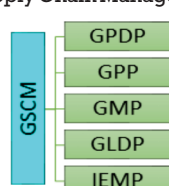


	ORIGINAL RESEARCH PAPER TEXTILE EXPORTERS PERCEPTION IN ADOPTION OF GREEN SUPPLY CHAIN MANAGEMENT PRACTICES IN TIRUPUR DISTRICT	Commerce KEY WORDS: Green Supply Management Practices, Green Process Design Practices (GPDP), Green Procurement Process (GPP)
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ABSTRACT	The adoption of Green Supply Chain Management (GSCM) strategies has become a significant context in attaining environmental sustainability in various sectors which includes textiles. The focus of this research is to examine the components that influence the adoption of GSCM practices by textile exporters in Tirupur District, India, through analysing various components of GSCM practices such as Green Process Design Practices (GPDP), Green Procurement Process (GPP), Green Manufacturing Practices (GMP), Green Logistics and Distribution Practices (GLDP), Internal Environmental Management System Practices (IEMP), Textile Exporters. Tirupur, being one of the world's largest textile export hubs, has been facing pressure to collaborate sustainable practices into their supply chain as a response to rising environmental concerns and the demand from worldwide markets. This research examines major factors such as environmental awareness, government legislation, technical improvements and sustainable supply chain collaboration and investigates the effect on adoption process. This research's results are bound to assist the policymakers and leaders of the industry to better understand the challenges and opportunities that textile exporters confront when collaborating green practices as well as provide strategic suggestions to enhance the adoption of sustainable practices in the textile sector.	
BACKGROUND OF THE STUDY	Green Supply Chain Management (GSCM) strategies have become an important approach for firms around the world, especially in sectors with notable environmental impact such as textiles. The textile industry in Tirupur, Tamil Nadu, which is one of India's important textile export centers is progressively focusing on sustainability as a response to increasing environmental concerns and global level demand for eco-friendly products. GSCM requires collaborating environmentally responsible activities throughout the supply chain, which includes all the processes from procurement of raw material till delivering the products to the end consumers. Regardless of the benefits of GSCM, the acquisition process is complex and complicated by a range of factors which include organizational abilities, regulatory pressures, financial limits and technical enhancement. This study gives insight that can assist both industrialists and regulators to assist the adoption of green practices in the region by recognizing the factors that drive or delay the application of sustainable practices across the textile supply chain.	
Literature Review	Ghufran Saed Hijjawi (2022)¹ "Impact of Green Supply Chain on Supply Chain Performance" Performance excellence necessitates special practices in supply chain management, such as focusing on quality management, customers, and suppliers. As a result, the concept of GSC emerged in the 1990s. GSC is a managerial strategy used for environmental business mentoring through planning, purchasing, manufacturing, and delivering the product to the end customers. Donghyun Choi (2021)² "Supply Chain Governance Mechanisms, Green Supply Chain Management, and Organizational Performance." Although businesses understand the necessity of green supply chain management (GSCM), they are confused of how to control their green operations beyond their own facilities. Creating a green supply chain requires the participation of all associated firms throughout the supply chain. However, partner companies differ in size, conditions, capacities, and even sectors. It is difficult to persuade people to participate in green activities. Many small and medium-sized firms (SMEs) are hesitant to undertake green projects due to the large financial investment required. This paper conducts an empirical investigation into the causal relationship between the	
	partnership governance system and GSCM success. Supamit Srisawat, Nongson Srisawat (2020)³ The Topic of "The effect of Green Supply Chain Management Practise on the Sustainable Performance of the Textile Industry In this study, the effect of green supply chain management techniques on the sustainable performance of the textile sector is examined. A positive and significant association exists between green manufacturing and sustainable performance. In essence, green design, green distribution, eco design, and green production all have a positive impact on the textile business.	
	STATEMENT OF THE PROBLEM The textile industry in Tirupur, India confronts crucial environmental challenges, which requires the adoption of sustainable approaches. In spite of the benefits of Green Supply Chain Management (GSCM), many textile exporters belonging to Tirupur have been slow-moving when embracing these procedures restricting their potential to reduce the environmental impact, enhance the performance of the company. The aim of this study is to investigate the relationship between organizational structure, external factors and supply chain which influences the adoption of GSCM techniques among textiles exporters in Tirupur, with the aim of eventually developing strategies for encouraging sustainable practices in the textile sector.	
	Research Gap And Conceptual Frame Work The previous studies were mostly related to the any of the particular process of green supply chain management practices or wholly the green supply chain practices but in this study the GSCM practices were analysed under various categories such as Green Process Design Practices (GPDP) , Green Procurement Process (GPP), Green Manufacturing Practices (GMP), Green Logistics and Distribution Practices (GLDP), Internal Environmental Management System Practices (IEMP), Barrier of Supply Chain Management (BSCM), Drives of Supply Chain Management (DSCM).	
		
