



A Study on Supply Chain Issues Faced by Food Manufacturing Companies in Coimbatore

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Abstract. The purpose of this research is to learn more about the supply chain problems that food producers—more especially, those in the Coimbatore district—face. This study's main goal is to identify the supply chain issues that food manufacturers confront, including issues with transportation, contemporary technology, inventory and warehouse management, and sustainable practices that have an impact on supply chain operations. The foundation of this analysis was constructed using both descriptive and analytical research designs. Stratified sampling, which divides the population into smaller groups or strata, was used to choose the respondents. Anova, correlation, ranking analysis, and basic percentage analysis were used to examine 114 sample responses. This study aids in the understanding of the problems faced by food manufacturers.

Index Terms- Business, Supply Chain Management Issues

I. Introduction

Coimbatore's food manufacturing industry has grown significantly in recent years, significantly boosting the local economy. However, this expansion has also brought with it a variety of supply chain challenges that are impacting the sustainability, dependability, and efficiency of the sector's operations. Understanding and resolving these issues is essential to sustaining growth and ensuring that consumers may obtain food products that are safe and of high quality.

Every stage of the process involves multiple partners, each with specific objectives and constraints, from locating raw materials to delivering finished goods. Coordination of these varied groups presents logistical issues that often lead to inefficiencies, delays, and increased costs. Moreover, the lack of transparency and communication among stakeholders exacerbates these problems.



II. Statement of the Problem

Significant challenges in the food manufacturing industry's supply chain hinder the industry's overall expansion and sustainability, jeopardize the quality of its output, and reduce operational effectiveness in Coimbatore. This industry plays a vital role in the local economy, however these supply chain issues are not adequately managed. This makes it more difficult for the sector to compete, grow, and attract new clients. As a result, the primary focus of this study is to fully identify and assess the supply chain issues that Coimbatore's food producers are dealing with, with a particular focus on understanding the root causes, manifestations, and implications for the industry. In order to effectively address these difficulties, the goal of this research is to provide decision-makers, practitioners, and stakeholders with useful insights and recommendations.

Objectives of this Study

- To identify the issues faced by food manufacturer's supply chain issues in Coimbatore.
- To determine the issues such as transport, technology, warehouse and inventory, and sustainability which factors affect the supply chain the most.

III. Research Methodology

- **Research Design:** Descriptive research and Analytical research designs
- **Area of the Study:** Coimbatore city
- **Sampling Technique:** Stratified sampling
- **Data Collection:** Primary and secondary data
- **Sample Size:** 114
- **Tools used for Analysis:** Simple percentage analysis, Ranking and factor analysis.

IV. Review of Literature

Senthilkumar and Rajendran(2020) Examine How Innovation and Technology Adoption Might Help Food Firms in Coimbatore Overcome Supply Chain Difficulties

They talk about how supply chain visibility, traceability, and efficiency may be improved by technologies like blockchain, the Internet of Things (IoT), and data analytics, which will eventually result in cost reductions and higher-quality products. Gupta and colleagues (2019) develop into the fragmented nature of the supply chain in the food manufacturing industry, highlighting the role of multiple intermediaries and stakeholders in procurement, production, and distribution processes. They discuss how this fragmentation leads to inefficiencies, delays, and increased costs, impacting the overall performance of manufacturers in Coimbatore.



Table 1: (Simple percentage analysis)

Number of experience of the respondent			
1	1-5 years	37	32.5
2	6-10 years	45	39.5
3	11-15 years	9	7.9
4	More than 15 years	23	20.2
Annual turnover of the company			
1	1-2 crores	48	42.1
2	2-3 crores	54	47.4
3	above 3 crores	12	10.5
What factors contribute most to delays in supplier deliveries?			
1	Transport issues	21	18.4
2	Production bottlenecks	33	28.9
3	Communication breakdowns	43	37.7
4	Unforeseen circumstances (weather, natural disasters)	17	14.9
What are the challenges faced in transporting food products?			
1	Cost	30	26.3
2	Reliability	27	23.7
3	Timeliness	24	21.1
4	Temperature control	33	28.9

Interpretation

From the above table, the majority of the respondent 39.5% have 6-10 years of experience, 47.4% of the respondents annual revenue of the company, 37.7% of the respondents insists that communication breakdowns factors contribute most to delays in supplier deliveries, and 28.9% of the respondents have temperature control as the main challenges faced in transporting food products.

