

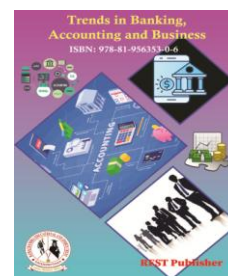


Trends in Banking, Accounting and Business

Vol: 2(2), 2023

REST Publisher; ISBN: 978-81-956353-0-6

Website: <https://restpublisher.com/book-series/tbab/>



Supply Chain Challenges in Indian Food Retail Industry

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Abstract. Indian food retail sector is highly unorganized and fragmented. The degree of fragmentation is much higher among food retailers than among non-food retailers. Organized food retail formats account for 72 % of global food sales. India can become the food supplier of the world. It has the required cultivable land and all the seasons for production of all varieties of fruits and vegetables. Also an agrobusiness system that works well, although it needs to be vastly improved. The single most important problem facing the Indian food retail industry is the highly inefficient supply chain. It is because of lack of cold chain infrastructure and a food processing industry. This paper is an attempt to explore the problems faced by Indian food retail industry for food security in terms of inadequate infrastructure and highly inefficient supply chain in context of information technology. This paper also attempted cover some important aspects of food supply chain in India-identification of issues at different levels in the supply chain; transformation in the agriculture due to various supply chain interventions; the role of ICTs in supply chain management. Finally given suggestion to improve efficiency at different levels in supply chain. The paper concludes that efficient supply chain plays very important role for development and contemporary issue for food retail industry therefore; government action must address the issue of infrastructure development to achieve the objective of food security for all.

Keywords: food retail, supply chain management, infrastructure, food security, information technology.

1. INTRODUCTION

India with its billion-plus population provides a large and growing market for food products. Food products are the single largest component of private consumption expenditure, accounting for as much as 50 per cent of the total spending. Furthermore, the upward mobility of income classes and increasing need for convenience and hygiene is driving demand for perishables, non-food staples and processed foods. However, the pace is slow in the food sector when compared to IT and Pharma. India is still to get its share of billion-dollar players in the food industry like China and Philippines where the companies are achieving sales exceeding US \$ 1 billion. While the country has a distinct advantage in terms of diversity in population with several religious groups and different food habits, the food supply chain is complex, with perishable goods and numerous small stakeholders. In India, the infrastructure connecting these partners is weak. Each stake holder, be it the farmer, the wholesaler, the food manufacturers, the retailer, all work in silos. There is complete absence of demand forecasting, with farmers trying to push into the market whatever they produce. What needs to be introduced in the food supply chain are best practices like data integration, financial flow management, supply-demand matching, collaborative forecasting, information sharing and goods movement synchronization through efficient transport scheduling. Cold chain-intensive supply chains should take advantage of technology improvements in data capturing and processing, product tracking and tracing, synchronized freight transport transit times for time compression along the supply chain and supply-demand matching. The supply chain needs to be designed and built in an integrated. Manner, along with the processes of new product development, procurement and order-to-delivery processes, well-designed and well supported by software. There are several regulatory changes that need to be made all along the supply chain so that they are consistent and mutually reinforcing.

2. DEFINITION OF SUPPLY CHAIN MANAGEMENT

To Supply chain management is management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customer. SCM has been defined as, "The delivery of enhanced customer and economic value through synchronized management of the flow of physical goods and associated information from sourcing to consumption.

Supply Chain Management in Food Industry: Concept. 'Food SCM' (FSCM) is the term given to the system and inter-connections of organizations, people, activities, technologies, information and resources involved in production and distribution of a food products. It encompasses many different disciplines and logistical steps from sourcing the right raw material and ingredients through to on-time delivery to the consumer. The supply chain can be quite complex when dealing with food products. Terms such as, "Farm to Fork" or "Paddock to Plate", refer to the supply chain within the food industry as an expression to visualize the chain. The chain starts from farmers/ growers/ producers, then there are the manufacturers who turn the raw material into palatable products, this may involve several stages and several manufacturers. The manufacturing can also be done close to where the commodity crop is grown or it can be moved elsewhere or even exported to another country. Subsequently comes the packaging company, who manufacturer the packaging material to protect the products. The distributors and transporters move the food supplies by road, rail, air or sea. Once the product arrives at the destination, it goes into the shops or marketplace for selling. The shop can be a huge multi-national supermarket or a small outlet. The retailers promote the product to attract the consumers to buy it, by way of advertising and marketing strategies, both at the point of sale and through advertising media like newspapers and television channels. Finally, the customer buys the product, takes it home and consumes it. The supply chain then is completed.

