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TO STUDY THE STRATEGIES FOR BARRIER IMPACT MITIGATION IN GREEN SUPPLY CHAIN MANAGEMENT AND ADOPTION OF GSCM PRACTICES

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ABSTRACT

Ecological and economic changes are of significant concern in establishing sustainable companies in today's changing market environment. It is important to know how businesses, across the supply chain, can handle these two paradigms.

The research's integrative approach validates the causal association between Lean adoption, Lean SCM, Green SCM and Organizational success practises. To determine the strength of the relationship, the quantitative method and deductive approach were used. For multicollinearity, common system variance and unidimensionality, the measurement model was tested. Based on Lean's assimilation by them the companies were listed as Lean initiators, Lean movers and Lean adopters. In the presence of ISO 14001 certification on Lean SCM practises, Green SCM practises, and organisational efficiency, MANCOVA validated the impact of Lean adoption.

Modelling of the causal link between Lean SCM practises, Green SCM practises and organisational performance was found to be acceptable. The power of the relationship showed that a positive direct and indirect influence exists between the constructs.

The study's contribution and implications were unique in offering methods to strengthen and integrate activities from the current state to the future state. Researchers and practitioners will exploit the proposed integrated system to build on lean green for a sustainable supply chain.

KEYWORD: Ecological, supply chain, multicollinearity, Organizational success

INTRODUCTION

All industries worldwide, including agricultural enterprises, are in a state of transformation. Collaborations, mergers and acquisitions, reengineering, globalisation, strategic partnerships and the corporate process also affect these firms. In recent times, people are more worried with comfort and they are looking for ease. For better products

and services, consumers look out. Owing to the highly complex, competitive and sophisticated current economic climate, flexible and creative business approaches are in high demand. Product shelf life is being shortened by technological development in the modern world. And in most economies, globalisation pressures competition. Successful supply chain situations include this daunting initial situation. In addition to these needs, corporations are now deliberating on the diverse areas of diversity in supply chain management (SCM).

A supply chain is a system of organisations, human resources, activities, data and resources that are necessary for the transition from supplier to customer of a product or service. Activities in the supply chain require the transformation of natural resources, raw materials and parts into a full product that is transported to the end consumer. Supply Chain Management includes the planning and management of all operations related to sourcing and procurement, conversion, and all activities of logistical management. It contains cooperation and communication with appropriate networks which can be vendors, intermediaries, third-party service providers and consumers. Supply chain management fundamentally combines the management of supply and demand within and around the marketplace. If each product produced is not checked along each supply chain manufacturing or packaging phase, it can be difficult to track where the problem has risen, making it incredible to solve the problem without concluding the entire supply chain. Health, sustainability and quality measures for goods are all essential components of the business. A network of supplies that works Suppliers of compatible corporate values can successfully be included the easiest way to verify whether an agency in your supply chain operates close to your core principles is to test certain third-party entities according to your standards.

You will obtain improved information as supplier management increases. You can identify risks from social, environmental and safety concerns in real time through programmes comparable to the Supply Chain Risk Experience Assessment Network (SCREEN). Using the world's living heat maps, you can determine which nations are persistent and which are dangerous. The aim of growth research is to establish a structure to encourage a multi-layered band pine supply chain that will promote economic and environmental standards.

In arriving at a conclusion, qualitative data may also be very appropriate. But the data needs to be prepared at organisational and tactical levels at all levels. So if choices are made with the aid of sufficient context knowledge available to us, then it is possible that those choices will assist us in a supply chain system that is most reliable and successful. So

this is how we can grasp the significance of the analytics of the supply chain. We can see the use of some methods and the use of certain modelling approaches at all various levels of the supply chain to make decisions. It now also includes the entire supply chain, from sourcing to logistics, including production, distribution and all other aspects. The study of the supply chain is not only limited to a single region of the supply chain. From the procurement of raw materials or the sourcing of parts or sub-assemblies to the logistics and delivery of goods to the end consumer, it takes care of the entire value chain.

Global warming has become a serious problem worldwide. In order to reduce the carbon footprint throughout the supply chain, companies are encouraged to follow green supply chain management practises. The start of Management of the Green Supply Chain (GSCM), theoretically, during the Engineering Revolution, it had its origins. In a gradual way, supply chain management has grown and developed. Significant revolutions in the world of supply chain management have occurred in the last century.

The first revolution (1910-1920): The Ford Supply Chain system

By handling to create a highly integrated chain prosess, Ford Motor Company ended the first primary revolution. Ford, however, managed to create an incredibly effective, unbending supply chain, but they were unable to cope with a large variety in the product. In the long run, they were not able to keep up. General engines, on the other hand, have acquired a wider range of vehicle models and colours. The supply chain of Ford took a long time to become familiar with change. Until the second supply chain revolution, all car companies were assimilated enterprises. Traditional companies similar to Hindustan Motors were also incorporated into a business where the bulk of the production was carried out in-house.