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Objectives

- To know the Green Supply Management Practices such as Green Process Design Practices (GPDP), Green Procurement Process (GPP), Green Manufacturing Practices (GMP), Green Logistics and Distribution Practices (GLDP), Internal Environmental Management System Practices (IEMP) adopted by the textile exporters in Tirupur District.
- To understand the perception of textile exporters on Barrier of Supply Chain Management (BSCM) and Drives of Supply Chain Management (DSCM).

Research Methodology

Research Method	Both Exploratory and Descriptive
Sample and Area of study	Textile Exporters in Tirupur District
Sampling Method	Random Sampling
Population	1300 (Source: Tirupur Exporters Association - TEA)
Sampling size	93 (Using Roasoft @ 5%)
Source	Primary Data
Tools used for collection	Questionnaire
Statistical Tools	Percentage analysis

Green Process Design Practices (GPDP) Adopted By Textile Exporters In Tirupur District

Table 1: Green Process Design Practices (GPDP)

Variable	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	No	%	No	%	No	%	No	%	No	%
GPDP 1	11	12	24	25	15	16.1	32	34.4	11	12
GPDP 2	18	20	19	20.4	21	22.5	16	17.2	19	20.4
GPDP 3	6	6.4	4	4.3	47	50.5	16	17.2	20	21.5
GPDP 4	14	15.0	36	39	15	16.1	15	16.1	13	14
GPDP 5	46	49.4	13	13.9	8	8.6	10	11	16	17.2
GPDP 6	15	16.1	18	19.3	26	28	32	34.4	2	2.1
GPDP 7	4	4.3	6	6.4	44	47.3	29	31.1	10	11

Source: Primary Data

Table 1 explains the green process design practices adopted by the textile exporters in Tirupur District. Most of the respondents are agree with the adoptions of green design practices. Most of the respondents are agree that process is designed for optimum energy consumption of material / energy (GPDP 1) and Minimal usage of natural resources (GPDP 6) as a practice adopted under green process design practices. The more numbers of respondents are neutral for the factors includes Process design avoids or reduces use of hazardous substances (GPDP 3), Co-operation & feedback sought from customers in developing eco-process design (GPDP 7). The respondents are disagreeing with the adoption of practices includes Process design reduces wastage (solid, liquid & gas) (GPDP 4) and Process design meets environment & safety standards (GPDP 5).

Green Procurement Process (gpp) Adopted By Textile Exporters In Tirupur District

Table 2: Green Procurement Process (gpp)

Variable	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	No	%	No	%	No	%	No	%	No	%
GPP 1	6	6.4	15	16.1	15	16.1	44	47.3	13	14
GPP 2	5	5.3	11	12	26	28	19	20.4	32	35
GPP 3	8	9	14	15	38	41	11	12	22	24
GPP 4	8	9	45	49	22	24	8	9	10	11
GPP 5	32	35	20	21.5	16	17.2	17	18.2	8	9
GPP 6	30	32.2	8	9	20	21.5	27	29.3	8	9
GPP 7	2	2.1	10	11	32	34.4	42	45.1	7	7.5
GPP 8	3	3.2	10	11	34	36.5	21	22.5	25	27

