

Green supply chain management: An emerging initiative on environmental performance

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Abstract

Innovations in supply chain and logistics have been a debatable issue in the corporate world and have found a significant academic attention during the contemporary times. Businesses cannot persist without innovation in this volatile world. As a result, business organizations are required to continuously think on newer trends of supply chaining and logistics; after all ensuring sustainability i.e this innovation does not create any adverse effect on the environment. So, the green concept is evolving because of consumer concern, government regulations and social responsibility of corporate world towards society and environment. It is clear that the supply chains is play an pivot role for most of the organizations or a business related to have an greatest effect on the environment than any other facet of their operations. This study shows the importance of Green Supply Chain over traditional Supply chain. The paper examines previous researches and concoction them. Literature stipulates that the execution of Green Supply Chain is still in dilemma. In spite of the environmental impact on companies is more concern for implementation of the Green Supply Chain management practices. The present study identifies various factors which lead to the successful implementation of the Green Supply Chain.

Keywords: green supply chain management, green initiatives, operational efficiency, environmental performance

Introduction

In the current scenario all the stake holders like companies, business enterprises, Government and consumers understand the key significance of environment friendly system, safety and welfare. Due to the increasing change the opinion of the people towards the environment and the problems like global warming and rising pollution of all types have changed their point of view and preferences to buy the products. Consumers in recent times now more concerned related to environmental changes and think about that how they can start to change their habits. One of the key changes in the consumers buying habits are related to environment concern. In other words consumers now search for products those are environmental friendly for instance recyclable and energy efficient. Therefore, concerned authorities in companies now working on to produce goods and products those are through with green supply chain process entirely.

Green supply chain is manufacturing products which are green or environmental friendly and have different parts that can be recyclable (Murray, 2011). Green supply chain can be in different types or is accomplished in different ways. A production process of an organization can be green by using more energy efficient and greener equipment. When appraising the supply chain process of companies are able to make out the key areas where changes can be made to a higher environmentally effective approach and that could also help at the similar time in areas that are incompetent.

Environmentalism is fastest emerged as a worldwide fact. Business firms also come up to the juncture and they started to respond towards environmental or sustainable challenges by proceeding green marketing strategies. Green consumerism has played an analytical role in showing corporate environmentalism and building business firms towards green marketing orientation and consumers do consider in credibleness of abrupt rise in environmental

concern and recognize people in India as willing to take environmentally friendly steps to be more suitable for environmental problems (Jain & Kaur 2004) ^[17]. Similarly, due to environmental concern arises; supply chain management has been redefined making it more complex. Due to diverse legislations and regulations in most established countries like European community, they have prepared to the manufacturers answerable for their products, during their intact useful life and further this has resulted that in the addition of the out-of-date supply chain is to embrace the after use stage of the products. This after use stage couldn't be achieved its objectives in separation, So there is a need to construct an incorporated approach for planning and controlling the features and set of rules in which materials could be flow within its supply chain.

Wang and Gupta (2011) discussed that the supply chain could be green when it is integrated during every facet of the value chain. Green Supply Chain Management (GSCM) is the synthesis of the regular Supply Chain Management (SCM) with environmental alertness which highlighting on green productivity and diminishes in environmental impingement during each linkage in the value-added chain by the following elements:-

1. Reduction of energy consumption
2. Reduction of consumption of natural resources
3. Reduction in pollution connected problems
4. Increasing reprocessing to exploit the further use of raw material and supply

Business or corporate world adopted the Green supply chain management practices to get the sustainable and environmental friendly supply chain process. Companies are therefore required to steadily treat in such activities which would help them to meet up the demands of the customers are reasonable time and ensuring that there is no unfavorable impact on environment.

Green supply chain is related to manufacturing products which has to be green or environmental friendly and if waste persevere, it can easily recyclable. Green supply chain also emphasize that the production process should be greener and equipments which is used in the production process is to be more energy efficient and sustainable.

Green supply chain is also related to supplier of the company because if the supplier of company is not support or contributes into the green supply chain movement of a company, In that case company is unable to maintain the environmental concern or green supply chain initiatives.

In addition, information and coordination play an important role between suppliers and company. Company or a business has to maintain information related to the use of environmental friendly products or process and coordinate accordingly. So that the business or a company and suppliers can closely established link into the green supply chain process.

Sustainable or Green supply chain management is also concern to use certain practices into their business which are highly related to the value of relationship inside the supply chain and relationship to the outside participants. Green supply chain practices also integrate the environmentally but also provide a competitive advantage to the business.

Although, supply chain management has the responsibility to manage the firm's supply chain network and external resources as well. So, this is a requirement to find a proactive and innovative suppliers or partners who are able to distribute green or sustainable solutions to the business or a company. Because a single business unable to establish a Green or Sustainable or environmentally supply chain and every player has to participate into the supply chain process and contribute to the green supply chain movement as well. Green supply chain process also leads to the importance of environmental performance and economic performance which is make positively effect on operational performance of a business and operational performance enhances organizational performance of a business.

