniently. Different software requirements tools and engineering has been performed to make the software efficient for both user and admin. A feasibility study and requirement analysis have been carried out to validate the software requirement with time.

# TITLE: Predictive Analysis of End to End Inventory Management System for Perishable Goods

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**YEAR:** 2022

Perishable items are the ones that quickly become spoiled or unsafe for consumption and usage. They are the core of supply chain management due to the limited shelf-life. There are many forms of perishable items viz fresh food products like fruits and vegetables, dairy, poultry, frozen or processed foods, commodities like cosmetics, health care products like medicines, and oxygen and lifesaving items like blood. The paper addresses issues of the order management system in the estimation of the demands of the essential perishable items based on its fluctuating demands. The prevalent work was not able to correctly estimate the demands of the items labeled as essential goods. This article describes the identification of the most relevant features to estimate the replenishment policies. The work carried out contemplates the feature importance, exceptionally taking into account the effect of calamities or celebrations and festivities. The novelty of the work lies in comparing the complex two-step models using linear programming and reinforcement learning. The proposed model with simple machine learning algorithms is seen more effective for small scale businesses. The devised model focuses on accurately predicting the order estimate of perishable product under dynamically impacting factors in the supply chain management.