

A Study on impact of supply chain in FMCG sector with special reference to retailers in Kerala

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Abstract: With a potential of more than Rs 500 billion, the fast-moving consumer goods industry (FMCG) is the fourth largest sector in the economy. In addition, the FMCG market covers a wide range of consumer products commonly bought, including soaps, milk products, chocolate, soft beverages, berries, vegetables and batteries. Generally, FMCG goods have small amounts, but big quantities. The study focuses on retailers in Kerala and to measure the effectiveness of the supply chain and to find the problems faced by them. The main issue with the retailers is that, Opportunistic Games played by the Distribution Channel and counterfeit goods. The timely delivery of the product to the rural area is another issue faced by them.

Keywords: Supply chain, FMCG, Retailers.

1. INTRODUCTION

Businesses receive various business improvement procedures to improve business execution. Coordination's just as production network the board has been respected to be the pivotal factor for the organizations to acquire a serious edge. Truth be told, coordination's just as store network the board has gotten consideration since the mid-1980s, yet reasonably the administration of supply chains isn't especially surely known, and numerous creators have featured the need for clear definitional develops and theoretical structures on inventory network the board. Right now, give an instructional exercise on the momentum research of tasks the executives of coordination and inventory network. We initially explain the origination of coordination's and production network the board right now, characterizes the extent of our related research papers. The centre of this paper is that we give a few hot issues right now guides to show how these inquiries about contribute from various research points. At last, we close the paper with the experiences acquired from our examination and future investigation bearings right now.

FMCG

Fast-moving consumer goods (FMCG) segment is the fourth the biggest part of the economy with the size of about additional than Rs 500 billion. FMCG part, for the most part, incorporates a wide scope of much of the time obtained purchaser item, for example, cleansers, dairy items, confectionery, soft drinks, fruits and vegetables, and batteries. FMCG items, for the most part, have a low unit cost yet enormous volume. In the FMCG segment, the production network execution is a key factor. The FMCG industry is portrayed by complex conveyance organize and serious challenge driving firms to continually deal with store network development. Organizations with better store network framework will perform well, though those with ineffectively oversaw supply chains will think that it's intense to even get by in a serious market.

LOGISTICS

Logistics is the administration of the progression of products between the purpose of birthplace and the purpose of utilization so as to meet a few necessities, for instance, of clients or enterprises. The assets oversaw in supply chain can incorporate physical things, for example, nourishment, materials, livestock, hardware, and fluids, just as conceptual things, for example, time, data, particles, and vitality. The logistics of physical things, for the most part, include the combination of the data stream, material dealing with, generation, bundling, stock, transportation, warehousing, and regular security. The intricacy of Supply chain can be displayed, broke down, pictured, and improved by devoted reproduction programming. The minimization of the utilization of assets is a typical inspiration in Supply chain for import and fare.

Note that the above meaning of Logistics isn't bound together, despite the fact that it may be for sure, in current condition, a regularly recognized one. For instance, Council of Logistics Management (presently renamed as Council of Supply Chain Management Professionals) alluded to coordination's as "the way toward arranging, actualizing, and controlling the productive, viable stream and capacity of merchandise, benefits, and related data from purpose of source to purpose of utilization to comply with client prerequisites," which incorporates inbound, outbound, interior, and outside developments and return of materials for natural purposes.

As should be obvious, the idea of Logistics centres around the item stream, which is the importance by which this word has been interpreted in Chinese. It additionally puts an accentuation on the exercises of taking care of the item, which incorporates the capacity, transportation, conveyance, and bundling and handling. Even though business Logistics include numerous exercises, the conventional research of activities the executives on logistics fundamentally identify with the fields of coordination office, transportation, and stock arranging.

2. REVIEW OF LITERATURE

De Koster et al. (2007) conducted a review for design and control of picking operation in warehouses and according to him order picking can be identified as the most labour-intensive and exorbitant activity in the functioning of almost every warehouse around the globe. It is estimated that almost 55% of the total warehouse operating expense is from cost of order picking. Any underperformance or delays in order picking process can lead to customer dissatisfaction and high operational expense for the warehouse, and consequently affects for the entire supply chain. Only a robustly designed and optimally controlled order picking process can make the warehouse operate efficiently. This publication gives a literature overview on common decision issues in design and control of manual order-picking processes in Warehouse operations. In this thesis I focused around ideal performance improvement measures, internal layout design, order batching, routing methods and storage assignment methods. Realizing its importance recently the researches in this area has grown rapidly. Still, combinations of the above areas have scarcely been analysed and developments in warehousing practices lead to promising new research directions

Khanzode, Vivek & Shah, Bhavin. (2017) in their study comprehensively discusses the existing state-of-the-art warehousing literature and highlights concerned research issues as per the proposed taxonomy. This work put forward a decision framework to develop optimal number of warehouses and their required capacity in a supply chain network. This paper tries to find out specific performance methods and measures, and analyse their effect on the general logistics system. But this report doesn't focus on warehouse design and other operational issues ignoring performance measures affecting each function of warehousing and overall productivity.

