“A LITERATURE SURVEY ON MODELS OF INVENTORY MANAGEMENT SYSTEM FOR RETAILERS”

Surveyed By,

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CASE STUDY I

TITLE: A literature review and current trends

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ABSTRACT: In recent years, the correct management of inventories has become a fundamental pillar for achieving success in enterprises. Unfortunately, studies suggesting the investment and adoption of advanced inventory management and control systems are not easy to find. In this context, this article aims to analyze and present an extensive literature concerning inventory management, containing multiple definitions and fundamental concepts for the retail sector. A systematic literature review was carried out to determine the main trends and indicators of inventory management in Small and Medium-sized Enterprises (SMEs). This research covers five years, between 2015 and 2019, focusing specifically on the retail sector. The primary outcomes of this study are the leading inventory management systems and models, the Key Performance Indicators (KPIs) for their correct management, and the benefits and challenges for choosing or adopting an efficient inventory control and management system. Findings indicate that SMEs do not invest resources in sophisticated systems; instead, a simple Enterprise Resource Planning (ERP) system or even programs such as Excel or manual inventories are mainly used.

CASE STUDY II

TITLE: Economic order quantity models

REFERENCES: Business Systems and Economics

YEAR: 2015

ABSTRACT: For the fixed order size inventory models, the economic order quantity (EOQ) model is most well-known. The basic EOQ model is a formula for determining the optimal order size that minimizes the sum of carrying costs and ordering costs. The model is derived under a set of restrictive assumptions, as follows:

- Demand is known with certainty and is constant over time.
- No shortages are allowed.
- Lead time of orders is constant.
- The order quantity is received all at once.

The EOQ model was presented originally by Ford W. Harris, in a paper published in 1913 in Factory, The Magazine of Management (Harris, 1913). Many researches were made on the base of this model. However, the coefficients of the model may be fuzzy. One of the first who applied fuzzy theory was K. S. Park, who proposed a single product inventory model with fuzzy parameters on the base of the Harrison model (Park, 1987). Chen and Wang (1996), Roy and Maiti (1997), Yao et al. (2000) and Chang (2004) have extended the well-known EOQ inventory model to fuzzy versions.

CASE STUDY III

TITLE: Economic production quantity models

AUTHOR: E.W. Taft

ABSTRACT: Economic Production Quantity model (EPQ) determines the quantity a company or retailer should order to minimize the total inventory costs by balancing the inventory holding cost and average fixed ordering cost. The EPQ model was developed by E.W. Taft in 1918 (Taft, 1918). This method is an extension of the EOQ model. The classical economic production quantity model (EPQ) has been widely used. Numerous research efforts have been undertaken to extend the basic EPQ model by releasing various assumptions or adding new so that the model conforms more closely to real-world situations. Recently, re-work activities have attracted considerable attention because of the reduction of the natural resources and the rise in the cost of raw material.

CASE STUDY IV

TITLE: Joint economic lot sizing models

AUTHOR: Ouyang et al.

YEAR: 2006

ABSTRACT: Introduced defective items into the JELS model. The study applies various modelling methods to manage the defective rate in an integrated vendor-buyer inventory model. Three cases are investigated: crisp defective rate, triangular fuzzy defective rate and statistic fuzzy defective rate. In these two fuzzy cases, the signed distance procedure is applied to estimate the joint total expected cost in a fuzzy sense. Yang presented a stylized model to find the optimal strategy for integrated vendor-buyer inventory model with fuzzy annual demand and fuzzy adjustable production rate (Yang, 2007). For the model, Signed distance's ranking method for fuzzy number is employed to find the estimation of the joint total expected annual cost in the fuzzy sense and the corresponding order quantity of the buyer derived accordingly.

CASE STUDY V

AUTHOR: Soni

YEAR: 2012

ABSTRACT: Made an in depth study of practices followed in regard to inventory management in the engineering goods industry in Punjab. The analysis used a sample of 11 companies for a period five years, that is, 2004–2009 and was done using panel data set. The adequate and timely flow of inventory determines the success of an industry. She concluded that size of inventory enhanced marginally over the period as compared to a hike in current assets and net working capital. Inventories constituted half of the working capital which was due to overstocking of inventory as a result of low inventory turnover especially for finished goods and raw materials. Rise in sales and favourable market conditions lead to a rise in inventory levels. It was also inferred that sales increased more as compared to inventory.

CASE STUDY VI

AUTHOR: Madishetti and Kibona

YEAR: 2013

ABSTRACT: Found that a well designed and executed inventory management contributes positively to a small or medium-sized enterprises (SMEs) profitability. They studied the association between inventory conversion period and profitability and the impact of inventory management on SMEs profitability. They took a sample of 26 Tanzanian SMEs, and used the data from financial statements for the period 2006–2011. Regression analysis was adopted to determine the impact of inventory conversion period over gross operating profit. The results cleared out that significant negative linear relationship occurred between inventory conversion period and profitability.

CASE STUDY VII

AUTHOR: Nyabwanga and Ojera

YEAR: 2012

AUTHOR: They Highlighted the association between inventory management practices and business performance of smallscale enterprises (SSEs), in Kisii Municipality, Kisii County, Kenya. They used a cross-sectional survey study based on a small sample size of 79 SSEs. The study inferred that inventory comprised the maximum portion of working capital, and improper management of working capital was one of the major reasons of SSE failures. The empirical results disclosed that a positive significant relationship existed between business performance and inventory management practices with inventory budgeting having the maximum influence on business performance ensued by shelf-space management. The study suggested that by following effective inventory management practices business performance can be enhanced.

CASE STUDY VIII

AUTHOR: Eneje et al

YEAR: 2012

ABSTRACT: Investigated the effects of raw materials inventory management on the profitability of brewery firms in Nigeria using a cross sectional data from 1989 to 2008 which was gathered for the analysis from the annual reports of the sampled brewery firms. Measures of profitability were examined and related to proxies for raw materials inventory management by brewers. The Ordinary Least Squares (OLS) stated in the form of a multiple regression model was applied in the analysis. The study revealed that the local variable raw materials inventory management designed to capture the effect of efficient management of raw material inventory by a company on its profitability is significantly strong and positive and influences the profitability of the brewery firms in Nigeria. They concluded that efficient management of raw material inventory is a major factor to be contained with by Nigerian brewers in enhancing or boosting their profitability.