

LITERATURE SURVEY

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Project Name	Retail Store Stock Inventory Analytics

Mean Variance Analysis of Fast Fashion Supply Chains With Returns Policy [Author -Jian Li; Tsan-Ming Choi; T. C. Edwin Cheng (2013)]

This paper is motivated by observed industrial practices. We conduct a mean variance (MV) analysis of a fast fashion supply chain with returns policy. Different from the conventional newsvendor type products, fast fashion brands plan to have stock-out because it is a feature of fast fashion and can bring some benefit. Based on the fast fashion features, we build an analytical MV optimization model for a two-echelon fast fashion supply chain to address the following research questions. 1) What are the differences and similarities in the structural properties between the supply chains that carry fast fashion products and conventional newsvendor type products? 2) How do we optimize a fast fashion supply chain with multiple retailers under the MV framework? 3) Can a simple returns policy optimize (and “coordinate”) such a multi retailer supply chain? 4) How do individual retailers' degrees of risk aversion affect the achievability of coordination? 5) Can the above simple contract help coordinate the supply chain under information asymmetry? We propose a novel approach called “negotiated space” in the analysis. We generate several important insights which include an interesting finding that a simple returns policy can be applied to coordinate the fast fashion supply chain even in the presence of multiple retailers.

Development of Inventory Checking System Based on UAV and RFID in Open Storage Yard [Author-Sung Moon Bae; Kwan Hee Han; Chun Nam Cha; Hwa Yong Lee(2018)]

Many companies monitor status of product and detect storing or releasing of stocks using RFID technology. The actual status of inventory, however, is sometimes different from the recorded data due to many reasons. To prevent the mismatch between real world and information system, companies investigate stocks regularly and adjust the status of information system. In open storage yard, manual inventory checking is very hard work and automated system requires much cost. In this paper, we proposed new

approach to investigate open storage yard using unmanned aerial vehicle and RFID. It reduces cost of inventory checking and mismatch of real world and cyber world. We also implemented a prototype system to show the feasibility.

Increasing Supply-Chain Visibility with Rule-Based RFID Data Analysis [Author-Alexander Illic; Thomas Andersen; Florian Michahelles (2019)]

RFID technology tracks the flow of physical items and goods in supply chains to help users detect inefficiencies, such as shipment delays, theft, or inventory problems. An inevitable consequence, however, is that it generates huge numbers of events. To exploit these large amounts of data, the supply chain visualize increases supply-chain visibility by analyzing RFID data, using a mix of automated analysis techniques and human effort. The tool's core concepts include rule-based analysis techniques and a map-based representation interface. With these features, it lets users visualize the supply-chain structure, together with performance metrics, and detect problematic hot spots.

Implementation of Inventory Management System [Author-Srivastava, Keshav and Kumar Choubey, Dilip and Kumar, Dr. Jitendra (2020)]

The entire E-Commerce department stores an abundant amount of data everyday which sometimes results in missing items, improper inventory control and thus loose the track of their database. This problem is not only restricted to them but the customers also plays a huge role in creating this scenario like updating the items in cart, leave the cart with items at any point which results in problems at checkout and often they cancel the orders. There is a dire need of a system which not only stores this fluctuating data but keep it in an effective way. This system keeps a good track of all the information about the dealer, supplier, manufactured goods and raw materials. The present work may help in high and agreed level of customer service. It may lead to opt for flexible capacity and enable us to deal with perks and troughs in demand.

Optimal inventory management for a retail chain with diverse store demands [Author-N Agrawal, SA Smith(2013)]

Item demands at individual retail stores in a chain often differ significantly, due to local economic conditions, cultural and demographic differences and variations in store format. Accounting for these variations appropriately in inventory management can significantly improve retailers' profits. For example, it is shown that having greater differences across the mean store demands leads to a higher expected profit, for a given inventory and total mean demand. If more than one inventory shipment per season is possible, the analysis becomes dynamic by including updated demand forecasts for

each store and re-optimizing store inventory policies in midseason. In this paper, we formulate a dynamic stochastic optimization model that determines the total order size and the optimal inventory allocation across no identical stores in each period. A generalized Bayesian inference model is used for demands that are partially correlated across the stores and time periods. We also derive a normal approximation for the excess inventory from the previous period, which allows the dynamic programming formulation to be easily solved. We analyze the tradeoffs between obtaining information and profitability, e.g., stocking more stores in period 1 provides more demand information for period 2, but does not necessarily lead to higher total profit. Numerical analyses compare the expected profits of alternative supply chain strategies, as well as the sensitivity to different distributions of demand across the stores. This leads to novel strategic insights that arise from adopting inventory policies that vary by store type.

Role of inventory and transportation costs in determining the optimal degree of centralization [Author-C Das, R Tyagi(2015)]

This paper presents a formal analysis of the inventory centralization decision in a wider perspective. Expressions for various elements of total system cost are developed and their individual and combined effects on centralization are analyzed using an optimization model. The major thrust of the paper is on the optimal degree of centralization as a tradeoff between inventory and transportation costs. It considers five scenarios each representing a different role of inventory and transportation in the total supply system. Examples of how each scenario may arise in practice are given and the best degrees of centralization for the scenarios are compared and illustrated with secondary data.