Gu, Jinxiang & Goetschalkx, Leon, Marc & Mcginnis. (2007) published a journal 'research on warehouse operations' in which they extensively reviewed the warehouse operations planning problems. The issues are listed according to basic warehouse functions such as receiving of items, put away process, storage, order picking and shipping. The literature is having an emphasis on the characteristics of various decision support models and solution algorithms. This research also emphasis on analysis, primarily of storage systems rather than synthesis.

Nidhi and Anil, 2011 in their study "A cost optimisation strategy for a single warehouse multi-distributor vehicle routing system in stochastic scenario" discuss the fact that in supply chain and logistics management operations the delivery stage is the most expensive phase. A simulation model is developed by the authors to seek cost optimisation in a single warehouse multi distributor system in contingent environment. The study was conducted in an LPG bottling and distribution plant. Performance measures which account for quantifiable and non-quantifiable cost factors are been utilized for the study. The study proposed a dispatch rule-based allocation in place of random method presently followed.

Jaggi, Prof. (Dr.) Chandra & Khanna et al. (2013) conducted a study on two-warehouse inventory problems considered for deteriorating items with constant demand rate and shortages under inflationary conditions. In today's fluctuating world economy, the cost of goods are affected by inflations and time value of money. As a remedial measure to protect from rising prices, during the inflation period, the organization prefers to keep a higher inventory, thereby increasing the aggregate demand. This additional inventory will require more storage space that much be facilitated by a rented warehouse. Further in the real business world, to retain the freshness of the commodity, most of the warehousing firms adopt the first-in-first-out (FIFO) dispatching policy. In case of items which are deteriorating in nature FIFO policy can be followed which can provide fresh and good conditioned stock to customers thereby resulting in customer satisfaction. The work assumes that the holding cost of items is more in rented warehouse than the cost in owned warehouse because of the modern preserving techniques. Therefore, the best practice to reduce inventory cost is consuming the goods of rented warehouse at the earliest. This warehouse management practice is named as Last-In-First-Out (LIFO) approach. The purpose of this thesis is to present research is to develop a warehouse inventory model with FIFO and LIFO and a comparison between FIFO and LIFO policies with example.

Srinivas Kolluru (2009) conducted a study which deeply analyse the effects of the variables like average number of fast moving and slow-moving vehicles per day, average number of light or heavy vehicles ratio, drivers rest hours, travel time from origin to destination on selected 68 routes in India. The research is divided into three different sessions. In which the first session describes basic background of the road transport sector in India and reviews the literature on the topic. The second part show how the econometric techniques can be applied to estimate the impact of different variables on the lead-time of freight transportation and last part explains the outcomes and derives effective solutions, research.

According to Shilpa et al. (2014) the entire distribution network can be optimized by optimizing load planning and network optimization. Their research focus on logistics cost optimization at the secondary distribution network of the retail supply chain. The study deeply evaluates the importance of transportation and different cost associated with retail logistics. The limitation of the study is that it focusses only on retail distribution network of organization. The study also identifies the research gaps in the area.

Staudt et al. (2015) present a synthesis of the literature on operational performance of warehouses by define performance indicators and a framework to demonstrate their boundaries. It also provides some discussions on recent trends in warehousing practices and suggest future research directions on performance evaluation of warehouse activities.

J. Allen; M. Browne et al. (2012) discussed a review on performance measures for warehouse operations after examining road freight transport operations and its relationship with facility location, urban form of 14 selected urban areas in the UK concluded that larger urban areas appear to have a higher proportion of internal freight activity when compared with that of smaller ones. The analysis also discusses the issues of low growth in urban warehousing and suburbanization of warehousing.

Nishant and Sharif (2007) conducted a study focused on the importance and utility benefits of information systems in road transport. The two major types of information systems in road transport are Geographical Information System (GIS) and Road Information System (RIS). It also discusses the effects of the web based integrated road information system (RIS), coupled with GIS which is launched by National Highway Authority of India (NHAI). This paper attempted to analysis the usefulness of road information system (RIS) to drivers for enhancing the overall performance of supply chain. They also highlighted the benefits of RIS in establishing supply chain management in India and how further improvements can be made to the initiative taken by National Highway Authority of India (NHAI).

N. Faber et al. (2002) conducted a study about organizing the warehouse management and its purpose is to investigate how warehouse management is understood as a cluster of planning and controlling decisions and procedures, is organized and driven by task complexity and market dynamics. The research methodology adopted in this research is a multi-variable conceptual model and it was developed in based on the literature and it suggest that task complexity and market dynamics are the main drivers of warehouse management. Task complexity appears to be the main driver of the warehouse management (information) system (WMS). According to author Rene Marinas, warehousing is becoming more and more a critical activity in supply chain to outperform competitors on customer service, lead times and cost. The work suggests that the implementation of a warehouse management system (WMS) is a necessary condition to achieve efficiency and high performance of warehouse operations required in today's marketplace if warehousing is to be a source of competitive advantage. A standard warehouse management system (WMS) have many advantages such as like it is a proven solution and economical and also have shorter implementation lead time.

