INVENTORY MANAGEMENT SYSTEM FOR RETAILERS
LITERATURE SURVEY

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INTRODUCTION:

The emergence of the internet has been the greatest technological advancement after the industrial age. From the recent studies on internet penetration and usage in India it has been concluded that many Indians are using the internet to pay bills, purchase products online apart from regular surfing, checking e-mail and socialising on multiple social networks. The number is expected to grow from time as the internet becomes more pervasive and secure. The rise of the internet has created opportunities for entrepreneurs, and has changed the business landscape of e-commerce.

Managing inventory to create higher inventory turnover and just in time delivery practices is one of the most important processes for online retailers. Flexible systems that respond to customer demand and inventory uncertainties are most important in e-commerce.

LITERATURE SURVEY:

S.NO	TITLE	AUTHOR	ABSTRACTION	CITE
1,	**Inventory Management Challenges for B2C E-commerce Retailers**	Harish Patil, Rajiv Divekar	This research was conducted on B2C e-commerce companies or online retailers to study the challenges involved such as demand variations, reverse logistics, seasonal fluctuations, and stockless policy in	Patil, Harish, and Brig Rajiv Divekar. "Inventory management challenges for B2C e-commerce retailers." *Procedia*

			inventory management and the risks such as lost sales, lost customers, low customer satisfaction associated with the same. This study also includes various strategies to mitigate the risk associated with inventory management of online retailers.	*Economics and Finance* 11 (2014): 561-571.
2,	Inventory Management and Its Effects on Customer Satisfaction	Scott Grant Eckert	This study examines inventory management and the role it plays in improving customer satisfaction. It looks at how food companies have been under pressure to streamline their inventory systems, and the consequences of such actions. It also examines how many retailers are trying to implement a "perfect order" system and how suppliers are constantly under pressure to meet the demands of these retailers. Many food companies are, therefore, looking at various inventory management systems as they belief this will have a positive effect on the satisfaction of their customers. The paper also outlines the methodology used in the research and concludes by pointing out the limitations of the research as well as suggestions for further research.	Eckert, Scott Grant. "Inventory management and its effects on customer satisfaction." *Journal of Business and public Policy* 1.3 (2007): 1-13.
3,	Multi-level inventory management decisions with transportation cost consideration	AlirezaMadadia,MaryE. Kurza, JalalAshayeri	In this article we address specific inventory management decisions with transportation cost consideration in a multi-level environment consisting of a	Madadi, Alireza, Mary E. Kurz, and Jalal Ashayeri. "Multi-level inventory management

			supplier–warehouse–retailers. We develop two models – namely, decentralized ordering model and centralized ordering model to investigate the effect of collective ordering by retailers on the total inventory cost of the system. A numerical study shows that the proposed model is robust and generates reasonable cost savings. The models have potential in several multi-level applications such as fresh or frozen food delivery to stores of different supermarkets or the supply of medicine to a number of hospitals from a wholesaler.	decisions with transportation cost consideration." *Transportation Research Part E: Logistics and Transportation Review* 46.5 (2010): 719-734.
4,	Inventory Management of Perishable Goods with Overconfident Retailers	Dragan Pamucar, Dragan Marinkovic and Samarjit Kar	In recent years, many retailers sell their products through not only offline but also online platforms. The sales of perishable goods on e-commerce platforms recorded phenomenal growth in 2020. However, some retailers are overconfident and order more products than the optimal ordering quantity, resulting in great losses due to product decay. In this paper, we apply the newsvendor model to analyze the impacts of overconfident behavior on the retailer's optimal pricing and order quantity decisions and profit. Our model provides the overconfident retailer with a feasible and effective method to adjust optimal ordering and pricing decisions. Through	Zhang, Mingyang, et al. "Inventory Management of Perishable Goods with Overconfident Retailers." *Mathematics* 10.10 (2022): 1716.

