

A Study on Supply Chain Management Practices of Zuko Overseas Private Limited: Challenges, Enablers and Success Factors

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How to cite this article:

S.G. Balaji, Nasreen N/A Study on Supply Chain Management Practices of Zuko Overseas Private Limited: Challenges, Enablers and Success Factors/J Soc Welfare Manag. 2023;15(3):211-217.

Abstract

Introduction: The logistics sector plays a key role in enabling commercial trade among multiple parties and this sector is projected to grow at a compound annual growth rate (CAGR) of 15.5% between FY2019 and FY2024. The present study is conducted to find the supply chain management practices, challenges, enablers and success factors of Zuko overseas private limited.

Methodology: The descriptive research design was used to analyzes the challenges, enablers and success factors of supply chain practices of Zuko Overseas Pvt. Ltd. in Chennai. The primary data was collected from 148 respondents who were clients/customers of Zuko. The quota Sampling method was used for the study, and the advanced statistical analysis like spearman's rank correlation was employed to test the hypothesis of the study.

Results: Spearman's Rank Correlation, the coefficient of correlation between customer order management and strategic planning management is 0.377 which indicates that there is a moderate and positive relationship between them. Similarly, multiple statistical tools were used to analyze the practices and performance using which suggestions were made.

Keyword: Supply Chain Management; Supply Chain Integration; Supply Chain Risk; Supply Chain Technology; Supply Chain Performance Management System.

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Received on: 11.07.2023

Accepted on: 30.08.2023

INTRODUCTION

The logistics sector plays a key role in enabling commercial trade among multiple parties by transporting, warehousing, and distributing goods through various supply chain networks such as B2B, B2C, or C2C. The logistics industry in India is expanding rapidly, driven by the country's fast growing economy.¹ According to various market research, the sector is projected to grow at a

compound annual growth rate (CAGR) of 15.5% between FY2019 and FY2024. The logistics industry encompasses various activities such as processing orders, controlling inventory, transporting goods, managing warehouses, handling materials, and packaging, all of which are connected through a network of facilities. This research was conducted at Zuko Overseas Private Limited, Chennai who oversees importing and exporting activities of products like dates, honey and nuts in Malaysia, Singapore and India. They have also laid their foundation in whole sale, retail supply and distribution businesses. The survey was conducted among the customers and clients of Zuko Overseas Pvt. Ltd. Where in data analysis was performed using the responses from 148 respondents.

Literature Review

Singh, S., Agrawal, V. and Mohanty, R.P. (2022) on their paper "Multi-criteria decision analysis of significant enablers for a competitive supply chain" discussed that the multi-criteria decision analysis can be used to identify and prioritize significant enablers for a competitive supply chain. A competitive supply chain could be thought of as a network of businesses, suppliers, and service providers that work together to deliver products or services to customers in a way that provides a competitive advantage. There are several significant enablers that can help create a competitive supply chain like effective supplier management, top management commitment, advanced technologies, efficient logistics and distribution. The study focuses on significant enablers of competitive supply chain and analyzing their relationships using multi-criteria decision making (MCDM) techniques. The study found that the "Top management commitment is the most prominent causing enabler of a CSC; customer satisfaction is the top most effect enabler; the operational performance of individual firms in the supply chain is a crucial enabler of a CSC."

Ganbold, O., Matsui, Y., & Rotaru, K. (2021) on their paper "Effect of information technology enabled supply chain integration on firm's operational performance" evaluated that information technology enabled supply chain integration has a significant impact on a firm's operational performance. By integrating information technology into their supply chain, firms can improve communication with their suppliers and customers. This enables them to respond more quickly to changes in demand and reduces the likelihood of stock outs or delays. IT enabled supply chain integration also

provides firms with greater visibility into their supply chain. This enables them to track inventory levels, monitor supplier performance, and identify potential bottle necks in their operations. By automating certain supply chain processes, such as order processing and inventory management, firms can improve efficiency and reduce costs. Information technology holds an important role in the performance of supply chain management. It impacts the operational performance in terms of quality, delivery, production cost, inventory level, customer service and product mix flexibility. The study indicates that "IT capability has positive impact on SCI, except for data consistency, which is found to have negative impact on internal integration. SCI, especially customer integration, has positive and significant impact on all operational performance indicators."

