Literature Survey

1. Analysis of Different Inventory Control Techniques: A Case Study in a Retail Shop

S. K. Biswas, C. L. Karmaker*, Ariful Islam*, Nazmul Hossain*, Shamim Ahmed* *Department of Industrial and Production Engineering, Jessore University of Science and Technology, Jessore, Bangladesh.- July 2017*

ABSTRACT:

In Bangladesh, the retail shops generally face two types of inventory related problems which are either stock-out or overstock. As a result, most of the shops fail to maintain their product availability with lowest possible inventory cost. Through proper inventory control techniques, probability of stock-out as well as overstock situations in the retail shops can be minimised. The present paper is a case study of different inventory control techniques for efficient inventory management system of a retail shop of Bangladesh.

METHODOLOGY USED:

This paper is a case study of four different inventory control techniques for efficient inventory management system of a retail shop of Bangladesh. They are:

- ABC Analysis
- HML Analysis
- Economic Order Quantity
- Safety Stocks

KEYWORDS:

- Inventory control
- Profit
- Stock Out
- Overstock
- Retail Shop

2. Inventory inaccuracy in retail store due to theft: An analysis of the benefits of RFID

EM Lyon Business School, 23 Avenue Guy de Collongue, 69134 Ecully, France
Laboratoire Génie Industriel, Ecole Centrale Paris, Grande Voie des Vignes, 92295 Chatenay Malabry, France - March 2009

ABSTRACT:

We consider a finite-horizon, single-stage, single-product periodic review store inventory in which inventory records are inaccurate. We assume that inventory inaccuracies are introduced by theft type errors that arise within the store.

METHODOLOGY USED:

We propose a comparison between three approaches based on which the inventory system can be managed in presence of theft errors:

- we assume that the inventory manager ignores errors occurring in the store.
- we focus on the benefit that can be achieved through a better knowledge of errors
- we focus on the contribution of a perfect RFID technology that enables to improve the system.

KEYWORDS:

- Periodic review inventory

- Inventory record inaccuracy
- Theft
- RFID

3. **Demand uncertainity and inventory turnover performance: An empirical analysis of the US retail industry**

Gülşah Hançerlioğulları (Department of Industrial Engineering, Istanbul Technical University, Istanbul, Turkey)Alper Şen (Department of Industrial Engineering, Bilkent University, Ankara, Turkey)Esra Ağca Aktunç (Department of Industrial Engineering, Kadir Has University, Istanbul, Turkey) - 4 July 2016

ABSTRACT:
The purpose of this paper is to investigate the impact of demand uncertainty on inventory turnover performance through empirical modeling. In particular the authors use the inaccuracy of quarterly sales forecasts as a proxy for demand uncertainty and study its impact on firm-level inventory turnover ratios.

METHODOLOGY USED:
The authors use regression analysis to study the effect of various measures on inventory performance. The authors use a sample financial data for 304 publicly listed US retail firms for the 25-year period from 1985 to 2009.

KEYWORDS:
- Operational Performance
- Inventory Management
- Retail Industry

4. **Estimating the stockout-based demand spillover effect in a fashion retail setting**

Songtao Li, Lauren Xiaoyuan Lu, Susan Feng Lu, Simin Huang

https://doi.org/10.1287/msom.2022.1135 - 19 August 2022

ABSTRACT:
In brick-and-mortar fashion retail stores, inventory stockouts are frequent. When a specific size of a fashion product is out of stock, the unmet demand might not be completely lost because of spillovers to adjacent sizes of the same style or to other styles.To fill this void in the literature, we empirically estimate the stockout-based demand spillover effect in a fashion retail setting.

METHODOLOGY USED:
- We empirically quantify the stockout-based cross-size demand spillover effect and its impact on lost sales in a brick-and-mortar fashion retail setting.
- Our simulation analysis shows that incorporating the cross-size demand spillover effect into the sportswear retail chain's proactive transshipment decision can substantially reduce its transshipment cost and improve its profitability.

KEYWORDS:
- Stockout based demand spillover effect

5. **Store segmentation using Rule-Based Purchasing behavior analysis.**

Emrah Bilgic, Ozgur Cakir, Mehmed Kantardzic, Yanquing Duan & Guanming Cao

https://doi.org/10.1080/09593969.2021.1915847 - 29 April 2021

ABSTRACT:

Retailers are facing challenges in making sense of the significant amount of data available for a better understanding of their customers. While retail analytics plays an increasingly important role in successful retailing management, comprehensive store segmentation based on Data Mining-based Retail Analytics is still an under-researched area.