Review of Literature

Many studies have been ushered on different facets of green supply chain and reporting by various researchers or scholars in different countries. Some of these studies have been reviewed herein highlighting their objectives, methodology and findings briefly:

Environmental and sustainable issues became the major concerns for the government, international bodies and business organisations. Business organisation are brawling to be more sustainable (Luthra, Garg & Haleem (2016) ^[2] whereas Khuswaha and Sharma (2015) stated that automobile one of the crucial industries of Indian economy. The possibilities of green initiatives for the achievement of the firm as well as for sustainable development are playing an important role. Green initiatives (green marketing, green advertisement, eco labels and green product innovation) are one of the essential factor not only related to sustainable development but also related to the performance of the firm. Rao & Holt (2005) ^[3] examined that greening of different stages of the supply chain guide to an integrated green supply chain, which is lastly leading to the effectiveness and economic performance of business organizations. However the study concludes that greening of supply chain has the similar efficiency to lead to effectiveness and economic performance.

There are certain parameters which play an important role for analysing the performance of the automobile green supply chain that is environmental concern, management, measurement of traditional supply chain performance and supply chain management of automobile company (olugue, warg & shaharoun (2010) whereas Zhu, Sarkis & Lai (2006) discussed about increasing pressure come up from a various of direction may impact on Chinese automobile supply chain managers that to deliberate and originate the execution of green supply chain management (GSCM) practices to enrich their economic and environmental efficacy.

Testa and Ireldo (2010) ^[1] also emphasized on Green Supply Chain Management (GSCM) as an increasingly universally dispersed practice among companies or business organisations that are desired to refine their environmental efficiency or performance. GSCM is dynamically strongly appreciative with the advancement of management practices and it enhances the environmental efficiency or performance too.

Some researchers shows that the business partners or business players who are involved into the Green Supply Chain are also the responsible for the expansion of environmental plans of the company and its efficiency and effectiveness as well.

Beske and Seuring (2014) classified the most frequent practice in the existing sustainable supply chain management (SSCM), author suggested that those company are adopt the sustainability in their business road map or schemes has to use specific practices in their management decisions of supply chain. These practices extremely related to the certain issues of the healthier relationship inner of supply chain and the relationship to the external stakeholder as well. Sustainability, Risk management, Continuance, Alliance and proactively are to be integrated towards the Supply chain management to achieve a Sustainable supply chain management.

Lintugas, Kehkonen & Ritala (2014) examined that there are unidentified risks come up in the way of adoption of green supply chain management practices, although some of the different issues work against this phenomenon. The author reviewed the firm policy level and the decision making which play an important role to showing the potential barriers of sustainably. The supply chain management is accountable for the management of the firm's supply chain network and external resources of supply chain.

This is an important aspect of Supplier participation in green initiatives which is known by the analysing customer requirements, supplier readiness, relational norms and customer investment as possible drivers, supplier willingness and customer necessities are to be significant drivers in supplier participation for accomplishment of green or sustainable supply chain (Caniels, *et al*, (2013). In contrast, Lee (2008) stated that the requirements of buyer related to environment and support were absolutely limited to their supplier eagerness to contribute in green supply chain initiatives and if the suppliers have more resources and organizational capabilities leads to their eagerness to contribute into the green initiatives decisions of a company. Yu *et al* (2014) discussed that significance and positivity in relationship between Igscm (internal GSCM; GSCM with customers and GSCM with suppliers) and functioning capability in terms of flexible in delivery, quality and cost. The authors conducted research survey on automotive

Table 2

Word	Length	Count	Total Percentage (%) of Count in word frequency
management	10	7374	10.23
supply	6	6920	9.60
environmental	13	6255	8.68
chain	5	6084	8.44
green	5	4987	6.92
performance	11	4148	5.76
practices	9	3622	5.03
gscm	4	3441	4.78
suppliers	9	1874	2.60
production	10	1842	2.56
sustainable	11	1253	1.74
logistics	9	1214	1.68
manufacturing	13	1116	1.55
operations	10	966	1.34
products	8	957	1.33
factors	7	930	1.29
social	6	902	1.25
purchasing	10	899	1.25
economic	8	880	1.22
design	6	865	1.20
implementation	14	856	1.19
impact	6	800	1.11
operational	11	800	1.11
customers	9	774	1.07
cost	4	768	1.07
strategy	8	725	1.01
process	7	688	0.95
integration	11	683	0.95
quality	7	626	0.87
innovation	10	588	0.82
materials	9	587	0.81
practice	8	576	0.80
activities	10	575	0.80
waste	5	556	0.77
resources	9	553	0.77
technology	10	514	0.71
pressures	9	504	0.70
collaboration	13	492	0.68
support	7	485	0.67
initiatives	11	481	0.67
cooperation	11	475	0.66
competitive	11	450	0.62
barriers	8	415	0.58
efficiency	9	400	0.56
greening	8	361	0.50

Various research papers has been synthesis through qualitative software NVIVO and we can say that Green supply chain management is an emerging concept and organisations could flourish to increase their competitive advantage among their competitors and increase of their customer satisfaction (Kaur & Awasthi, 2018) ^[19]. Due to increase of global warming and environmental concern among the stakeholders, this is an increasing pressure on the firms to develop measures to refine environmental performance.