Source: Primary Data

Table 2 shows the green procurement process adopted by the textile exporters in Tirupur District. Most of the respondents are agree with the adoptions of green procurement process. Most of the respondents are agree with the factors such as Environmental performance is an important criteria in supplier selection (GPP 1), Provide product specifications to suppliers that include environmental requirements for purchased item (GPP 2), Educate and assistance provided to suppliers on environment matters in order to increase supply chain efficiency (GPP 7) and Communication regarding environment procurement criteria/ requirements to marketing staff, employees, stake holders, and customers (GPP 8). The more numbers of respondents are neutral for Cooperate with suppliers for environmental procurement (GPP 3). More number of respondents are strongly disagreed with factors such as Procure from ISO certified suppliers (GPP 5) and Work with other business functions to discuss and improve purchasing procedures (GPP 6). More number of respondents are disagreeing with the factor firm has a cell for environmental audit of supplier's internal environmental management (GPP 4).

Green Manufacturing Practices (GMP) Adopted By Textile Exporters In Tirupur District

Table 3: Green Manufacturing Practices (GMP)

Variable	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	No	%	No	%	No	%	No	%	No	%
GMP 1	6	6.4	15	17	13	14	48	51.1	11	12
GMP 2	2	2.1	22	24	27	29	23	25	19	20.4
GMP 3	13	14	16	17.2	35	38	5	5.3	24	26
GMP 4	15	16.1	29	31.1	28	30.1	11	12	17	18.2
GMP 5	37	40	16	17.2	11	12	13	14	16	17.2
GMP 6	14	15	18	19.3	28	30.1	29	31.1	4	4.3
GMP 7	9	10	11	12	34	36.5	26	28	13	14
GMP 8	8	9	13	14	34	37	15	16.1	23	25
GMP 9	7	7.5	16	17	21	22.5	22	24	27	29
GMP 10	9	10	19	20.4	20	21.5	29	31.1	16	17.2
GMP 11	3	3.2	15	17	41	44	24	26	10	11

Source: Primary Data

Table 3 shows the green manufacturing practices adopted by the textile exporters in Tirupur District. Most of the respondents are agree with the adoptions of green manufacturing practices. Most of the respondents are agree with the factors such as Product have the possibility of being recycled, reused (GMP1), Manufacturing activities ensure less usage of hazardous materials in the process (GMP 2), Optimizes the use of energy generated from renewable resources in manufacturing operations (GMP 5), Minimizing toxic / hazardous waste during manufacturing (GMP 6), Selection and use of energy efficiency equipment and fixtures (GMP 9), Development of a prevention program to identify and eliminate sources of pollution (GMP 10), Natural light usage on the shop floor (GMP 11). The more numbers of respondents are neutral for Designers are using product life cycle approach to improve the environment performance and production efficiency of the product (GMP 3), Amount of goods delivered on time (GMP 7), Waste management program for compliance with all applicable regulations (GMP 8), Development of a prevention program to identify and eliminate sources of pollution (GMP 10), and Natural light usage on the shop floor (GMP 11). More number of respondents are strongly disagreed with factors such as measures to reduce material, water & energy used in manufacturing (GMP 4).

Green Logistics And Distribution Practices (GLDP) Adopted By Textile Exporters In Tirupur District

Table 4: Green Logistics And Distribution Practices (GLDP)

Variable	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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	No	%	No	%	No	%	No	%	No	%
GLDP 1	5	5.3	17	18.2	18	19.3	41	44	12	13
GLDP 2	3	3.2	19	20.4	25	26.8	21	22.5	25	5.3
GLDP 3	10	11	14	15	27	29	12	13	30	32.2
GLDP 4	12	13	30	32.2	19	20.4	19	20.4	13	14
GLDP 5	37	40	16	17.2	18	19.3	8	9	14	15
GLDP 6	16	17.2	15	16.1	31	33	26	28	5	5.3
GLDP 7	7	7.5	15	16.1	20	21.5	33	35.4	18	19.3
GLDP 8	8	8.6	11	12	27	29	24	26	23	25
GLDP9	13	14	12	13	22	24	21	22.5	25	27
GLDP 10	8	9	12	13	29	31.1	23	25	21	22.5
GLDP 11	9	10	15	16.1	27	29	22	24	20	21.5
GLDP 12	3	3.2	13	14	36	39	29	31.1	12	13

