



# SUPPLY CHAIN MANAGEMENT (SCM) PRACTICES AND ITS EFFECTS ON TEXTILE INDUSTRIES IN COIMBATORE DISTRICT

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## ABSTRACT

Supply Chain Management (SCM) comprises of a variety of activities, like inbound and outbound transportation management, warehousing, materials handling, order fulfillment, network design, inventory management, supply/demand planning, customer service, sourcing and procurement and packaging. India is one of the global manufacturing hubs in textile industry; increasing demand in domestic and international markets is opening a new world of opportunities for the Indian Industry markably from Coimbatore region of Tamil Nadu. The Textile industry includes the long chain such as raw materials, complement and clothing production. SCM is considered as a conventional management tool for manufactures to improve the product quality, to reduce their product and service cost and to shorten their product delivery time in a highly competitive market. Businesses should be more involved in how their suppliers and customers do the business, they need to focus on process that has an impact on enhancing Supply Chain Management performance such as where materials come from, how their suppliers' products are designed and assembled, how products are transported and stored and what consumers really wants. This study is done to emphasize the Supply Chain Management Practice and its effect on Textile Industry in Coimbatore district.

**Key Words:** Supply Chain Management (SCM), Textile industry, Transport management and Warehousing.

## INTRODUCTION

India is placed second behind China in the production of textiles and garments and also India is the world's 3rd largest producer of cotton and the second biggest consumer after China. The Indian textile industry is very diverse and highly complex, the strength of this industry arises out of its strong production bases location all over the nation. A wide range of fibers / yarns from the natural fibers like cotton, jute, silk and wool to synthetic /man-made fibers like polyester, nylon, viscose and acrylic are extremely available in the country. The textile industry is a long network which includes the raw materials, production, clothing production, complement production, and many more. The Indian textile industry gives employment for both unskilled and skilled labor across the country by offering direct employment to over 35 million in the country. About 27% of the foreign exchange earnings come from the export of textiles and clothing alone<sup>1</sup>.

A supply chain is characterized by the flow of goods, services, money, and information both within and among business entities including suppliers, manufacturers, and customers. It also includes all types of organizations engaged in transportation, warehousing, information processing, and materials handling. Sourcing, procurement, production scheduling, manufacturing, order processing, inventory management, warehousing, and, finally, customer service are the functions performed throughout the supply chain. The ultimate goal of SCM is to meet customers demand more efficiently by providing the right product, in the right quantity, at the right location, at the right time, and in the right condition, the textile supply chain is a long, complex, fragmented and unorganized sector in our country<sup>2</sup>.

## STATEMENT OF THE PROBLEM

Indian garment and textile industry is present at the top of the garment sector in the global market, but the major problem is India is full of diversities and faces many infrastructural issues and different stature of players involved at each and every level; these issues have their impact on the supply chain activities in textile industries. Another important issue is the competition where the Indian industry generally faced competition from both domestic and foreign firms. The clothing and textile industry is always has the highest amount of political scrutiny and the Industry is also sculptured by the international trade agreements. Because of the number of small firms and subcontractors active in the area makes the job of estimating the number of people working in these sectors is extremely difficult. The Indian Textile Industry, being one of the oldest and important sectors earns lot of foreign exchange and employs a considerable percentage of population from both urban and rural areas. Exports of cotton have emerged has a major source of foreign exchange earnings for the country<sup>3</sup>.

<sup>1</sup> Allwood J. M., Laursen, S. E., Malvido de Rodríguez, C., & Bocken, N. M. P. *Well dressed? The present and future sustainability of clothing and textiles in the United Kingdom*. Cambridge: University of Cambridge, Institute for Manufacturing, 2006.

<sup>2</sup> Ahn, S. K., Kim, H. J. and Forney, J. A. (2010), "Fashion Collaboration or Collision?" *Journal of Fashion Marketing and Management*, Vol. 14 No. 1, pp. 6-20.

<sup>3</sup> Aggarwal, S. (1997), "Flexibility Management: the Ultimate Strategy", *Industrial Management*, 39(1), pp.26-31.

