

Retail Store Stock Inventory Analytics

Literature Survey

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Objectives

- ❖ Retail inventory management is the process of ensuring you carry products 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.
- ❖ Inventory management is vital for retailers because the practice helps them increase profits.
- ❖ They are more likely to have enough inventory to capture every possible sale while avoiding overstock because Too much inventory means working capital costs, operational costs, and a complex operation.
- ❖ Based on the inventory management analysis we can manage how much inventory is required for selling the product based on which they can calculate the profit & losses.

SOCIAL IMPACT

- Customers will get more varieties, High availability of the products .

Business Model/Impact

- Improve the decision-making process oriented at reducing costs and increasing revenues.
- Retailers are able to understand the deepest customer needs and adjust their offering to meet shoppers' demands.

LITERATURE SURVEY

S.NO	AUTHOR	TITLE	CONTENT	YEAR
1	Hien Vu	Inventory management in retail industry - Application of big data analytics	The retail industry is becoming rigorously competitive and narrowly profitable that retailers find themselves in a dilemma of neither excessive in- stock nor depleted out-of- stock is negotiable. The report finds the prospects of integrating BDA in the conventional inventory management techniques and promoting the viability and appropriateness of these models in the big-data era.	2018
2	Mirco Sturari	Retail surveying and inventory using visual and textual analysis	The manpower cost for surveying and monitoring the shelves in retail stores are high, because of which these activities are not repeated frequently causing reduced customer satisfaction and loss of revenue. Further, the accuracy of data collected may be improved by avoiding human related	2017

3	Ariful Islam	Analysis of Different Inventory Control Techniques	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.	2019
4	EUN KYONG SHIN AND ARASH SHABAN- NEJAD	Urban Decay and Pediatric Asthma Prevalence in Memphis, Tennessee: Urban Data Integration for Efficient Population Health Surveillance	To further improve public health decision making, the health issue should be approached with a more holistic view with taking into account environmental, residential, and social conditions. Integrating multiple data sources helps us not only discover the hidden links between quality of housing and childhood asthma in an urban community but also provide more efficient health surveillance guidelines to identify the population at risk.	2018

5	Jorge Andres Espinoza Aguirre	Inventory record inaccuracy and store-level performance	Inventory management is one of the important business processes which ensure that the supply of raw materials and finished goods remain continuous throughout the business operations. It could be during manufacturing or production to ensure smooth operations and organization as it relates to purchases, sales and logistic activities [1]. Inventory management systems has the objective of ensuring smooth running of the production process, reduce the ordering cost of inventory, take advantage of quantity discount, and avoid opportunity loss on sales	2017
6	ISRAA MOHAMED	Machine Learning Algorithms for COPD Patients Readmission Prediction: A Data Analytics Approach	In this study, we aim at predicting the readmission of COPD (Chronic Obstructive Pulmonary Disease) patients through the deployment of machine learning algorithms. Area Under Curve (AUC) and ACCuracy (ACC) were considered as the main criteria for evaluating models' prediction power in each time frame. Then, the importance of the variables for each outcome was explicitly identified, and defined important variables have then been differentiated. Our study could achieve the highest accuracy in predicting readmission with %91 ACC.	2015

Tools Used

- ☐ *Cognos Analytics*
- ☐ *Tableau*
- ☐ *Data Analysis with Python*
- ☐ *Power-BI*

Existing Solutions

- ☐ [inventory-management-software](#)
- ☐ [zoho inventory](#)

THE PURPOSES OF INVENTORIES ARE:

- To know how many units to order.
- To allow flexibility in retail scheduling.
- To maintain independence of operations.
- To meet variation in product demand.
- To provide a safeguard for variation in goods delivery time.
- To take advantage of economic purchase order size.
- When to order/inform to senior retail executives that goods in stock will complete soon.

Causes of Poor Inventory Control:

There are certain factors, which lead to poor inventory control in retail stores. These are as follows:

- Bulk buying due to avail discount or to cut down buying cost can lead to huge inventory storage.
- Over buying inventory due to wrong forecasting.
- When inventory acquisition is more as compare to consumption/sale.
- Over stocking due to some reasons sometimes result in poor customer service.
- Cancellation of delivery orders and unreliable and irregular supplies may lead to bulk inventory storage.

Things that we focus and work in this project

- Ensuring continuity of selling activities by proper and timely supply of goods.
- Hedge against price increases.
- Meet unexpected/ variations in customers demand.
- Reducing inventory holding cost by using appropriate inventory management technique.
- Safeguard against price changes and inflation.
- Smooth-out variations in operation performances.
- Take advantage of quantity/price discounts.
- Transportation saving.