Source: Primary Data

Table 4 shows the green logistics and distribution practices adopted by the textile exporters in Tirupur District. Most of the respondents are agree with the adoptions of green logistics and distribution practices. Most of the respondents are agree with the factors such as Consider reducing greenhouse gas emissions emanating as a result of logistics activities (GLDP 1), Application of environmental issues in the design of logistics management (GLDP 3), Appointing of ISO certified logistics services providers (GLDP 6), Routing system to minimize travel distances (GLDP 7), Identification, collection & distribution of products / parts that will be recycled, reused (GLDP 9). The more numbers of respondents are neutral for Regularly optimizes the logistics system in cooperation with the transport services providers (GLDP 2), Logistics services providers selected on the basis of eco-friendly parameters (GLDP 5), Recollection planning for packaging material (GLDP 10), Reverse logistics applied in stock planning (GLDP 11), Minimizing the use of non-eco-friendly packaging is considered (GLDP 12). More number of respondents are strongly disagreed with factors such as Environmentally friendly facility location (GLDP 4).

Internal Environmental Management System Practices Adopted By Textile Exporters In Tirupur District
Table 5: Internal Environmental Management System Practices (IEMP)

Variable	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	No	%	No	%	No	%	No	%	No	%
BGSCM 1	5	5.3	15	16.1	13	14	46	49.4	14	15
BGSCM 2	4	4.3	19	20.4	27	29	23	25	20	21.5
BGSCM 3	8	8.6	15	16.1	34	36.5	8	9	28	30.1
BGSCM 4	13	14	42	45.1	13	14	10	11	15	16.1
BGSCM 5	48	52	11	12	16	17.2	9	10	9	10
BGSCM 6	13	14	20	21.5	29	31.1	26	28	5	5.3
BGSCM 7	6	6.4	10	11	30	32.2	28	30.1	19	20.4
BGSCM 8	8	8.6	13	14	29	31.1	25	27	18	19.3
BGSCM 9	5	5.3	13	14	26	28	23	25	26	28
BGSCM 10	6	6.4	11	12	35	38	26	28	15	16.1

Source: Primary Data

Table 5 shows the internal environmental management system practices adopted by the textile exporters in Tirupur District. Most of the respondents are agree with the adoptions of internal environmental management system practices. Most of the respondents are agree with the factors such as Commitment to green supply chain management y senior management (IEMP 1), Support for green supply chain management from junior & middle level managers / executives (IEMP 2), Induce total quality environmental management (IEMP 4), Provision of training in environmental management (IEMP 6), Environmental performances measures and monitoring (IEMP 9) Updating the current and proposed environmental regulations and legislations that may impact the business (IEMP 10). The more numbers of respondents are neutral for Cross functional co-operation for

environmental improvements (IEMP 3), Implementing of Environmental Management System (IEMP 7), Awareness of GSCM practices adopted by competitors (IEMP 8), Existence of environmental auditing program (IEMP 11). More number of respondents are strongly disagreed with factors such as Promotion of quality circles (IEMP 5).