The supply chain of a typical textile industry consists of: Raw materials, Ginning facilities, spinning and extrusion processes, processing sector, Weaving and knitting factories, Garment manufacturing. The driver behind Supply Chain Management is to remove inefficiencies, excess costs and excess inventories from the supply pipeline which extends from the customer back through his suppliers and through his suppliers' suppliers and so on back. By having the program driven by the customer, it is hoped that inventories, caused by uncertainties and slow response, will be significantly eliminated. While there are sales incentives to major suppliers with the carrot of category management or similar programs, the success of supply chain management rests with logistics. The functional areas of Logistics are; Network Design, Information Technology, Transportation, Inventory and Storage, Warehousing, Materials Handling, Loading and unloading, Packaging and Re-packaging<sup>4</sup>.

### **NEED OF THE STUDY**

Supply chain management is more and more recognized as a strategic weapon, since globalization forces companies reduce costs and increase efficiency. The strategic choices include; the selection of goals and objectives; the choice of products and services to offer; the design and configuration of policies determining how the firm positions itself to compete in the product market. Indian textile Industry is also largest employer after agriculture of workers directly and indirectly. Due to ethnic diversity and cultural multiplicity besides racial traces in India's hinterland, several designs and variety of costumes and apparels are used that enrich Indian textile garments design possibilities. Indian textile Industry had been plagued by obsolescence, labor problems, raw material vagaries and lack of modernization including that of spindles. The post fabric stage processing technology has also been lagging but is now coming up fast with infusion of textile processing technology<sup>5</sup>.

### **SCOPE OF THE STUDY**

The study entitled "Supply Chain Management (SCM) practices and its effects on textile industries in Coimbatore District" encompasses the study in Coimbatore district only, the Textile industries mentioned in this study includes the textile industries operating in the study area alone.

### **OBJECTIVES OF THE STUDY**

1. To Identify the Supply Chain Management practices followed by Textile industry
2. To analyse the effect of SCM in textile industries.

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<sup>5</sup> Manoj Vaish, Rajesh Dubey. *Emerging Textile SMEs of India*. [http://www.dnb.co.in/SMEs\\_textile/overview.asp](http://www.dnb.co.in/SMEs_textile/overview.asp) (12 April 2012).

## METHODOLOGY

**Table 1**  
**Distribution on Research methodology**

Sl.No	Research Components	Description of the study
1.	Type of research	Descriptive research
2.	Research approach	Survey study method
3.	Research instrument	Interview Schedule
4.	Data source	Primary and Secondary
6.	Sampling method	Stratified Convenient sampling method
7.	Sample unit	Textile industries (25)
8.	Sampling size	Owners 25
9.	Sample area	Coimbatore
10.	Statistical tools (SPSS)	1.Percentage analysis
		2.Weighted Average Score(WAS)
		3.Chi-Square
		4.Factor Analysis

**Table 2**  
**Distribution on Sample units and Sample size**

Sl.no	Textile industries	Sample size (Owner)
1	Champa textile mills ltd	1
2	Dhivya textile industries	1
3	DS textile industry	1
4	ETI electro textile industry	1
5	Eurokone textile industries	1
6	Focus textile	1
7	General textile industries	1
8	Global textile alliance industries	1
9	Gr textile industries	1
10	Hindustan textiles	1
11	Jagannath textile company private limited	1
12	Rajalakshmi textile industries	1
13	Rajave textiles pvt ltd	1
14	Ranjithaa textiles	1
15	Rupee textile	1
16	Sams textile industries	1
17	Sangeeth textile pvt ltd	1
18	Scm textile spinners	1
19	SDS textile industries	1
20	Sivasakthi textile industries	1
21	Sri Katteri textiles	1
22	Sri lyyan textile pvt ltd	1
23	Sri Ramakrishna textiles	1
24	Tex-tech industries	1
25	United textile industries	1
<b>Total</b>		<b>25</b>

## LIMITATIONS

- 1) Owners were not willing to disclose any detail as they had fear to disclose so they did not sincerely co-operate for data collection.
- 2) The survey is limited only to Coimbatore district.
- 3) Data provided by the respondent need not always be true as their perception can change based on new experience some people also will not say what they really want.

