

Literature Survey

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| S.No | TITLE | PROPOSED WORK | Inventory Control Techniques | TECHNOLOGY | ADVANTAGES/ DISADVANTAGES |
|------|---|---|--|----------------|--|
| 1 | Analysis of Different Inventory Control Techniques: A Case Study in a Retail Shop | <p>The inventory of materials constitutes the most significant part of current assets and working capital in any organisation. A small saving in the inventory will mirror a crucial edge in benefit of the organisation. 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. The sole purpose of the study is to provide a guideline for inventory managers that will help them to ensure product availability at right quantity as and when required. Relevant data were collected from a renowned retail shop, namely, Pran RFL group, Bangladesh. This real case demonstration will certainly help the future researchers as well as the Bangladeshi manufacturers to maintain proper control & management of inventories. Keywords: Inventory Control, Profit, Stock-out, Overstock, Retail Shop</p> | <ul style="list-style-type: none"> • ABC Analysis • HML Analysis • Economic Order Quantity (EOQ) • Safety Stock (SS) | Data Analytics | <p>ADVANTAGES</p> <ul style="list-style-type: none"> • Various types of inventory control techniques in the literature, in this paper only four types of inventory control techniques such as ABC analysis, EOQ, safety stock, and HML analysis have been analysed. <p>DISADVANTAGES</p> <ul style="list-style-type: none"> • As stated throughout this study, retail manager has been continually challenged by the two conflicting objectives of inventory management to ensure maximum items availability while keeping inventory cost low. The retail shop does not follow any inventory control techniques. |

| S.No | TITLE | PROPOSED WORK | Inventory Control Techniques | TECHNOLOGY | LIMITATIONS |
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| 2 | Selective Inventory Control Using ABC And FSN Analysis in Retail Sector | Inventory is the most important assets of any Enterprises whether it is micro, small or medium. The efficient use of selective inventory control model will result high flexibility and control over surplus and deadstock inventory. The aim of this study is to identify various factors that affect the enterprises performance in urban region. The study is conducted in A2Z Pharmacy store in an urban region. Data that has been collected is of primary type and has been collected from the database of the pharmacy store. ABC and FSN analysis methods are used on 190 types of medicine. ABC-FSN matrix is prepared using ABC and FSN combined analysis. On the basis of combined analysis and priority matrix there are three sub-categories in which some sub-category element has to be eliminated by anyhow and some sub-category element has to be maintained with minimum stocks (i.e. safety stock) and some sub-category elements has to be maximised or maintained. Keywords: Inventory management, Selective control model, Pharmacy, Retail sector, ABC analysis, FSN analysis, ABS - FSN matrix, Urban region. | <ul style="list-style-type: none"> • FSN Analysis • ABC analysis • ABC-FSN (Combined) Matrix Analysis | Data Analytics | <ul style="list-style-type: none"> • The collected data has no procurement date, due to which average stay days (average inventory holding days) cannot be calculated. Therefore, FSN analysis is done on the basis of consumption rate only. • In addition to this research paper analysis HML analysis can also be done followed by combined analysis of ABC-FSN-HML using three-dimensional multi-unit selective inventory control techniques, which can be beneficial for inventory budget optimisation. |

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| 3 | The Application of Monte Carlo Simulation for Inventory Management: a Case Study of a Retail Store | <p>This research aimed to find economic order quantity and reorder point of the inventory in a retail store under the uncertainty of lead time and demand. From the past, the store manager purchased a large amount of inventory to fulfill the customer demand without the appropriate techniques, which led to over-inventory. The store had lost more than THB 1 Million per year from the excess inventory. The Monte Carlo Simulation was applied in this research in order to determine the purchase order policy with the selected best sales goods. The inventory goods was classified by using ABC analysis. This research was only focus on the class A goods because they affected almost all of the inventory cost. As a result, 10 best sales goods in class A were selected. Then collecting the data of the sales for those goods for 12 months. After simulated the data for all selected goods and gained the optimal order quantity by using Monte Carlo Simulation, it was found that the new economic order quantity and reorder point would save the inventory cost, which was currently incurred from THB 1,462,281.77 to THB 371,142.73 per year or 74.62% of reduction. In addition, the inventory would reduce from 46,166,784 units to 2,638,808 units per year or 94.28% of reduction. Keywords - Monte Carlo Simulation, Inventory Management, Retail Store</p> | <ul style="list-style-type: none">• ABC Classification• Economic Order Quantity (EOQ)• Reorder point (ROP) | Data Analytics | <p>ADVANTAGES</p> <ul style="list-style-type: none">• To decrease the unnecessary order, ABC Classification is an approach which has been applied to analyze the importance of each item of goods and prioritize them.• Easy to implement. <p>DISADVANTAGES</p> <ul style="list-style-type: none">• Time consuming as there is a need to generate large number of sampling to get the desired output |

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| 4 | A Study of Inventory Management System of Linamar India Pvt. Ltd, Pune | <p>The aim of the study is to examine the inventory management process. The significance of this research is based on the benefits that can be obtained by identifying the issues of inventory control. The methodology used are unstructured interviews, on-site study, and annual report analysis. Inventory management is an important area of manufacturing industry. If company fails to manage inventory, they will face failure. It is a challenge for the company to maintain fair inventory. There are various inventory management techniques available for maintaining fair inventory level in the company. The basic objective of this paper is to study about inventory management techniques used in Linamar India Pvt. Ltd. and find out some measures for improvement on inventory management process of the concerned company. The present system of inventory management of the company is good. For improvement of the present inventory management system, company should adopt other inventory management techniques.</p> | <ul style="list-style-type: none">• EOQ• ABC analysis• VED analysis• Safety stock level | Data Analytics | <p>ADVANTAGES</p> <ul style="list-style-type: none">• It helps the organization in smooth running of its activities and in reducing the cost of managing the inventory• Inventory turnover ratio is also showing an increasing trend which indicates that sales of the organization is increasing every year. |

| S.No | TITLE | PROPOSED WORK | Analysis Techniques | TECHNOLOGY | ADVANTAGES/ DISADVANTAGES |
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| 5 | Inventory management for retail companies: A literature review and current trends | <p>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). 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.</p> | <ul style="list-style-type: none">• Metadata Analysis• Content Analysis | Data Analytics | It is important to mention that all retailers may not be able to employ these technologies due to their high cost of implementation and maintenance. |

| S.No | TITLE | PROPOSED WORK | COMPONENTS OF RETAIL ANALYTICS | TECHNOLOGY | ADVANTAGES |
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| 6 | Retail Analytics: Driving Success in Retail Industry with Business Analytics | As retail market becomes extensively competitive, the ability to optimize on serving business processes while satisfying customer expectations has never been more important. Therefore, managing and channelizing data to work towards customer delight as well as generate healthy profits is crucial to survive prosperously. In the case of big retail players internationally as well as in India, data or rather big data analytics is now being applied at every stage of the retail process - tracking emerging popular products, forecasting sales and future demand through predictive simulation, optimising product placements and offers via customer heat-mapping and many more. This article is the outcome of a descriptive research on the past, present and future of retail industry and the application of business analytics in shaping appropriate marketing strategies. | <ul style="list-style-type: none"> • Predictive modelling • Big data and hybrid architectures • Cloud analytics • Advanced visualizations • Self-service analytics • Real-time in-memory | Data Analytics | Improved performance, better risk management, and the ability to unearth insights that would otherwise remain hidden, are the benefits organisations reap through utilization of big data management. |

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