An analysis of the literature using a systematic approach on the growth of green supply chain management

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Abstract: Currently, the world is experiencing a sustainability crisis issues and businesses in developed nations are developing solutions to these problems by using Green Supply Chain Management (GSCM). Likewise, developing nations' industries are making an effort to implement GSCM for sustainable development. This paper addresses the current state of GSCM practises with respect to India and presents a thorough literature review of GSCM practices. PRISMA approach was employed for this investigation and looked at 81 GSCM research papers from journals with Scopus and Web of Science indexes, including 20 papers from Indian manufacturing industry. By evaluating a number of studies, both theoretical and practical, the papers provided here highlighted the critical success factors in implementation of green supply chain management and its barriers. Additionally, it shows a sharp growth in the number of empirical studies on GSCM during the past few years. This review article will aid managers, researchers, academics, and policymakers in studying GSCM practices in India and other developing countries.

Keywords: sustainable supply chain management, green supply chain management, PRISMA model, green valuechain.

Introduction

The public's knowledge of sustainability and climate change issues is currently rising quickly. growing consumer concern over the environment and pressure from government laws are influencing the industries to manage all operations from environmental perspectives (Mutingi et al., 2014). Additionally, in order to deliver environmentally friendly goods and services, industries are quickly modifying their sustainability plans and regulations. The implementation of GSCM is a vital issue for every industry and it has become an increasingly complex challenge for organizations globally (de Oliveira et al., 2018; Kot et al, 2019). Suppliers, consumers, governments, legal defense agencies are asking for solutions to create impacts on the activities of their production cycle (Jabbour et al., 2014). To gain a competitive advantage in the supply chain industry, many businesses are considering incorporating GSCM (Bititci et al., 2012). GSCM has drawn more attention as a result of its adoption of value creation initiatives for sustainability in business and the environment across the entire supply chain. A number of previous studies conducted a few reviews on GSCM (Soda et al., 2016; Islam et al., 2018; Micheli et al., 2020). Some other studies were conducted on sustainable supply chain (Fahimnia et al., 2015; 2018; Zhang & Yousaf, 2020), GSCM (Sarkis, 2003; Srivastava, 2007; Green et al., 2012; Tseng et al., 2019; Liu et al.,

2020), sustainable business (Bocken & Geradts, 2020), green marketing (Nekmahmud & Fekete-Farkas, 2020; Szczepańska-Woszczynaet al., 2016) and green business (Hasan et al., 2019; Urbański & Haque, 2020). Furthermore, some studies focused on the methodology part of GSCM literature (Soda et al., 2016), while recently, only a few studies (Bajdor & Grabara, 2011; Malviya & Kant, 2015; de Oliveira et al., 2018; Badi & Murtagh, 2019; Tseng et al., 2019) have focused on a systematic literature review paper on the entire field of GSCM in the global context. With various important industrial sectors, including textile, chemical, leather, plastic, and agriculture, India is a developing nation that is focused on industry and manufacturing. As GSCM is at the early stage in India, only a few studies on GSCM have been conducted in the context of this country in the textile, leather, chemical, agriculture, and food industries (Moktadir et al., 2018; Tumpa et al., 2019; Shohan et al., 2020; Habib et al., 2020).

This study evaluates earlier research done on GSCM to understand its present implications, challenges, key success factors, and prospects across many industries. Additionally, it explores how the GSCM is currently performing in developed nations and explains its implications in the context of developing countries. The PRISMA model for GSCM was first applied in this review study, which represents a fresh contribution in the context of India.

Literature review

Kelle and Silver talked about the usage of reusable products for business purposes in 1989, introducing the first green supply chain (GSC) idea. Businesses sparked to incorporate sustainability as a result of the 1980s quality revolution and 1990s supply chain revolution (Srivastava, 2007). Nevertheless, Navin Chandra (1991) first was introduced a green design for reducing the effect of product waste. Besides, several studies (Ashley, 1993; Richards & Allenby, 1994) were conducted for enhancing the green design framework. In the contemporary period, Webb (1994) also used the term GSC and indicated that this term originated from the concept of green purchasing. In a subsequent research published in 1996, the author adopted the phrase "Environmental Responsibility Manufacturing." Green operations in terms of reverse logistics concept were first introduced by Kelle and Silver (1989) and waste management by Roy and Whelan (1992), which came out of the GSCM literature. According to Handfield et al. (1997), GSCM includes design, procurement, production, packaging, logistics, and distribution. GSCM also successfully contributed to reduce waste, sustain the quality of product life and natural resources (Ashley, 1993; Srivastava, 2007; Lahkani et al., 2020). In the late 1990s, many scholars conducted comprehensive reviews of GSCM where topics suchas recycling in the supply chain, green planning, and manufacturing (Barros, Dekker & Scholten, 1998; Sarkis & Cordeiro, 2001; Pakurár et al., 2020) were presented thoroughly.