Many scholars around the world bring the attention towards the environmental issues and suggested the GSCM practices has a capability to integrate with the existing supply chain network which minimize the negative impact on firms operations (Tseng, et al, 2018). Changing competition environment are always stress to make adjustment and all business has to react willingly or forcibly to remain exist into the global competition. They have to make changes internally and externally to face the global competition, GSCM practices are useful practices which provides a superior performance in operations of the business (Suryanto, et al, 2018).

GSCM is increase the efficiency of the supply chain activities of the firm and to contest environmental degradation. Even though the idea to react towards

environmental issues is not a new for the firms, GSCM encourages the firm to increase their environmental efficiency as well as increase coordination between supplier and firm. The coordination develops a positive relationship between supplier and firm, which leads to strong GSCM practices adopting by the firms like Green purchasing. Green purchasing aspect is also helpful for the firms to evaluate or make selection as per the environmental criteria (Tan, et al, 2019). The GSCM practices inculcate more deep understanding about positive relation between business operations. It may positive impact on efficiency related to business activities and improves competency of the firms. Collectively GSCM practices emphasize on the environmental efficiency with the cost saving in operations as well (Sheyadi et al, 2019). GSCM practices could be like green purchasing, eco-design, green production, green packaging which should be listed as per the need or requirements of an industry or firm (Khan, et al, 2020). GSCM is an arrangement where different decisions has to take by the management to make GSCM strategy related to purchases of raw material, design, production, packaging of products and their distribution. GSCM Strategy formation also ensures to improve operational efficiency as well as environmental efficiency (Bag, et al, 2020) ^[21].

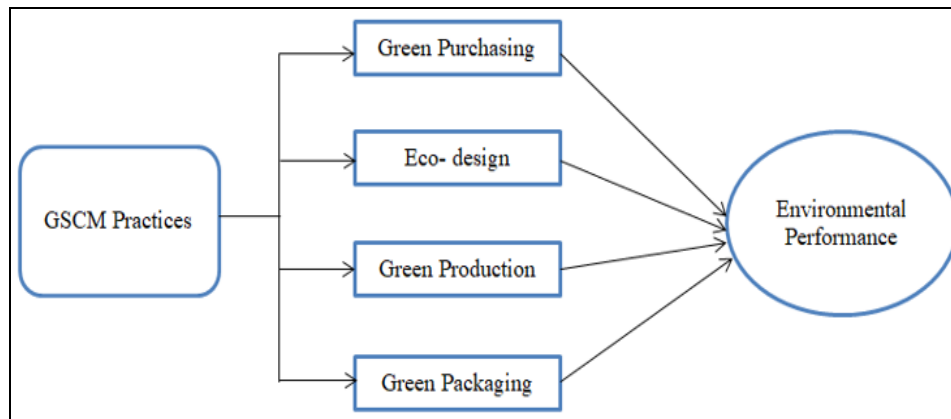


Fig 2: GSCM Practices leads to Environmental Performance

Conclusion

In this paper we conclude that due to increasing the environmental preservation concern across the globe, GSCM is drawing greatest interest in almost every sector. Businesses and organizations should not only exist for earn a profit but everyone should be accountable for its sustainability in a way that is environmentally aware and eco-friendly. The connection & coordination between businesses and the suppliers are one of the main problems to implement the green supply chain. Companies have to make exercise to find the suppliers who are able to take green initiatives and contribute into Green supply chain.

Green supply chain management is also a crucial aspect to implement the green supply chain because GSCM exercises are responsible to build a strong green supply chain and contribute into the environment friendly concern of customers and government as well. Green initiatives and green innovation is a key component of green supply chain. Green standards should be an essential part during every facet of the value chain and product life-cycle. Organizations are strictly followed to these green standards to make sure the sustainability of their companies. Due to increasing environmental requirements around and future trends, the GSCM outline has opened a fresh opportunities into the industry. Even though organizations have faced many difficulties, trying to implement GSCM practices over the period of times, some of the organizations established their business more successful in current scenario than previous time. By adopting to consume an eco-friendly so far less costly methods in the supply chain, they have increased their effectiveness and enhanced their environmental execution, while increasing expansion within their supply chain. Those organizations who are establishing themselves as capable, self-assured and likewise, creative leaders as they mould the way ahead in green product development; acceptance the abundant opportunities available at a worldwide level as a result of adopting Green Supply Chain Management (GSCM) applications.

The study presents understanding based on the shortlisted papers from various resources. The understanding have been presented and grounded on analysis through NVIVO Qualitative software. The conceptual and theory development has been provided direction that GSCM practices are useful in many aspects like environmental performance, operational performance, and competitive efficiency and build trust in stakeholders of the business, which indicates GSCM an emerging aspect in current management era.

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