			numerical studies, we examine the retailer's optimal decisions under the scenarios of complete rationality, over-estimation, and over-precision.	
5,	**The inventory management system for automobile spare parts in a central warehouse**	S.G. Li , X. Kuo	Because of the complex structure of spare parts supply chain, the conventional approaches, which do not consider the relationships between decision factors globally, cannot achieve the optimal performance. Therefore, this paper aims to develop an enhanced fuzzy neural network (EFNN) based decision support system for managing automobile spares inventory in a central warehouse. In this system, the EFNN is utilized for forecasting the demand for spare parts. However, without considering relevant domain knowledge, traditional neural networks are found to be suffered from the problem of low accuracy of forecasting unseen examples. Therefore, in our EFNN, the following improvement is made: First, it assigns connection weights based on the fuzzy analytic hierarchy process (AHP) method without painstakingly turning them. Second, by generating and refining activation functions according to genetic algorithm, our EFNN can provide comprehensive and accurate activation functions and fit a	Li, S. G., and X. Kuo. "The inventory management system for automobile spare parts in a central warehouse." *Expert Systems with Applications* 34.2 (2008): 1144-1153.

			wider range of nonlinear models.	
6,	**Demand seasonality in retail inventory management**	J.C.F.Ehrenthala, D.Honhonb, T.Van Woensel	We investigate the value of accounting for demand seasonality in inventory control. Our problem is motivated by discussions with retailers who admitted to not taking perceived seasonality patterns into account in their replenishment systems. We consider a single-location, single-item periodic review lost sales inventory problem with seasonal demand in a retail environment. Customer demand has seasonality with a known season length, the lead time is shorter than the review period and orders are placed as multiples of a fixed batch size. The cost structure comprises of a fixed cost per order, a cost per batch, and a unit variable cost to model retail handling costs	Ehrenthal, J. C. F., Dorothée Honhon, and Tom Van Woensel. "Demand seasonality in retail inventory management." *European Journal of Operational Research* 238.2 (2014): 527-539.
7,	**Design of smart inventory management system for construction sector based on IoT and cloud computing**	RajeshBose, Haraprasad Mondal, IndranilSarkar, SandipRoy	Monitoring and managing consumption of raw materials and goods in any manufacturing industry is considered a vital activity to operational sustainability and profitability. Given the current state of global competition, manufacturing industries are almost always on the lookout for an inventory management system that would help curtail costs and reduce time required to supply raw materials and goods to carry out production quickly and efficiently. It is, therefore, of	Bose, R., Mondal, H., Sarkar, I., & Roy, S. (2022). Design of smart inventory management system for construction sector based on IoT and cloud computing. *e-Prime-Advances in Electrical Engineering, Electronics and Energy*, *2*, 100051.

			paramount importance that continuous improvements are carried out on existing inventory management designs to stay relevant.	
8,	A decision support system for improving performance of inventory management in a supply chain network	Hooshang, M. Beheshti	This article seeks to present a decision support model for improving supply chain performance. The model aims to provide a holistic view of the supply chain as an integrated system by analyzing inventory options to facilitate the decision‐making process by business partners in the system.	Beheshti, Hooshang M. "A decision support system for improving performance of inventory management in a supply chain network." *International Journal of Productivity and Performance Management* (2010).
9,	**Stock replenishment policies for a vendor-managed inventory in a retailing system**	Ata AllahTaleizadeh, ImanShokr	Using Vendor Managed Inventory (VMI), the vendor determines the replenishment decisions at the location of buyers (retailers). This strategy is used primarily for handling demand fluctuations stemming from the Bullwhip effect, leading the system to prevent from holding excessive inventory that result in a reduction in the overall cost of the supply chain. The main advantages of VMI for vendors are higher levels of accessibility to inventory information and more direct contact with the customers.	Taleizadeh, Ata Allah, et al. "Stock replenishment policies for a vendor-managed inventory in a retailing system." *Journal of Retailing and Consumer Services* 55 (2020): 102137.
10,	Distribution network planning and	Jindi Ji, Yuxin Wang, Haitao Jia and Mingjun	In this paper, we are aimed at discussing problems of distribution network planning	Ji, Jindi, et al. "Distribution network planning and inventory

	inventory management in a multi-retailing supply chain	Shi	and inventory management in a multiple-retailing supply chain. We study the distribution model and inventory management model, integrating both models to analyse the optimal decisions on maximum profit. The main methodology we used is literature study and model formulations. Through the research, we finally present the optimal distribution and inventory decision.	management in a multi-retailing supply chain." *Journal of Physics: Conference Series*. Vol. 1903. No. 1. IOP Publishing, 2021.