David Blanchard (2021) in his book "Supply Chain Management Best Practices" discussed that the Supply Chain Management (SCM) practices refer to a set of proven methodologies and techniques for optimizing the flow of goods and services from raw material sourcing to delivery to the end customer. These practices aim to improve the efficiency and effectiveness of supply chain operations, increase profitability, reduce costs, and enhance customer satisfaction. Organizations essentially need to adopt supply chain strategies in order to improve its performance. The strategies formulated by the top management requires proper implementation by the lower levels of management. This assures improvement in supply chain practices of the firm. Further more, supplier partnership, customer relationship and information sharing are key factors that contribute to the supply chain performance. The higher levels of supply chain management practices lead to higher levels of supply chain performance and benefits.

Blandine Ageron, Omar Bentahar & Angappa Gunasekaran (2020) in their paper "Digital supply chain: challenges and future directions" conversed that the digital supply chain is an emerging concept that refers to the integration of digital technologies into traditional supply chain processes. While digitalization presents numerous opportunities for supply chain optimization, it also poses several challenges that must be addressed to realize its full potential. Digital supply chain essentially means the adoption of information systems and innovative technologies to enhance the supply chain practices and sustainable performances of the organization. Project management is crucial to the digital supply chain and it is a challenging factor.

The study states that further research is essential to mobilize technology acceptance models and theory, innovation adoption theory, organizational project management theory, dynamic capability theory and stake holders' theory.

Statement of the Problem

The need for efficient supply chain management practices has become vital due to increasing demand in both domestic and international markets. The competition has also intensified as a result of globalization, requiring industries to produce high quality output at a low cost with strict delivery schedules. Industries may suffer a loss of credibility and business potential if they encounter issues such as poor quality supplies, delayed deliveries, and unwarranted cost increases. Supply chain disruption management is a major concern for manufacturers, and it can result in significant tangible and intangible losses. Various studies have been under taken to present the concepts and challenges of supply chain management and how it can be used as a tool to improve overall performance in today's global competitive environment.

The current study, titled "A Study on Supply Chain Management Practices of Zuko Overseas Private Limited: Challenges, Enablers and Success Factors" attempts to understand the supply chain management practices of Zuko Overseas Private Limited. The study is conducted with regards to a key focus on challenges, enablers and success factors of supply chain management practices. This would provide a careful analysis of supply chain practices that enables a better decision making in the organization.

Objectives of the Study

- a. To study about the supply chain management practices of Zuko Overseas Private Limited with regards to challenges, enablers and success factors.
- b. To measure the supply chain performance of Zuko Overseas Private Limited.
- c. To evaluate the critical success factors of supply chain management practices of Zuko Overseas Private Limited.
- d. To analyze the implementation of supply chain enablers at Zuko Overseas Private Limited.
- e. To study the impact of supply chain risks faced by the clients of Zuko Overseas Private Limited.

- f. To study the relationship of supply chain integration factors at Zuko Overseas Private Limited.

Scope of the Study

The purpose of this research is to explore the relationship between supply chain management challenges, enablers and chain management practices on supply chain performance.

The main tools of data collection instrument used was a questionnaire which was administered to a total sample of 150 executives, managers and employees of logistics firms and their client companies. It was applicable to the job functions and area of business such as corporate executives, purchasing, manufacturing/production, distribution/logistics, SCM, transportation, material, operations, software houses, retailers, whole salers and suppliers.

The study focused on variables such as supply chain challenges and risks, supply chain enablers, supply chain integration, critical success factors and supply chain performance. These variables investigated the relationship between the supply chain management practices and supply chain performance in brief. The findings showed that supply chain management practices have a significant relationship with supply chain performance statically.

METHODOLOGY

The descriptive research design analyzes the challenges, enablers and success factors of Zuko Overseas Pvt. Ltd. in Chennai. The primary data was collected from 148 respondents who were clients/customers of Zuko. Sampling method of quota sampling was used and advanced statistical analysis was employed to test the hypothesis. The conclusions of this study would help the logistics firms in enhancing their techniques and improving their supply chain performance.²

RESULTS

Data Analysis

Kruskal Wallis H-Test

H_0 : There is no significant difference between the mean rank of annual turnover of the company and supply chain performance of Zuko Overseas Private Limited.

H_1 : There is a significant difference between the mean rank of annual turnover of the company and supply chain performance of Zuko Overseas

Private Limited.