India vs. International Retail Supply Chains: The Indian retail has just started to develop. This is in contrast to the major international retailing countries where it has already reached the maturity stage. Due to this, still a lot many wrinkles need to be smoothened out. The Indian retail is still not as effective as that in the global markets with the inventory turns being lower and stock outs being higher than global average.

Objectives of the Research:

1. To understand the importance of logistics and supply chain management in Food retail Markets.
2. To identify the factors affecting supply chain of Food Retail sector in India.

3. LITERATURE REVIEW

N. Viswanadham (2008) in his study "Improving India's food supply chain". Analyzed the main problems of food supply chain management in India. The author stated the major problems in food supply chains like poor infrastructure connections, absence of demand forecasting, with farmers trying to push into the market whatever they produce, outdated technology etc. the author suggested that there is necessary to introduced in the food supply chain some best practices like data integration, financial flow management, supply-demand matching, collaborative forecasting, information sharing and goods movement synchronization through efficient transport scheduling. Finally, it is concluded that to become a global leader in food supply, India needs to replace its fragmented and wasteful produce-supply chain with a modern and efficient one.

Sazzad Parwez (2013) "Food Supply Chain Management in Indian Agriculture: Issues, Opportunities and Further Research". This paper is an attempt to explore the problems faced by Indian agriculture for food security in terms of inadequate infrastructure and highly inefficient supply chain in context of information technology. This paper examines the critical issues at each sub-system of agriculture supply chain, Investments in cold chain infrastructure, applied research in post-harvest technologies. The paper concludes that efficient supply chain plays very important role for development and contemporary issue for agriculture therefore; government action must address the issue of infrastructure development to achieve the objective of food security for all.

Samir Dani in his study "Food Supply Chain Management and Logistics". States that Food Supply Chain Management and Logistics is both indispensable and accessible. The growth of the food industry brings unique logistical challenges: new supply routes and demand dynamics are reshaping the future of food logistics. It is therefore essential for the industry to innovate, not only in demand management but also in order to ensure that food sources for a growing population are sustainable. Food Supply Chain Management and Logistics examines and assesses the support mechanisms that help overcome the challenges to food supply chains and make sure that food reaches our plates safely.

Joy Mukhopadhyay., "Supply chain management: a comparative study between large organized food and grocery retailers in India". The objective of the study is to find out how large organized retailers are coping up with these problems. In this paper a comparative study is made in supply chain management adopted by different players in food and grocery segments. From the study it is found that a big challenge to organized large retailers particularly in food sector in terms of supply chain management such as huge size and population of our country, varied culture and hence varied taste, very poor infrastructure like improper roads, bad connectivity between production centers and markets, lack of proper cold chain facility like refrigerated transportation, ware-housing etc.

Rai Retailers Association of India (2013). "India Retail Supply Chain Study opportunities, challenges & the path ahead". The purpose of this study is to explore the critical role of Supply chain management in the success of the retail industry. The objective of the study is to know the role of supply chain management practices in retail firms in India and to study the Supply chain challenges to the retail industry. The study is based on primary data. The paper concluded that there is

definitely scope for improvement and retailers would need to cajole the suppliers to adhere to timelines, thus avoiding overstocking at the stores to take care of the inefficiency of the supplier.

Saurav Negi and Neeraj Anand (2015) “issues and challenges in the supply chain of fruits & vegetables sector in india: a review” the purpose of this paper is to discuss the supply chain of fruits and vegetables sector in India and explain the issues which are affecting it. Authors also suggested the corresponding mitigation strategies to overcome the identified issues and challenges. Descriptive research has been used for this study. The study found that Cold Chain Facilities; Fragmented Supply Chain; Linkages and Integration between the partners; Taxation Issue; Infrastructure Facilities; Cost of Packaging Material; Technology and Techniques; Farmer's Knowledge etc., are the factors which constitutes serious challenges for Fruits and Vegetables sector and are affecting the overall growth of the agricultural development of India.