Green Supply Chain Management (GSCM) is an integration of sustainability issues in production, procurement, supply and distribution, sales, marketing, and relevant areas to enhance productivity and profitability (Srivastava, 2007; Green et al., 2012; Grabara et al., 2020). According to Darnall, Jolley & Handfield (2008), GSCM practices incorporate environmental activities to ensure eco-friendly products or services and to reduce costs in its value chain. The phrase "GSCM" stands for "reuse, reduce, rework, recycle, “refurbish," "reclaim," and "remanufacture," among other practises with the goal of achieving a GSCM waste minimization activity. GSCM includes the implementation and monitoring of environmental management programmes as well as further creating or controlling practices. Environmental concerns are taken into account in the GSCM, a synchronised supply chain. It also incorporates internal aspects of the business to bring efficiency and effectiveness in managing the information, material, and capital flows involving the purchase, production, and distribution to meet

stakeholder needs, toincrease the profitability and market competitiveness, and business resilience (Ahi & Searcy, 2013, Kozma, 2017; Małkus & Tyrańska, 2019). According to Malviya and Kant (2022), GSCM is a holistic approach that incorporates environmental awareness in a supply chain and supports firms to enhance their sustainability. Additionally, GSCM is a tool for strategic management to improve the manufacturing companies' environmental performance. Additionally, it enhances the performance of other sustainability goals (Hassan et al., 2021. Since 1997, it has been possible to discern a chronological change in the evolution of the meaning of GSCM. To increase environmental and social welfare, supply chain management (GSCM) currently encompasses a variety of sustainability challenges, incorporating green marketing, distribution, and production. Initially, GSCM only concentrated on green logistical issues.

Globally, GSCM is becoming more and more well-liked in every industry. During the last two decades, the concept of GSCM, which incorporates green design, reverse logistics, green operations, recycling, waste management, and green manufacturing were applied in various industries and academic sectors (Srivastava, 2007; Green et al., 2012; Hasan et al., 2019; Liu et al., 2020). For example, BMW and General Motors have used GSCM in the automobile industry (Thierry et al., 1995). Reverse logistics was also being used by companies like StorageTek, Hewlett Packard, and TRW in the supply chain, among others (Dube, Gawande, & Coe, 2011). GSCM is used in a wide range of industries throughout the world, including those that making chemicals, fast-moving consumer goods (FMCG), metals, textiles leather, electronics, plastic, pharmaceuticals, tourism, construction and more. Approximately 5,106 scholarly publications connected to the SCOPUS Journal have been published in GSCM during the course of the last ten years, according to a WoS search using the term "GSCM" Theoretical GSCM applications are consequently being expanded across all industries by researchers from around the world. Table 1 compares the quantity of publications that were released between 1975 and 2022 to demonstrate how research on GSC, GSCM, sustainable green supply chain management (SGSCM), green value chains and green business is being carried out.

Table 1. The total number of publications published in GSCM worldwide (in SCOPUS, SSCI, and ESCI)

Search Keywords in WoS	1975-2022	1990-2000	2001-2010	2011-2022
green supply chain management	3820	6	202	3612
green supply chain	5031	42	352	4637
Sustainable green supply chain	2043	2	97	1944
green value chain	3450	187	589	2674
sustainable business	14604	334	2330	11940
green business	4891	157	763	3971
Reverse logistic	5543	187	1121	4235

Source: Authors' elaboration based on Web of Sciences

Both industrialized and developing countries have seen an increase in GSCM use over the past three decades (Singh, 2014; Govindan et al., 2014). Many industries exist in developing countries, particularly in India, China, Pakistan, Turkey, Malaysia, South Africa, and Brazil and other places, are implementing GSCM in a number of sectors to lessen their negative environmental effects, boost revenues, and expand their market share by becoming more environmentally efficient. The governments of numerous developing nations are now formulating or implementing laws, rules, regulations, and guidelines to help the industry apply GSCM practises. Besides, several businesses started combining the green supply chain model to support strategic planning, operational practice

and increased business efficiency to gain anticipated results (Bras & Isaacs, 2006). However, there are limited studies on GSCM in developing country context, (Suhi et al. 2019). Recent research that focused on the Chinese, Indian, and Malaysian contexts found that the topic of GSCM has attracted significant interest.