From the table, it was identified that P-Value is less than 0.05 and hence null hypothesis is rejected

Ranks			
	Turn Over	N	Mean Rank
Customer supplier relationship	Below 10 lakhs	45	46.27
	10 to 20 lakhs	35	52.10
	20 to 30 lakhs	11	25.50
	Total	91	
Information and communication technology	Below 10 lakhs	45	47.30
	10 to 20 lakhs	35	46.46
	20 to 30 lakhs	11	39.23
	Total	91	
Material flow management	Below 10 lakhs	45	45.60
	10 to 20 lakhs	35	52.41
	20 to 30 lakhs	11	27.23
	Total	91	
Corporate culture	Below 10 lakhs	45	44.77
	10 to 20 lakhs	35	47.96
	20 to 30 lakhs	11	44.82
	Total	91	
Performance management	Below 10 lakhs	45	43.53
	10 to 20 lakhs	35	54.04
	20 to 30 lakhs	11	30.50
	Total	91	

Test Statistics					
	Customer supplier relationship	Information and communication technology	Material flow management	Corporate culture	Performance management
Chi-Square	11.268	.917	8.472	.332	8.102
Df	2	2	2	2	2
Asymp. Sig.	.004	.032	.014	.047	.017
a. Kruskal Wallis Test					
b. Grouping Variable: Turn over					

at 5% significance level. Therefore, it is concluded that there is a significant difference mean rank of annual turn over of the company with regards to supply chain performance of Zuko Overseas Private Limited.

Cochran's q Test

H_0 : There is no significant difference between the various technologies adopted by clients of Zuko Overseas Private Limited.

H_1 : There is a significant difference between the various technologies adopted by clients of Zuko Overseas Private Limited.

Since $P < 0.01$, null hypothesis was rejected

Frequencies		
Technology	Adopted	Not adopted
Cloud computing	115	33
Artificial Intelligence	60	88
RFID	50	98
IoT	110	38
Advanced analytics	49	99
Test Statistics		
N	148	
Cochran's Q	115.595a	
Df	4	
Asymp. Sig.	.000	

and therefore, there is a significant difference between the various technologies adopted by clients. Moreover, cloud computing is the most used technology, whereas, advanced analytics is considered as the least adopted technology by the clients of Zuko Overseas Private Limited.

Ranks	
	Mean Rank
On-time delivery issues	1.88
Quality issues	2.7
Capacity constraints	2.84
Technological reliability	3.66
Communication problems	3.93
Test Statistics	
N	148
Chi-Square	158.189
Df	4
Asymp. Sig.	0

Friedman Test

H₀: There is no significant difference among the mean rank towards the supply chain risks faced by the clients at Zuko Overseas Private Limited.

H₁: There is a significant difference among the mean rank towards the supply chain risks faced by the clients at Zuko Overseas Private Limited.

From the table, it was identified that P-Value is lesser than 0.05 and hence null hypothesis is rejected at 1% significance level. Therefore, it is concluded that there is a significant difference among the mean rank towards the supply chain risks faced by the clients at Zuko Overseas Private Limited.

Spearman's Rank Correlation Coefficient

H₀: There is no significant relationship between the supply chain integration factors in micro environment of Zuko Overseas Private Limited.

H₁: There is a significant relationship between the supply chain integration factors in micro environment of Zuko Overseas Private Limited.

		Customer order management	Strategic planning management	Logistics management	Procurement management	Enterprise integration
Customer order management	Correlation Coefficient	1.000	.377**	-.247**	-.402**	-.546**
	Sig. (2-tailed)	.	.000	.003	.000	.000
	N	148	148	148	148	148
Strategic planning management	Correlation Coefficient	.377**	1.000	-.066	-.458**	-.716**
	Sig. (2-tailed)	.000	.	.423	.000	.000
	N	148	148	148	148	148
Logistics management	Correlation Coefficient	-.247**	-.066	1.000	-.386**	-.087
	Sig. (2-tailed)	.003	.423	.	.000	.292
	N	148	148	148	148	148
Procurement management	Correlation Coefficient	-.402**	-.458**	-.386**	1.000	.152
	Sig. (2-tailed)	.000	.000	.000	.	.065
	N	148	148	148	148	148
Enterprise integration	Correlation Coefficient	-.546**	-.716**	-.087	.152	1.000
	Sig. (2-tailed)	.000	.000	.292	.065	.
	N	148	148	148	148	148

The coefficient of correlation between customer order management and strategic planning management is 0.377 which indicates that there is a moderate and positive relationship between them at 1% significant level. Since the P-value is lesser than 0.01, the null hypothesis is rejected. Therefore, there is a moderate and positive relationship between customer order management and strategic planning management.

Pearson Correlation Coefficient

H₀: There is no significant relationship between the critical success factors of Zuko Overseas Private Limited.

H₁: There is a significant relationship between the critical success factors of Zuko Overseas Private Limited.