Friedman Test

Interpretation

The above table shows the mean score analysis on challenges affecting the supply chain. It shows that advanced technologies are ranked first which affects the supply chain most and the inefficient labour force is ranked fifth.

It is interpreted that advanced technologies (3.39) impose the first rank, which implies that the issues that affect the supply chain factor and inefficient labour force are the least ranked (2.05).



Table 2: (Ranking method)

Descriptive Statistics					
Factor	N	Minimum	Maximum	Mean	Rank
Rank (1-6) which supply chain factor challenges you the most [Inventory maintenance]	77	1.00	5.00	3.04	IV
Rank (1-6) which supply chain factor challenges you the most [Warehouse facilities]	77	1.00	5.00	3.24	III
Rank (1-6) which supply chain factor challenges you the most [Advance tech2logies]	77	1.00	5.00	3.39	I
Rank (1-6) which supply chain factor challenges you the most [Inefficient labour force]	77	1.00	5.00	2.05	V
Rank (1-6) which supply chain factor challenges you the most [Transport facilities]	77	1.00	5.00	3.28	II

- **H0:** There is no difference between issues related to supplier and number of years experience in industry.
- **H1:** There is a difference between issues related to supplier and number of years experience in industry.

Table 3: ANOVA

ANOVA					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.998	3	.666	2.707	.049
Within Groups	27.061	110	.246		
Total	29.060	113			



Interpretation

The significance value of 0.049 is less than 0.05. Hence, we reject the null hypothesis, and there is a significant difference between number of years experience in industry and supplier issues related to supply chain management in food industry.

Findings for Simple Percentage Analysis

It is found that, the majority of the respondent 39.5% have 6-10 years of experience, 47.4% of the respondents annual revenue of the company, 37.7% of the respondents insists that communication breakdowns factors contribute most to delays in supplier deliveries, and 28.9% of the respondents have temperature control as the main challenges faced in transporting food products.

Findings of Ranking Analysis

It is found that the mean score analysis on challenges encountered food supply chain management. It shows that advance technologies is ranked first and is mostly an agreed barrier, and inefficient labour force is ranked fifth.

Findings for Anova

It is found that using anova there is a significant difference between issues related to supplier issues with years of experience in industry.

Suggestions

- Investing in better transportation, storage facilities, and inventory management technologies can increase the efficiency of the supply chain.
- Regularly carry out market research to gain insight into consumer trends and preferences, which will enable more focused product creation and marketing tactics.
- Adopt sustainable procedures for production, packaging, and delivery to lessen your impact on the environment and attract environmentally concerned customers.
- To prevent any legal difficulties, stay informed about food safety rules and make sure you are fully compliant. Encourage cooperation with nearby farmers and suppliers to guarantee a consistent and enduring source of raw materials.

V. Conclusion

The supply chain in Coimbatore's food industry is fragmented, leading to inefficiencies and delays in procurement, production, and distribution processes. Inadequate infrastructure such as storage facilities, transportation networks, and cold chain systems hinders the smooth flow of goods within the supply chain, causing bottlenecks and increased costs. Maintaining consistent quality standards throughout the supply chain is a significant challenge due to varying supplier capabilities, lack of standardized processes, and inadequate monitoring mechanisms. Despite the challenges, there are opportunities for innovation and growth in Coimbatore's food supply



chain, particularly through the adoption of digital technologies, strategic partnerships, and proactive risk management strategies.

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