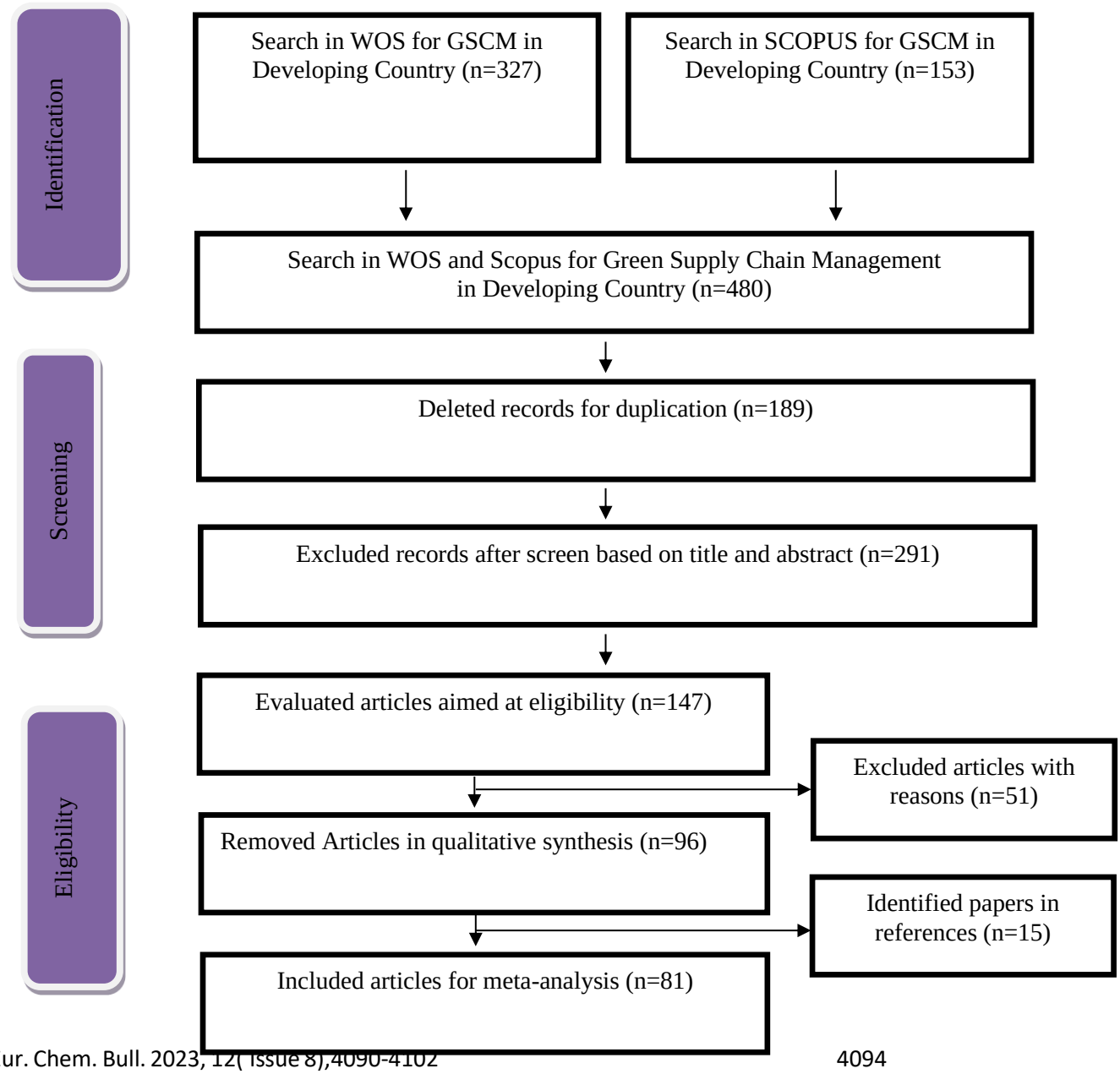
In India, where most sectors have realized the value of GSCM practice in lowering environmental impact and boosting organizational competitiveness, the practice is still in its initial stage. For example, the practice of GSCM in the textile industry of India is still in its infancy (Reza et al., 2017). Similarly, the chemical and leather industries are also at the initial stage for applying GSCM practices (Shohan et al., 2019; Uddin et al., 2019). Furthermore, the leather industry is suffering from various challenges including technological, economic, and social benefits from GSCM practices (Majumdar & Sinha, 2018). In a manner similar to this, there haven't been many research on implenting GSCM in the leather sector of India.

Methodology

The literature on GSCM practises has been systematically reviewed in this study. The main aim of this study is to collect data pool of prior research in an individual research area (Mardani et al., 2020). The PRISMA (Preferred Reporting Item for Systematic Review and Meta-Analysis, Liberati et al. 2009) method of systematic review has been chosen as the research method to achieve the research objective of summarising the prior GSCM studies. At present, many research scholars have applied the PRISMA model in several research fields to progress the literature review (Mardani et al., 2020; Paliwal, Chandra & Sharma, 2020; Oláh et al., 2022). The PRISMA statement, which consists of three parts—a literature search, a screening process, and the selection of earlier publications —was also applied in our investigation. This study also collects and summarizes GSCM information specific to India.

In order to collect data from trustworthy sources, this study used a methodical methodology. According to Saunders (2011), the first step in a systematic literature review is to define the suitable keywords that will be used to search for and retrieve relevant literature from databases. Next, the literature will be analysed. The purpose of a literature review, according to Tranfield et al. (2003), is to pinpoint knowledge gaps as well as inconsistencies in the body of literature. The literature review also summarizes, categorises, and offers recommendations for future research based on the major topics of existing studies (Seuring et al., 2005). To obtain data, classify the literature based on content analysis, and provide guidance for future research, the current study adheres to these ideas. After tracking down the original pieces, we enlarged the literature's range of material piece by piece using the references mentioned in this extremely pertinent literature. Time savings, avoiding pointless and blind searches, assuring the standard of references, and accurate conclusions are just a few benefits of the strategy. The literature examined, however, had to reflect the subject's development tendency, therefore the single search strategy had to be changed. As a result, we looked for publications on comparable subjects in reverse chronological order. The two biggest citation databases, which contain a number of online indexes including the Science Citation Index Expanded as well as Social Sciences Citation Index were chosen to review the GSCM literature. Green supply, gscm, green logistics, sustainable supply chain management (SSCM), SCM, green supply chain (GSC), India and environmental SCM developing countries, green supplier etc. were some of the pertinent keywords used to find the published research articles. Additionally, the platform allows advanced search choices on Springer Link, Science Direct, Emerald insight, Sage, Taylor & Francis and MDPI were utilized to find the specific papers on GSCM and Indian industries. Figure 2 shows the findings of the literature review. These documents regarding GSCM studies were discovered during our initial search, according to our findings. As a result, we have located 4 records in the initial phase of our search. The following phase involved deleting redundant records and articles with extraneous data. As a result, 189 articles were deleted because they were redundant. Finally, 81 papers that are pertinent to the discussion of the concept

of GSCM in the context of developing countries have been found. The majority of these studies were published by Elsevier, Springer, Emerald, Taylor Francis and Wiley, and other publishers.An in-depth analysis of particular publications is provided in this section.81 published papers on GSCM, SSCM, and green logistics with an emphasis on developing country setting have been chosen as a consequence of the process. Finally, from 2000 to 2022, all articles that dealt with GSCM in relation to India were taken into consideration. Currently, 20 publications relevant to GSCM and SSCM that were published by Elsevier, Springer, Taylor & Francis, and Emerald Insights and were peer-reviewed in a number of international conferences and peer-reviewed journals were investigated depending on the research's inclusion criteria. Numerous academics (Fahimnia et al., 2015; Seuring and Müller, 2008) have cited the Scopus database as a reputable source of information. Additionally, the academic community has praised the ISI Web of Science database for indexing high-quality materials, and many earlier studies have used this database as a trustworthy and high-quality data source (Apriliyanti and Alon, 2017; Tian et al., 2018).