The coefficient of correlation between top

		Correlations				
		Top management commitment	Employee skills	External and internal communication	Application of information technology	Quality of information in the system
Top management commitment	Pearson Correlation	1	.547**	-.018	.001	-.024
	Sig. (2-tailed)		.000	.830	.987	.770
	N	148	148	148	148	148
Employee skills	Pearson Correlation	.547**	1	.259**	.438**	.189*
	Sig. (2-tailed)	.000		.002	.000	.022
	N	148	148	148	148	148
External and internal communication	Pearson Correlation	-.018	.259**	1	.559**	.397**
	Sig. (2-tailed)	.830	.002		.000	.000
	N	148	148	148	148	148
Application of information technology	Pearson Correlation	.001	.438**	.559**	1	.577**
	Sig. (2-tailed)	.987	.000	.000		.000
	N	148	148	148	148	148
Quality of information in the system	Pearson Correlation	-.024	.189*	.397**	.577**	1
	Sig. (2-tailed)	.770	.022	.000	.000	
	N	148	148	148	148	148

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

management commitment and employee skills is 0.547 which indicates that there is a moderate and positive relationship between them at 1% significant level. Since the P-value is lesser than 0.01, the null hypothesis is rejected. Therefore, there is a moderate and positive relationship between top management commitment and employee skills.

Similarly, the coefficient of correlation between external and internal communication and application of information technology is 0.559 which indicates that there is a moderate and positive relationship between them at 1% significant level. Since the P-value is lesser than 0.01, the null hypothesis is rejected. Therefore, there is a moderate and positive relationship between external and internal communication and application of information technology.

Likewise, it can be inferred that the coefficient of correlation between application of information technology and quality of information in the system is 0.577 which indicates that there is a moderate and positive relationship between them at 1% significant level. Since the P-value is lesser than 0.01, the null hypothesis is rejected. Therefore, there is a moderate and positive relationship between application of information technology and quality of information in the system.

RESULTS AND DISCUSSION

- Employee commitment plays a vital role in the supply chain performance of the firm. Hence, it is suggested that the employees must be trained well so that the operations performed is correct, smooth and efficient.
- In adequate communication leads to difficulties in sharing information, which can result in inaccurate demand and inventory data. This, in turn, causes problems in order planning and can cause delays in the delivery of products. Hence, it is suggested that the company focuses on good communication with quality of information so that there is an improvement in work efficiency and customer satisfaction.
- Allocating funds by the top management will enable the employees to create and implement an effective Supply Chain Performance Management System (SCPMS). As the flow of funds increases, the commitment of top management towards SCPMS also increases. With the availability of funds, the development of SCPMS will be rapid.³ Hence, it is suggested that the

firm ensures top management commitment through effective financial commitment so as to improve supply chain performance.

- Managing the supply chain (SCM) involves addressing rising customer expectations and competing globally simultaneously. Hence, it is suggested that the company focuses on advancement of Information Technology (IT) methods and strategies since it plays a key role in facilitating the integration of supply chains into value systems.
- IT practices and techniques plays a crucial role in gaining a competitive advantage based on supply chain management.⁴ Hence, it is suggested that the company invests and adopts various technology enablers to overcome the risks and challenges of supply chain management. This would also lead to higher profitability and increase the firm's efficiency of performance.

CONCLUSION

Evaluating the performance of a supply chain can help identify issues and opportunities for improvement. To gain control and understanding of your supply chain, it is crucial to have a strategy and measure key aspects. By implementing the right processes, employing the right people, and utilizing technology effectively, a company can create a competitive advantage not just for today, but also for the future. Neglecting to do so may result in losing out to competitors. The success of a supply chain depends on the interplay between processes, people, and technology. This combination provides clarity of purpose for the company and enables all involved parties to understand what is expected of them. Furthermore, having these three elements in place can help companies handle exceptions and adapt to changes more nimbly. By having clear metrics that are applicable throughout the organization, all stakeholders can work together to create a coordinated and unified

effort that leverages supply chain management to drive customer satisfaction, productivity, and competitive advantage.

To manage the supply chain effectively, organizations must in corporate suitable supply chain strategies into their supply management chain practices.⁵ Effective supply chain management plays a crucial role in establishing and maintaining a competitive advantage in the market place. According to the study, the most significant factors that predict supply chain performance are strategic partnerships with suppliers, customer relationships, and information sharing. It is essential to note that a supply chain management strategy that is not implemented into the management practices cannot improve supply chain performance. Therefore, integrating supply chain management strategies into supply chain management practices is necessary to achieve optimal results.

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