3. RESEARCH METHODOLOGY

Type of Research: The study is based on conceptual research which aims to give a vast knowledge on the above the topic.

Type of data: The study is based on secondary data collection methods

Sources of data: The data for this study has been collected from various secondary sources like Research papers, journals, websites and online magazines etc.

Discussion: Poor Infrastructure: India has the second longest Road Network in the world. But less than 2% of the entire road length is covered by National Highways. This 2% of the road handles 40% of the Cargo. Normal distance travelled by an Indian Truck is 250-300 km/day as against an International norm of 600-800 km/day. Also most of the roads in India can support only 16.2 tons as against an International norm of 36 tons. Many of the Indian cities have brought in ‘Truck Curfews’ by blocking the trucks during day time. If the curfew is missed, the trucks have to be parked outside the city and there is a long delay. This type of delay becomes a problem in case of Perishable goods. For instance, it is said that 20% of the Tomatoes get rotten during Transit. Railway network is not very suitable for transit of Food items as it does not provide end to end delivery in many cases. Port Infrastructure is very important for importing Food Items and the delay caused in the ports can have adverse effect. High dependence on manual labour and low technological presence impacts the supply chain lead time.

Underexposure of Organized Logistics: In India, only 6% of the logistics is organized. The absence of organized logistics paves way for delay in Transportation of food produces from the farm to the end consumer. There are lot of middlemen involved and the time taken for the produce to reach the end consumer results in Food Wastage and price hike. Recently Government has introduced 100% FDI in Logistics Sector. Organized Logistics firms like DHL, TNT and FEDEX are coming into the markets, but they are limiting themselves to the commercial areas. This is mainly due to the lack of infrastructure in hinterland. Absence of Adequate Warehouses: Two types of Warehousing are required for Food Produces. One is a sheltered Warehouse to store Food Grains like Rice, wheat and Cereals. The other one is Cold Storage Facility to store Fruits and Vegetables. Sheltered Warehouse: Many of the warehouses have inadequate capacity. The crop production has gone up significantly over the years, but the warehouses have not increased. In 2020-2021, the Food Grain produced was 308.65 Million Metric Tons. The storage capacity owned by the Government was 91 Million Metric Tons. As a result, many crops are stored in the Open Space and if it rains unexpectedly, then the food grains are damaged. Also due to the absence of Pest Control Mechanisms, 20% of the food grains are eaten by rodents each year.

Lack of Cold Storage Facility: Cold Storage Facility is important for storing Fruits, Vegetables and Milk. The existing Cold Storage Facilities can store 21.7 mn tons food produce, but the requirement is more than 31 Mn tons. This means that one third of the food produce goes waste each year due to the absence of Storage Facilities

Suggestions: The players in the sector will have to address the policy and institutional concerns of integrating small farmers in modern value chains as well as streamlining traditional fragmented value chains to maximize share of consumer rupee going to the farmers. A large part of the supply chain is in the semi-organized sector though this sector is aspiring to get more organized and professional. An integrated perspective of the supply chain with the objective of bringing professionalism and excellence in decision-making can significantly improve the effectiveness and efficiency of the supply chain and consequently the food business in India. Public policies and regulation have a significant role in influencing food supply chains since the ‘product’ is an essential good, every citizen is a consumer, and a significant percentage of the citizens are producers. Allowance of Foreign direct investment more and more into food retailing not only attracts foreign retailers but also helps to improve backend infrastructure, high investment, increase in income of farmers, cut down of too many middlemen and finally goods with quality and reasonable price to the final consumers.

4. CONCLUSION

India has practically everything going for it. It has cultivable land, it has all the seasons needed for production of all varieties of fruits and vegetables and it has a well-developed agribusiness system that works in its own, though chaotic, way. The only problem with this system is that a huge gap exists between what is produced and what finally reaches the consumer. By the time, the surplus and fresh produce makes its way to the markets, they have gone through several middlemen, travelled several roads, worsened in quality, increased in price and got wasted. If India has to offer the world a rich and healthy food basket, it has to build proper cold chain infrastructure, invest in applied research in post-harvest technologies, get food-processing plants working in various sectors and develop its food-retailing sector. Until then, the surplus food produced in India remains out of its food basket.

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