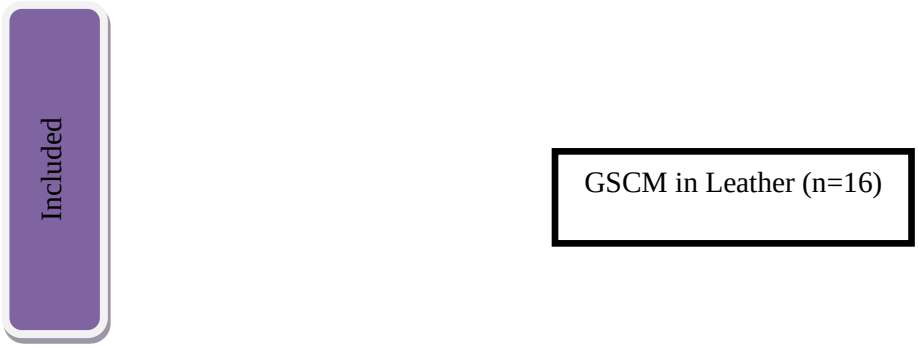


Figure 2: Flowchart of study based on PRISMA statement

Table 2. Several journals that have written articles about GSCM in the context of India

Name of Journals	Number of Articles (n=20)	Publisher	IF
Resources, Conservation & Recycling	1	Elsevier	13.716
Environmental Impact Assessment Review	1	Elsevier	6.122
Journal of Cleaner Production	4	Elsevier	11.072
Ocean and Coastal Management	1	Elsevier	4.295
Production Planning & Control	1	Taylor & Francis	6.846
International Journal of Sustainable Development & World Ecology	2	Taylor & Francis	4.87
Review of International Political Economy	1	Taylor & Francis	4.146
Annals of Operations Research	1	Springer	4.82
International Journal of Logistics Research and Applications	1	Taylor & Francis	5.992
Management of Environmental Quality: An International Journal	1	Emerald	5.80
Cogent Business & Management	1	Taylor & Francis	0.409
Benchmarking: An International Journal	1	Emerald	7.97
International Conference on Business & Management	1	BRAC University	0.55
Revista de Pielarie Incaltaminte/ Leather and Footwear Journal	1	INCDTP, RO	0.125
IOP Conference Series: Materials Science and Engineering	1	IOP publishing	0.50

Pacific Asia Conference on Information Systems (PACIS) 2013 PROCEEDINGS	1	PACIS	0.63

Source: Authors elaborations

20 papers on the GSCM have finally been selected (see table 3) for analysis in relation to India's textile, leather, chemical, agricultural, footwear, and plastic industries. These papers are reviewed and summarized based on a number of key considerations, such as application area, study emphasis, techniques, authors, publication year, sample size, methodologies, main conclusions and outcomes.

Table 3. An in-depth overview of the main GSCM research areas in India.

Authors	Main Focus	Industry	Methods and Sample Size No.	Remarks/Findings
Al Zabbi et. al 2013	Barriers to Sustainability	leather industry	MICMAC analysis (Number:13 barriers selected)	● six barriers are more difficult to overcome: cost of sustainability initiatives, lack of sustainability standards and appropriate regulations, misalignment of short-term and long-term strategic goals, lack of effective evaluation measures, inadequate facilities and lack of top management commitment.
Chowdhuryet al., 2013	SSCM stakeholders requirements	textile	Exploratory multiple-case study approach*No: 15 (expertsopinions)*	● sustainability, compliance, and governance were also very important. ● economic sustainability led by social, environmental, and operational compliance requirements.
Moktadir, et al, 2017	CSFs (critical success factors)to execute GSCM	footwear	MICMAC analysis *Number: (expert's opinion and knowledge)*	● support and commitment of top management were highlighted.
Islam et al. 2018	GSCM practices in India applying fuzzy importance and performance analysis (FIPA)	leather industry	FIPA Methodology *Number:34*	● The most important components of GSCM practices were the perspectives of suppliers and manufacturers. ● Reusing water throughout manufacturing, cutting waste, adhering to an ISO 14001 standard, and choosing reliable suppliers were crucial components. ● The performance elements need improvement.
Sarker etal., 2018	identifying the barriers to Green Supply Chain management	footwear industry	Delphi Methodology *Number: 10 (5 academic experts and 5 industrial experts)*	● 22 important barriers had been noted, including budgetary limitations, a lack of environmentally appropriate materials, a shortage of electricity, and waste management issues.
Moktadir etal., 2018	relationships among the barriers to GSCM	leather	DEMATEL Methodology *Number: N/A*	● Lack of consumer concern and a lack of commitment from senior management were the main observed barriers. ● The biggest barriers to GSCM were out-of-date equipment and poor reverse logistics procedures.
Moktadir etal., 2018	sustainability in manufacturing and the circular economy.	leather	GTMA *Number: N/A, (Experts' and academic opinions)*	● The findings show that understanding the circular economy was essential to successfully implementing GSCM in the leather sector. ● The consumer awareness driver was more important for large organizations than for small businesses. ● Sustainable manufacturing practices needed to be adopted, and the government needed to push small businesses.
Moktadir etal., 2018	drivers of circular manufacturing and sustainable manufacturing techniques.	leather	GTMA Number: N/A	● Understanding the circular economy was crucial for implementing sustainable manufacturing techniques.