METHODOLOGY:

- Segment the stores based on 'purchasing behaviour of customers'.
- Applying data mining techniques - examine purchasing behaviour and
- Identify store segments.
- Manage store clusters.

KEYWORDS:

- Data Mining
- purchasing behaviour
- store segmentation
- business analytics
- data driven decision making

6. **Inventory Management for Automated Convinience Stores in Brazil**

ABSTRACT:

Convenience stores play a crucial role, as people look for more convenience with modern lifestyles. Most of these stores are managed by people without experience or formal education in business management. A challenging problem for small retailers is inventory management.

METHODOLOGY:

- We use unsupervised Machine Learning techniques like k-means clustering and principal component analysis to identify patterns and segment stores and items.
- The best policy for the Onii store's reality is the Periodic Review model, with different period parameters (R) for each combination.
- Sensitivity analysis was conducted to determine the impacts of each parameter used in the model, such as ordering cost, holding cost, and inventory cost.

KEYWORDS:

- Inventory Management
- Retail Operations

7. **A comparative Analysis of weekly sales forecasting using regression techniques**

ABSTRACT:

In today’s competitive market, every retail store needs to run its business successfully. Therefore they need to know the future demand of customers ahead. So that the retail store can have sufficient stock of their demanding product in their inventory. However, estimating future sales demand is an important and

challenging task for any retailer store.

METHODOLOGY:

- regression techniques to tackle such type of challenging task.
- we investigate, evaluate, explore the merits and demerits of different regression-based forecasting techniques to predict weekly sales of a store.
- These forecasting techniques include linear, lasso, ridge, random forest, decision tree, extra tree, and XGBoost regression.
- Measured through the performance metrics such as MAE, Weighted MAE (WMAE), and RMSE on a publicly available dataset.

KEYWORDS:

- Regression
- KNN
- XGBoost
- Sales Forecasting
- Decision Tree
- Extra Tree
- Accuracy

8. **Measuring inventory turnover efficiency using stochastic frontier analysis: building materials and hardware retail chains in Norway**

Jorgen Breivik, Nils Magne Larsen, Sverre Braathen Thyholdt and Oystein Myrland

https://doi.org/10.1080/23302674.2021.1964635 - 26 August 2021

ABSTRACT:

Operational efficiency in the retail business is vital in order to be profitable in a competitive environment. This paper investigates how environmental factors, firm size and time trends are linked to inventory performance. We use location data, demographic data and 16 years of financial accounting data from small and medium-sized home improvement retailers to explain inventory performance at a chain and a regional level.

METHODOLOGY:

- We choose to use a stochastic frontier model since inventory turnover is linked to efficiency and productivity.
- suggests that retail managers should consider including environmental factors as part of their analysis when using inventory turnover as an efficiency benchmark.

KEYWORDS:

- Inventory turnover
- Logistics management
- efficiency
- market conditions
- retail

9. **Bow tie analysis for prioritizing actions to manage the risks of out of stock on shelves in the retail.**

Carlos Heitor de Oliveira Barros, Inêz Manuele dos Santos, Marcelo Hazin Alencar, Luciana Hazin Alencar - 16 July 2021

ABSTRACT:

The purpose of this paper is to present a methodology to structure the problem of retail out of stock (OOS). This methodology allows investigating risk factors and barriers related to the main causes and consequences that lead to OOS occurring.

METHODOLOGY:

- The proposed methodology to structure the OOS problem is based on the bow- ie tool, which allows better visualisation, understanding and analysis of a complete OOS scenario.
- This proposal comprises exploring the main causes and consequences of OOS, the barriers to prevention and mitigation, the escalation factors to control undesirable events and to define actions to eliminate or mitigate the OSS risk.

KEYWORDS:

- Bow-tie methodology
- Retail out of stock
- Preventive barriers
- Protective barriers
- OOS causes
- OOS consequences

10. **Continuous replenishment and stock controlling on supply chain performance of retail chain store in Nairobi County, Kenya**

Hussein Mohamed Mohamud, Dr. Peter Mwangi, PhD. - 22 October 2021

ABSTRACT:

The objectives are to examine influence of continuous replenishment on supply chain performance of supermarkets in Nairobi City County and to establish extent stock controlling influence supply chain performance of supermarkets in Nairobi City County.

METHODOLOGY:

- The study used descriptive survey research design as it allows adoption of multifaceted approaches to collection of data, data processing and data analysis.
- The research design also allows for a multifaceted approach to data analysis.
- The research design was chosen because it seeks to collect information that depicts existing phenomena by asking questions relating to individual perceptions and attitudes.

KEYWORDS:

- Continuous replenishments
- Stock Controlling
- Supply chain performance