3. RESEARCH METHODOLOGY

3.1 Scope of the Study

The study focuses in understanding how the effectiveness of supply chain help the retailers in providing better products to customers in FMCG sector. As the product category is in such a way that it will make a huge impact in providing better services to the customers

3.2 Objectives

1. To understand the effectiveness of supply chain from the retailer perspective.
2. To understand the issues faced by retailers in supply chain.
3. To understand the effectiveness supply chain of FMCG products based on the area.

3.3 Limitations

- The study is limited to only retailers in Kerala and the results may not apply for other states.
- The respondents are limited.

3.4 Hypothesis

H1: There is a direct relation between supply chain effectiveness and the area of operation.

3.5 Methodology of the Study

1. **Research Design:** The type of research design used in this research is both Descriptive and Exploratory design.
2. **Sample Area:** The data will be collected from retailers in Kerala.
3. **Sample Technique:** Convenient sampling technique will be used as it will be much easier to select target Companies as per the preference and less time consuming.
4. **Sample Unit:** Companies who have been in supply chain for more than 5 years will be selected.
5. **Tools and Techniques:** Tools used to collect data will be through Primary data with the help of structured questionnaire. Techniques Used for the study (Scale of one to five) Likert Scaling Technique.

4. DATE ANALYSIS AND INTERPRETATIONS

H1: There is a direct relation between supply chain effectiveness and the area of operation.

Table 1: Area of operation and the supply chain effectiveness

ANOVA					
Do you get FMCG products on time					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.782	2	.391	1.056	.381
Within Groups	4.075	11	.370		
Total	4.857	13			

From the table we can see that the there is a positive relation between the area of operation and the supply chain effectiveness. As the significance value is above 0.05, we can say that the hypothesis is positively correlated.

Table 2: Area of Operation

Area of Operation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	80	57.1	57.1	57.1
	Rural	50	35.7	35.7	92.9
	Semi Urban	10	7.1	7.1	100.0
	Total	140	100.0	100.0	

The study shows that 57.1% of the stores are in urban area where 35.7% of stores are in Rural area 7.1% is in Semi urban area. The area of the stores plays a major role in the effectiveness of the supply chain.

Table 3: Size of Store

		Size of the store			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Small	30	21.4	21.4	21.4
	Medium	50	35.7	35.7	57.1
	Large	60	42.9	42.9	100.0
	Total	140	100.0	100.0	

From the data we can see that 42.9% of the stores are Large in size which can be seen like, majority of the stores are in Urban sector and the store size is increasing. 35.7% of the stores are Medium in size spread across Urban and Rural areas and the remaining stores are small in size.

Table 4: Price reasonability for retailers

		Does the supply chain pricing reasonable			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	14.3	14.3	14.3
	No	120	85.7	85.7	100.0
	Total	140	100.0	100.0	

Based on the pricing 85.7% of the retailers have the option that the pricing margin is not reasonable and the remaining people are satisfied with the pricing.

Table 5: Issues faced by retailers in SCM

		What are the issues you faced in the SCM			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Cost	20	14.3	14.3	14.3
	Taxation	20	14.3	14.3	28.6
	Counterfeit Goods	30	21.4	21.4	50.0
	Opportunistic Games played by the Distribution Channel	50	35.7	35.7	85.7
	Emergence of modern retails	20	14.3	14.3	100.0
	Total	140	100.0	100.0	

The table shows that the opportunistic games played by the distribution channel can be a major issue faced by majority of the retailers. It is a common notion in distribution that only 50 percent of the promotion actually reaches the final customer. Companies lose control of the sales and end up wasting resources without giving any value to their customers. Another concern for the retailers is the counterfeit notes. It is found that counterfeit products of well-known brands raked in sales equivalent to over 50 percent of the original products across the industry. To prevent such losses, the FMCG companies have to exercise greater control over their distribution channels.

5. CONCLUSION AND SCOPE OF FURTHER STUDY

The study shows that the area of the stores plays an important role in success of the supply chain. If the store is rurally located the timely delivery of products are not possible. The majority of the stores are large in size and the majority of the retailers have the opinion that the pricing of the supply chain is not that reasonable. The quality of the product remains different based on the region of operation. Studies show counterfeits accounted for losses worth more than Rs 300 billion for the FMCG sector every year. It is found that counterfeit products of well-known brands raked in sales equivalent to over 50 percent of the original products across the industry. To prevent such losses, the FMCG companies have to exercise greater control over their distribution channels. It is a common notion in distribution that only 50 percent of the promotion actually reaches the final customer. Companies lose control of the sales and end up wasting resources without giving any value to their customers.

Longitude research studies with larger sample size will lead to a better understanding for the subject, and will be an interesting study with a wider area to cover and have a larger perspective on this topic.

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