Rahman etal., 2019	barriers to implementing GSCM	plastics	MICMAC & Fuzzy-VIKOR Methodology Number: 4 (Total 04 managers were From plastic company)	● Lack of information and support were the biggest barriers to implementing GSCM practices. ● Significant barriers were created by inadequate technology, financial limitations, infrastructure, unsupportive organizational, and operational policies.
Shohan etal., 2019	structural framework of drivers for implementing GSCM	chemical	Delphi Technique Number: 15 (15 experts opinions from 5 industries)	● Supplier willingness and pressure were the biggest GSCM drivers. ● The price of the GSCM was the biggest barrier.
Uddin etal., 2019	a fresh framework that assesses the barriers to GSCM	leather	AHP (analytical hierarchy process)and ELECTRE-I method No: N/A	● The biggest barrier to GSCM was the expensive price of cutting-edge technology ● The most crucial routes to GSCM involved green technology and methods.
Suhi et al., 2019	analysis of GSCM in relation to a rising economy	emerging economies	Best worst method (BWM)Technique *Number: (opinions of 45 experts)*	● According to a sensitivity analysis, waste management was the most important factor in determining environmental sustainability..
Ahmed, etal., 2019	GSCM opportunities and barriers	construction	Qualitative method *Number: 183 20 interviews of field professionalsfrom 22 countries*	● 23 opportunities and 34 obstacles had been noted. ● Green management, inventive green design, distribution, packaging, and procurement were some of the tactics used to achieve GSCM.
Tumpa etal., 2019	GSCM barriers in a context of a rising economy	textile	Questionnaire survey technique *Number: 30*	● There were 15 barriers to GSCM that were noted. ● the two biggest barriers were a lack of customer demand and financial limitations.
Gomes & Daud, 2020	implementationof GSCM	textile	Qualitative & Quantitative methods *Number: 8 (experts opinions)*	● To minimise resource waste, the industry also used the right raw materials during production. ● There shouldn't be any flaws in the basic materials. Also, environmentally acceptable raw materials are required.
Habib, etal., 2020	GSCM's effect on market orientation and entrepreneurial greenness	textile	Quantitative and exploratory approaches *Number: 286 (manufacturing firms)*	● The market orientation and GSCM practises are significantly benefited by the green entrepreneurial idea. These effects have a favourable impact on the firm's performance in terms of the economy, environment, and society.
Shohan etal., 2020	building theoryof GSCM	chemical	Delphi method *Sample Size: 14 (experts opinions)*	● The absence of government regulations and laws to cover the cost of disposing of hazardous goods was a significant impediment to GSCM.
Banik etal., 2020	crucial success elements for GSCM implementation in a developing country	electronics	Pareto analysis, DEMATEL No: *22 (expertsfrom three renowned consumers*)	● Government norms and laws, top management commitment, environmental management certification, pollution avoidance, and hazardous waste management were all obstacles to GSCM..
Roy et al., 2021	GSCM evaluation within the framework of an emerging economy	FMCG fast-moving consumer goods)	FCM (fuzzy cognitive map)and DEA (data envelopment analysis) *No: N/A*	● The findings demonstrated the value of data envelopment analysis and combined fuzzy cognitive map techniques for evaluating the strategies for GSCM.
Moktadir etal., 2022	evaluating barriers to reverse logistics practices	leather footwear	Delphi method and the fuzzy- AHP(analytical hierarchy process) *No: N/A*	● Lack of interest and support for 'knowledge and support' were the main barriers to implementing reverse logistics.

Source: Authors elaborations

Results and Discussion

In order to understand the factors influencing the adoption of GSCM, this literature review article covers GSCM publications that were published in journal outlets from 1975 to the present (2022). The literature review for this article from 1975 to the present covered all the subsections (themes and timeline) that might be used to determine potential research directions. Beginning with the timeline of 1975–2000, the discussion of GSCM driving factors in earlier research focuses on the customer perspective (Carter et al., 2000; Green et al., 1996), whereas in the timeline of 2010–2016, the issues of the organizational (Rostamzadeh et al., 2015), regulatory (Abdulrahman et al., 2014), society (Ruparathna & Hewage, 2015), and environmental (JindIn the leading industries in India for GSCM practises, Moktadir, Mithun, and Kumar (2018) have identified four positive impactful drivers: "knowledge of circular economy," "leadership & commitment," "customer awareness," and "top management, and governmental support." Given its significant influence on carrying out GSCM practises, knowledge of the circular economy (including training and education, informational resources, employee motivation, and knowledge exchange) is given priority among these factors.

However, the implementation of GSCM in superstores has been aided by the green logistic factors (compliance with environmental laws and regulations, evaluation of the environmental management system, organization of seminars and workshops, planting of trees, and regular meetings of the staff for the purpose of protecting the environment) (Salim, 2019). However, Moktadir, Rahman, and Ali (2017) identified 10 Critical Success Factors to implement GSCM practises in the footwear industry, including organisational policy, supplier green practise, and stakeholders' awareness. Additional CSFs included stakeholders' motivation to advance technology, long-term financial benefit, competitiveness, and pressure from the society. Comparatively, "top management's" backing and dedication are seen as crucial success factors. In addition, the application of GSCM in the leather sector is primarily motivated by the need for environmentally friendly raw materials, distribution management, material management, economic and environmental considerations, reverse logistics, recycling, and reuse. Besides, pressure from the suppliers and their willingness are two significant drivers in the chemical industry (Shohan et al., 2020).