## REVIEW OF LITERATURE

**Zhou, H. & Benton, W. (2021)**, “Supply chain practice and information sharing”, the purpose of this study was to investigate the integration of information sharing and supply chain practice in supply chain management. Data from 125 North American manufacturing firms were collected. The results showed that (1) effective information sharing significantly enhances effective supply chain practice; (2) supply chain dynamism has significant positive influence on effective information sharing as well as effective supply chain practice. Supply chain dynamism has more influence on information sharing than supply chain practice; (3) and effective supply chain practice becomes more important when the level of information sharing increases. The findings show that both effective information sharing and effective supply chain practice are critical in achieving good supply chain performance. This study suggests that firms do not have to excel in all dimensions of supply chain processes in order to achieve superior delivery performance. The regression analysis shows that only delivery practices (not the supply chain planning or JIT production) have significant positive influence on delivery performance<sup>6</sup>.

## FRAMED HYPOTHESIS

- There is no significant relationship between Supply Chain Management Practices and Organisational Performance (effect).

<sup>6</sup> Zhou, H. and Benton W. (2021). Supply chain practice and information sharing. *Journal of Operations Management* (25), pp.1348-1365.

## ANALYSIS OF DATA

**Table 3**  
**Distribution on Demographic profile of respondents (Sample size: 25)**

Sl.no	Profile	Particulars	No. of respondents	Percentage
1	Age	Below 20	2	11
		21-30	5	20
		31-40	8	32
		41-50	6	22
		Above 51	4	15
2.	Gender	Male	20	83
		Female	5	17
3.	Marital status	Married	15	63
		Un married	10	37
4.	Qualification	Upto HSE	1	6
		Upto UG	17	66
		Upto PG	4	15
		Professionals	2	7
		Diploma	1	6
5.	Annual income	Below 3,00,000	12	47
		3,00,001 – 6,00,000	8	32
		6,00,001-10,00,000	4	16
		Above 10,00,001	1	5
6.	Nature of business	Manufacturing	18	69
		Trading	7	31
7.	Years of existence	Less than 5 years	4	14
		6 to 10 yrs	7	28
		11 to 15 yrs	10	36
		Above 15yrs	6	22
8.	Legal ownership status	Sole ownership	10	37
		Partnership/joint	5	18
		Company	5	21
		Family business	6	24

Source: Primary Data

**Table 4**  
**Supply Chain Management Practices**

Sl.no	SCM Practices	SA	A	N	DA	SDA	WAS	Rank
1	SCM-P1	64	35	26	1	0	0.46	2
2	SCM-P2	58	33	25	1	1	0.44	3
3	SCM-P3	33	39	29	6	1	0.39	6
4	SCM-P4	38	37	28	4	2	0.40	5
5	SCM-P5	48	32	24	2	1	0.42	4
6	SCM-P6	30	35	26	5	2	0.39	6
7	SCM-P7	75	27	21	2	1	0.49	1

Source: Primary Data

## Testing of hypothesis (Chi-square)

**Table 5**  
Distribution on overall result of Chi-square @ 5% level of significance

Independent variables	Dependent variables	Sig value	Chi-square value	d.f	Result
Age	SCM Practices	.035	40.113	36	Significant
Gender		.003	16.919	9	Significant
Marital status		.000	16.919	9	Significant
Qualification		.000	50.998	36	Significant
Annual income		.000	28.869	27	Significant
Nature of business		.000	28.869	9	Significant
Year of existence		.000	50.998	27	Significant
Legal ownership status		.003	40.113	27	Significant