Barrier Of Green Supply Chain Mangement (BGSCM) Adopted By Textile Exporters In Tirupur District
Table 6: Barrier Of Green Supply Chain Management (BGSCM)

Variable	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	No	%	No	%	No	%	No	%	No	%
DGSCM 1	3	3.2	18	19.3	11	12	49	53	12	13
DGSCM 2	4	4.3	13	13	31	34	21	22.5	24	26
DGSCM 3	9	10	15	16.1	35	38	7	7.5	27	29
DGSCM 4	12	13	38	41	23	25	6	6.4	14	15
DGSCM 5	50	54	13	14	7	7.5	11	12	12	13
DGSCM 6	12	13	20	21.5	36	39	20	21.5	5	5.3
DGSCM 7	9	10	10	11	29	31.1	34	36.5	11	12
DGSCM 8	8	9	11	12	29	31.1	27	29	18	19.3
DGSCM 9	9	10	7	7.5	40	43	16	17.2	21	22.5

Source: Primary Data

Table 6 shows the barriers of green supply chain management adopted by the textile exporters in Tirupur District. Most of the respondents are agree with the adoptions of barriers green supply chain management. Most of the respondents are agree Lack of resources (financial/ human) (BGSCM 1), Top management commitment (BGSCM 7), Middle management support (BGSCM 8), Effective communication (BGSCM 9). The more numbers of respondents are neutral for Short term planning over long term (BGSCM 2), Lack of market for recyclable products (BGSCM 3), Lack of information sharing between customer and supplier (BGSCM 6), Lack of Government legal enforcement (BGSCM 10). More number of respondents are strongly disagreed with factors such as Lack of knowledge about environmental impacts (BGSCM 4) and Lack of expertise from consultants or industry in the sector (BGSCM 5).

Drives Of Green Supply Chain Management (DRIVES) Adopted By Textile Exporters In Tirupur District
Table 7: Drives Of Green Supply Chain Management (DGSCM)

Variable	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	No	%	No	%	No	%	No	%	No	%
DGSCM 1	3	3.2	18	19.3	11	12	49	53	12	13
DGSCM 2	4	4.3	13	13	31	34	21	22.5	24	26
DGSCM 3	9	10	15	16.1	35	38	7	7.5	27	29
DGSCM 4	12	13	38	41	23	25	6	6.4	14	15
DGSCM 5	50	54	13	14	7	7.5	11	12	12	13
DGSCM 6	12	13	20	21.5	36	39	20	21.5	5	5.3
DGSCM 7	9	10	10	11	29	31.1	34	36.5	11	12
DGSCM 8	8	9	11	12	29	31.1	27	29	18	19.3
DGSCM 9	9	10	7	7.5	40	43	16	17.2	21	22.5

Source: Primary Data

Table 7 shows the drives of green supply chain management adopted by the textile exporters in Tirupur District. Most of the respondents are agree with the adoptions of drives green supply chain management. Most of the respondents are agree. Contribute to environmental protection (DGSCM 1), Regulations (DGSCM 7), Community/ environmental groups pressure (DGSCM 9). The more numbers of respondents are neutral for Reduction of waste (DGSCM 2), Reduction of environment risks (DGSCM 3), Meet market expectations (DGSCM 6) and Customer Pressure (DGSCM 8). More

number of respondents are strongly disagreed with factors such Cost benefits (DGSCM 4) and Image improvement (DGSCM 5).

Summary

The study highlights the importance of Green Supply Chain Management (GSCM) in promoting sustainability in Tirupur District's textile export business. The investigation finds that, while exporters recognize the benefits of GSCM, such as increased environmental performance, regulatory compliance, and market reputation, substantial hurdles remain. These include financial constraints, a lack of technical expertise, insufficient government assistance, and internal reluctance to change. Despite these challenges, significant incentives such as environmental concerns, customer demand, and competitive benefits motivate businesses to embrace sustainable practices. According to the report, targeted interventions including government incentives, industry alliances, and training programs can help accelerate the shift to greener supply chain models. By efficiently incorporating GSCM ideas, Tirupur's textile business may improve its global position, contribute to environmental conservation, and make sure long-term economic viability.

Keywords: Green Supply Management Practices, Green Process Design Practices (GPDP), Green Procurement Process (GPP), Green Manufacturing Practices (GMP), Green Logistics and Distribution Practices (GLDP), Internal Environmental Management System Practices (IEMP), Textile Exporters.

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