Rahman et al., (2019) have identified four main-barriers, which are insufficient knowledge and support, inadequate technology and infrastructure, financial limitations, and having no support from the organization and operational policies suitable for implementing GSCM practices in the plastic industry. The difficulties of proper laws and lack of understanding of GSCM are internal barriers in the footwear business. Besides, other barriers to GSCM are financial constraints, lack of energy and waste management, and lack of source of eco-friendly materials (Sarker et al., 2018). Further, Uddin et al., (2019) identified some barriers in the leather industry which include lack of government support and policies, lack of technological knowledge, insufficient finance, and high expense of advanced technology. Tumpa et al., (2019) have identified a few significant barriers to GSCM in the textile industry, which are the low demand for environmentally friendly products due to lack of customer awareness, fewer incentives from the government, financial constraint, technical obstructions, lack of promotion of green textile materials and poor government policies and regulations. Besides, in the chemical industry, high cost is the most important barrier to GSCM (Shohan et al., 2019).

Chowdhury, Dewan and Quaddus, (2013) have been suggested that the textile supply chain members need to comply with the social, environmental, economic, and operational requirements. Maintaining a positive workplace culture and gratifying employees can streamline operations, boost productivity, and increase sustainability. If

a company wants to overcome GSCM related weaknesses, it should focus on practicing more on those variables that have a higher level of importance and effectiveness to sustainability (Islam et al., 2018).

Green techniques and green technology are the two most influential pathways to overcome the barriers to GSCM (Uddin et al., 2019). For example, in the textile industry, the implementation of GSCM can assist in using resources effectively and protect nature from unpredictable pollution (Gomes & Daud, 2020). Besides, innovative green design, green packaging, green procurement, green distribution, end-of-life management, and emission reduction could play a vital role to execute GSCM (Ahmed, Thaheem & Maqsoom, 2019). The application of GSCM can be greatly improved by the creation of more eco-friendly technologies and cutting-edge infrastructure. If significant financial support is available, creating organisational policies related to greening practises can be crucial to implementing GSCM. Appropriate action plans can help policymakers to develop strategies to overcome the barriers to GSCM (Rahman et al., 2019).

The findings of this study may motivate managers to expand GSCM procedures in their organizations, which can improve corporate performance. Some of the obstacles found in this study's findings may be useful to managers in their decision-making. The crucial success elements of GSCM practises are another area in which managers may concentrate in order to boost productivity managers of farms in other sectors of the Indian economy and other developing nations may employ comparable methods in light of the in-depth examination of the major elements of GSCM practises in numerous sectors in India.

Conclusions

Regarding the benefits that may be obtained from the implementation of GSCM practises, there is an improvement in environmental and economic performance, which has a beneficial impact on operational performance and raises organisational performance. Since some of these markets impose non-tariff restrictions, the implementation of GSCM practises may result in the opening of new markets. Therefore, our findings demonstrate that GSCM practises can help enterprises to internationalise by assisting in the removal of non-tariff barriers while also enhancing its sustainability. Furthermore, we found that adopting GSCM practises benefits all parties involved because companies who participate in green supply chains work to mitigate environmental and social issues, which boosts their reputation and increases their market potential. Locally and globally, environmental sustainability is a crucial concern. This study demonstrates how GSCM techniques can lower production costs and pollutant levels. Although GSCM practises are still in their infancy in India, many of the nation's industries—including textile, leather, chemical, footwear, construction, and agriculture—are moving towards adopting them. This paper makes an effort to summarise earlier analyses on GSCM practises in India. A thorough overview of all research in the topic up to the present is provided through a systematic review of the literature. According to the literature review, the main obstacles to GSCM include a lack of knowledge and support, green infrastructure and technology, financial resources, technological advancements, public awareness of GSCM, sources of eco-friendly materials, and government support and legislation.

The study's biggest flaw is the minimal amount of research done with respect to India. Additionally, while searching GSCM papers with the term "India," a few studies that did not contain the word "India" in their titles may not have been found. Future researchers may take into account a systematic assessment of the literature on GSCM in the context of other developing nations with comparable socioeconomic backgrounds as well as approaches other than the PRISMA model for the systematic review.

Additionally, authors could think of comparing the various business sectors in India or any other nation in the world using GSCM.