Source: Computed Data

**Table 6**  
Distribution on factor analysis of effects with SCM Practices

Sl.no	Organisational performance (effects)	E1	E2	E3	E4	E5
	SCM Practices					
1	Strategic supplier partnership	0.792	0.616	0.523	0.775	0.600
2	Customer relation practices	0.791	0.578	0.732	0.759	0.529
3	Information sharing	0.791	0.519	0.798	0.762	0.452
4	Lean system	0.425	0.639	0.719	0.792	0.516
5	Information communication technology (ICT)	0.695	0.602	0.541	0.791	0.578
6	JIT manufacturing	0.653	0.666	0.666	0.691	0.919
7	Outsourcing	0.619	0.625	0.665	0.825	0.539
	<b>h<sup>2</sup></b>	<b>0.703</b>	<b>0.675</b>	<b>0.742</b>	<b>0.797</b>	<b>0.568</b>
	Percentage of variation	12.891	9.154	13.358	14.598	8.181
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalisation, A Rotation converged in 5 iterations						

Source: Computed Data

## FINDINGS OF THE STUDY

**Weighted Average Score (WAS):** For the purpose of analysis the factors were coded as SCM-P1: Strategic supplier partnership, SCM-P2: Customer relation practices, SCM-P3: Information sharing, SCM-P4: Lean system, SCM-P5: Information communication technology (ICT), SCM-P6: JIT manufacturing and SCM-P7: Outsourcing. It was found that SCM-P7 is ranked first followed by SCM-P1 and SCM-P3 and 6 ranked last.

**Chi-square:** : with regard to the chi-square test at 5% and 1% level of significance, it is found that the p-value is less than 0.05 thus it is concluded that each variable had significant relationship, that is the null hypothesis was rejected.

**Factor Analysis:** The component factor loading; the component identified for loading is Organisational performance (effects) [E1 to E5] E1: Finance, E2: Operation, E3: Supplier, E4: Customer and E5: Growth. The factor for loading with the component is SCM Practices with 7 iterations are allowed for this factor to load with the component, All the 5 sample units showed positive loading with the component, therefore it can be concluded that there is positive loading at 0.01 and 0.05 level of significance for the factors and the highest loaded iteration is E4 (Customer) with  $h^2$ : 0.797.

**Other findings:** Supply chain practices of strategic supplier partnership, customer relationships, Information sharing among partners, lean system, Information communication Technology (ICT) activities as well as Outsourcing activities are significantly influencing Organisational performance. Results also reveals that of strategic supplier partnership, lean system, Information communication Technology (ICT) activities as well as Outsourcing activities are highly influencing on financial performance because they help to organisation for reducing cost either by outsourcing some activities or by keeping partnership with raw material suppliers and availing immediate services as and when required so reduce inventory cost as well as getting benefit of discount in price. Study indicates that of lean system, Information communication Technology (ICT) activities, JIT Manufacturing as well as Outsourcing activities are influencing on operational Performance. Strategic supplier partnership, customer relationships, Information sharing among partners, lean system, JIT Manufacturing are influencing on customer related performance. Information communication Technology (ICT) activities, JIT Manufacturing as well as Outsourcing activities are also impacting on supplier related Performance. In short, major supply chain practices are highly as well as positively influencing the organisational Performance. Majority of the respondents believe that they are managing their supply chain successfully; however they are facing some serious problems regarding the late delivery by the suppliers, missing of the goods in the warehouse, loading goods in the wrong truck, receiving in correct goods. Hence they need to adopt the better Supply Chain Management practices to overcome the frequently problems faced by them and improve organisational performance as well.

## CONCLUSION

The Indian Textile Industry is going towards having an efficient supply chain strategy for gaining competitive advantage. Supply Chain collaboration is vital factor of it. The factors of Supply Chain management includes dimensions, like first generation entrepreneur, online supply of goods, possessing very good market knowledge and supply of goods, upto date knowledge about the industry, taking overdraft for business and the last one is the supplier relationship, their ability to save money. From business type supplier relationship contributes to competitive advantage significantly. The technological and managerial assistance along with exchange of information during product development and production stages needs more attention. The study proves that competitive advantage through supply chain management is the way to move forward for the textile industries. The results highlights that technological assistance is required for sustainable competitive advantage<sup>7</sup>.

<sup>7</sup> Devaraja T.S, *Indian Textile and Garment Industry- An Overview*, Indian Council of Social Science Research, Ministry of Human Resource Development, Government of India, New Delhi, May 2011.



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