References

1. Ahi, P., Searcy, C., 2013. A comparative literature analysis of definitions for green and sustainable supply chain management. J. Clean. Prod. 52, 329–341.
2. Arias-Barreiro, C., Nishizaki, H., Okubo, K., Aoyama, I., Mori, I., 2010. Eco toxicological Characterization of Tannery Wastewater in Dhaka, Bangladesh.
3. Azevedo, S.G., Carvalho, H., Machado, V.C., 2011. The influence of green practices on supply chain performance: a case study approach. Transp. Res. E: Logist. Transp. Rev. 47 (6), 850–871.
4. Bari, M.L., Simol, H.A., Khandoker, N., Begum, R., Sultana, U.N., 2015. Potential human health risks of tannery waste-contaminated poultry feed. J. Health Pollut. 5 (9), 68–77.
5. Barney, J., 1991. Firm resources and sustained competitive advantage. J. Manage. 17 (1), 99–120.
6. Bellman, R.E., Zadeh, L.A., 1970. Decision-making in a fuzzy environment. Manag. Sci. 17(4), B-141–B-164.
7. Bhadauria, V.S., Toms, L., Green Jr, K.W., Meacham, J., 2014. Do green information systems impact performance? Int. J. Prod. Qual. Manag. 13 (4), 377–394.
8. Bilal, K., Malik, S.U.R., Khalid, O., Hameed, A., Alvarez, E., Wijaysekara, V., Ali, M., 2014.
9. A taxonomy and survey on green data center networks. Future Gener. Comput. Syst. 36, 189–208.
10. Boley, B.B., McGehee, N.G., Hammett, A.T., 2017. Importance-performance analysis (IPA)of sustainable tourism initiatives: the resident perspective. Tour. Manag. 58, 66–77.
11. Büyüközkan, G., Çifçi, G., 2012. A novel hybrid MCDM approach based on fuzzy DEMATEL, fuzzy ANP and fuzzy TOPSIS to evaluate green suppliers. Expert Syst. Appl. 39 (3), 3000–3011.
12. Carter, C.R., Ellram, L.M., 1998. Reverse logistics: a review of the literature and framework for future investigation. J. Bus. Logist. 19 (1), 85.
13. Chen, C.-A., 2016. How can taiwan create a niche in Asia ‘s cruise tourism industry? Tour. Manag. 55, 173–183.
14. Chung, C.-C., Chao, L.-C., Lou, S.-J., 2016. The establishment of a green supplier selection and guidance mechanism with the ANP and IPA. Sustainability 8 (3), 259.
15. De Brito, M.P., Carbone, V., Blanquart, C.M., 2008. Towards a sustainable fashion retail supply chain in Europe: organisation and performance. Int. J. Prod. Econ. 114 (2),534–553.
16. Dwyer, R., Lamond, D., Wittneben, B.B., Kiyar, D., 2009. Climate change basics for managers. Manag. Decis. 47 (7), 1122–1132.
17. Eltayeb, T.K., Zailani, S., Ramayah, T., 2011. Green supply chain initiatives among certified companies in Malaysia and environmental sustainability: investigating the outcomes. Resour. Conserv. Recycl. 55 (5), 495–506.
18. Flynn, B.B., Sakakibara, S., Schroeder, R.G., Bates, K., Flynn, J., (1990) Empirical research methods in operations management. Journal of Operations Management vol. 9(2), 250-284.
19. Gavronski, I., Klassen, R.D., Vachon, S., Machado do Nascimento, L.F., 2011. A resource-based view of green supply management. Transportation Research Part E Vol. 47, 872-885.
20. Henri, Jean Francois and Journault, Marc (2010) Eco-control: The influence of management control systems on environmental and economic performance. Accounting, Organizations and Society. Volume 35, p.63–80
21. Hervani, A. A., Helms, M. M. & Sarkis, J. (2005). "Performance Measurement for Green Supply Chain Management," Benchmarking: An International Journal,12(4). 330-353.

22. Jain, S.K. and Kaur, G. (2004). Green marketing: An Indian perspective. Decision, Vol. 31, No. 2, pp. 168-209
23. Luthra S, Vinod Kumar1, Sanjay Kumar, Abid Haleem (2010). Barriers to implement green supply chain management in automobile industry using interpretive structural modeling technique: An Indian perspective. Journal of Industrial Engineering and Management, 4(2), 231-257. doi:10.3926/jiem. 2011.v4n2.p231-257
24. Olugu E.U, Wong K.Y and Shaharoun M.A (2011), Development of key performance measures for the automobile green supply chain, Resources, Conservation and Recycling, Vol. 6(55), pp. 567-579 (ISI-Cited Publication) available at http://www.ncbi.nlm.nih.gov/pubmed/9342835 accessed on July 20l4
25. Plambeck, L.E. (2007). The greening of Wal-Mart's supply chain. Supply Chain Management Review, 18-25.
26. Rao, P., Holt, D., 2005. Do green supply chains lead to competitiveness and economic performance? Int. J. Oper. Prod. Manag. 25 (9), 898–916.
27. Robèrt, K.-H., 2000. Tools and concepts for sustainable development, how do they relate to a general framework for sustainable development, and to each other? J. Clean. Prod. 8 (3), 243–254.
28. Rostamzadeh, R., Govindan, K., Esmaeili, A., Sabaghi, M., 2015. Application of fuzzy VIKOR for evaluation of green supply chain management practices. Ecol. Indic. 49, 188–203.
29. Roy, P., 2016. Hazaribagh reels from pollution. The Daily Star. Retrieved from http:// www.thedailystar.net/frontpage/hazaribagh-reels-pollution-1285357.
30. Saghiri, S., Hill, A., 2014. Supplier relationship impacts on postponement strategies. Int. J. Prod. Res. 52 (7), 2134–2153.
31. Salimifard, K., Shahbandarzadeh, H., Raeesi, R., 2012. Green transportation and the role of operation research ICTTE. Paper Presented at the Int. Conf. Traffic Transp. Eng.
32. Sarkis, J., Gonzalez-Torre, P., Adenso-Diaz, B., 2010. Stakeholder pressure and the adoption of environmental practices: the mediating effect of training. J. Oper. Manag. 28 (2), 163–176.
33. Sarkis, J., Koo, C., Watson, R.T., 2013. Green information systems & technologies-this generation and beyond: introduction to the special issue. Inform. Syst. Front. 15 (5), 695.
34. Sarkis, J., Zhu, Q., Lai, K.-h, 2011. An organizational theoretic review of green supply chain management literature. Int. J. Prod. Econ. 130 (1), 1–15.
35. Savita, K., Dominic, P., Ramayah, T., 2016. The drivers, practices and outcomes of green supply chain management: insights from ISO14001 manufacturing firms in Malaysia.Int. J. Inform. Syst. Supply Chain Manag. 9 (2), 35–60.
36. Srivastava, S.K., 2007. Green supply-chain management: a state-of-the-art literature review. Int. J. Manag. Rev. 9 (1), 53–80.
37. Stephan, V., Robert, D.K., 2006. Extending green practices across the supply chain: the impact of upstream and downstream integration. Int. J. Operat. Prod. Manag. 26 (7), 795–821.
38. Tan, K.C., Kannan, V.R., Handfield, R.B., 1998. Supply chain management: supplier performance and firm performance. J. Supply Chain Manag. 34 (3), 2.
39. Tseng, M.-L., 2009. A causal and effect decision making model of service quality expectation using grey-fuzzy DEMATEL approach. Expert Syst. Appl. 36 (4),7738–7748.
40. Tseng, M.-L., 2011. Green supply chain management with linguistic preferences and incomplete information. Appl. Soft Comput. 11 (8), 4894–4903.
41. Tseng, M.-L., Bui, T.-D., 2017. Identifying eco-innovation in industrial symbiosis under linguistic preferences: a novel hierarchical approach. J. Clean. Prod. 140 (January (Part 3)), 1376–1389.
42. Tseng, M.-L., Chiu, A.S., 2013. Evaluating firm's green supply chain management in linguistic preferences. J. Clean. Prod. 40, 22–31.

43. Tseng, M.-L., Chiu, A.S., Liang, D., 2017. Sustainable Consumption and Production in Business Decision-Making Models. Elsevier.
44. Tseng, M.-L., Lim, M., Wu, K.-J., Zhou, L., Bui, D.T.D., 2018. A novel approach for enhancing green supply chain management using converged interval-valued triangular fuzzy numbers-grey relation analysis. Resour. Conserv. Recycl. 128 (January),122–133.
45. Tseng, M.-L., Lin, Y.-H., Tan, K., Chen, R.-H., Chen, Y.-H., 2014. Using TODIM to evaluate green supply chain practices under uncertainty. Appl. Math. Model. 38 (11),2983–2995.
46. Tseng, M.-L., Tan, K., Chiu, A.S., 2015. Identifying the competitive determinants of firms' green supply chain capabilities under uncertainty. Clean Technol. Environ. Policy 1–16.
47. Tseng, M.-L., Tan, K., Chiu, A.S., 2016. Identifying the competitive determinants of firms' green supply chain capabilities under uncertainty. Clean. Technol. Environ. Policy 18 (5), 1247–1262.
48. Tseng, M.-L., Tan, R.R., Siriban-Manalang, A.B., 2013a. Sustainable consumption and production for Asia: sustainability through green design and practice. J. Clean. Prod.40, 1–5.
49. Tseng, M.-L., Wang, R., Chiu, A.S., Geng, Y., Lin, Y.H., 2013b. Improving performance of green innovation practices under uncertainty. J. Clean. Prod. 40, 71–82.
50. Vachon, S., Klassen, R.D., 2007. Supply chain management and environmental technologies: the role of integration. Int. J. Prod. Res. 45 (2), 401–423.
51. Walker, H., Seuring, Stefan, Sarkis, P.J., Robert Klassen, P., Dam, L., Petkova, B., 2014. The impact of environmental supply chain sustainability programs on shareholder wealth. Int. J. Oper. Prod. Manag. 34 (5), 586–609.
52. Wiengarten, F., Pagell, M., Ahmed, M.U., Gimenez, C., 2014. Do a country's logistical capabilities moderate the external integration performance relationship? J. Oper. Manag. 32 (1), 51–63.
53. Wu, H.-J., Dunn, S.C., 1995. Environmentally responsible logistics systems. Int. J. Phys. Distrib. Logist. Manag. 25 (2), 20–38.
54. Wu, K.-J., Liao, C.-J., Tseng, M.-L., Chiu, A.S., 2015. Exploring decisive factors in green supply chain practices under uncertainty. Int. J. Prod. Econ. 159, 147–157.
55. Youn, S., Yang, M.G.M., Hong, P., Park, K., 2013. Strategic supply chain partnership,environmental supply chain management practices, and performance outcomes: an empirical study of Korean firms. J. Clean Prod. 56, 121–130.
56. Zadeh, L.A., 1965. Fuzzy sets. Inform. Control. 8 (3), 338–353.
57. Zhao, S., Zhu, Q., Cui, L., 2018. A decision-making model for remanufacturers: considering both consumers' environmental preference and the government subsidy policy. Resour. Conserv. Recycl. 128 (January), 176–186.
58. Zhu, Q., Feng, Y., Choi, S.-B., 2017. The role of customer relational governance in environmental and economic performance improvement through green supply chain management. J. Clean. Prod. 155 (July (Part 2)), 46–53.
59. Zhu, Q., Sarkis, J., 2004. Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises. J. Oper. Manag. 22 (3), 265–289.
60. Zhu, Q., Sarkis, J., Geng, Y., 2005. Green supply chain management in China: pressures, practices and performance. Int. J. Oper. Prod. Manag. 25 (5), 449–468.
61. Zhu, Q., Sarkis, J., Lai, K.-h., 2008. Confirmation of a measurement model for green supply chain management practices implementation. Int. J. Prod. Econ. 111 (2), 261–273.