The supply chain structure of the ford was completely inflexible. Around 50 years after this preliminary development of supply chain thinking, the Toyota model came about. Therefore we have started to move from this inflexible model to a bit of supply chain flexibility. So some tractability began to come from Ford to Toyota in the supply chain. Many owners have thus entered the Toyota supply chain and many distributors have established themselves.

The second revolution (1960-1970): The Toyota Supply Chain

Towards the end of the first revolution, the engineering industry saw a trend towards a broader range of products in different configurations. Organizations had to streamline their supply chains to be well-organized and flexible to familiarise themselves with these variations. The supply chains were necessary without holding too much inventory to

contract with a variety of products. All these concerns were effectively mentioned by the Toyota Motor Company, thus accompanying the second revolution.

It was decided to manufacture key components for Toyota Motor Enterprise in-house in the industrial sector. A huge number of suppliers who were part of the keiretsu system discovered the majority of the devices. Keiretsu mentions a tradition of companies connected to shareholder associations and business associations. Toyota Motor Enterprise has established long-term relationships with manufacturers, distributors and suppliers. The Toyota assembly chamber was very close to all the contractors, traders and suppliers. The key characteristics that boosted the second revolution were small set-up periods and long-term relationships with providers. It was an extended trip from the strictly integrated system of the Ford supply chain. More generally, the principles followed by Toyota are known as lean manufacturing systems.

In the later part of the period, the Toyota system got into difficulties. When Toyota and other Japanese companies attempted to set up assembly chambers in different parts of the globe, they realised they would also have to take their suppliers with them. In addition, some of the suppliers in keiretsu were satisfied and were no longer cost-effective. With the advent of electronic data transactions, which facilitated the electronic exchange of information between companies, the ability to integrate securely with suppliers without allowing them to locate their industry close to the manufacturing plant was possible.

The Third Revolution (1995-2000): The Dell Supply Chain system

The Dell Computers industries allowed consumers to customise their computers with advances in information technology. In their production and distribution systems, the Dell system allowed customers to organise their individual PCs and pathways in the same way. The Dellsupply chain, distinct from the Toyota supply chain, did not believe in long-term supplier relationships. Dell believed in working with world-class suppliers who in their individual fields would preserve their technology and total leadership. Dell could integrate the suppliers electronically due to developments in IT even if they were partners only for an intermediate term. At Dell, real customer orders and not estimates were the trigger for supplier orders. This led to a significant reduction in accounts. This helped them to respond to any differences in the marketplace. In finding suppliers close to their assembly unit, Dell did not see any benefit. Dell has developed greater supply chain flexibility due to the increased use of information technology in the supply chain.

The Fourth Revolution (Year 2000 onwards)

The Fourth Revolution occurred when the ill effects of the traditional supply chain process were observed by organisations. There was an adverse environmental impact that caused the environment to become irreversibly impaired. The disruption of the environment affects human beings' health and safety. It also poses a risk to the planet's animals and plant life. This created a concern among global policymakers, government and manufacturing associations, thus emerging the notion of the green supply chain. Dell presented a programme for waste recycling. The primary objective of the programme is to ensure that the electronic components are subsequently disposed of securely and thus have a beneficial life. That is why green supply chain management is also referred to as a closed loop supply chain where the manufacturer takes care to minimise the product's environmental impact during its entire life cycle process. Recently, Supply Chain Management (SCM) has attained devotion, making manufacturing companies assimilate with suppliers & customers through multiple supply & distribution logistics networks to ship products with competitive advantage to customers.

OBJECTIVES OF THE STUDY

- To establish a system for determining the degree of implementation of GSCM.
- To identify barrier effect mitigation techniques in the implementation of GSCMM

Barriers in implementing GSCM

1. **Lack of understanding among the public**

In order for GSCM to have a stronger edge, public perception must be increased. In the implementation of GSCM, however, not being aware of these activities is a problem.

2. **Lack of awareness on environmental effects**

In daily life, environmental consequences exist. It must be known to people.

3. **Bad dedication by the top management**

A company's top management must set standards by taking into account the environment.

4. **The government's lack of legal compliance**

Policies favouring GSCM must be set by the government.

5. **Resource shortages**

From time to time, resource allocation must be made.

6. **Lack of sustainable practises in the vision & mission of the company**

A company's management must include senior staff in the vision & mission of the framing organisation with regard to GSCM.

7. **Lack of recyclable content markets**

Markets for recyclable products must be opened in order for recycled materials to become part of one's method or organisation.

8. **Lack of exchange of knowledge between construction firms and vendors**

To boost quicker contact, technology must be used.

9. **The absence of demand**

Competition between markets can produce goods in the store. Consumer awareness boosts product demand.

General driving forces for GSCM

The significance of the various powers operating simultaneously in order to create GSCM practises.

- **Government**

Strict regulations must be passed by the government to better follow GSCM procedures. Regulations have to be formulated in order for businesses to comply with government requirements. In the government rule book, the use of environmentally friendly products and renewable energy must be enacted. The problem of government compliance is water management techniques, material recycling techniques, waste disposal practises, human protection.

- ***Customer***

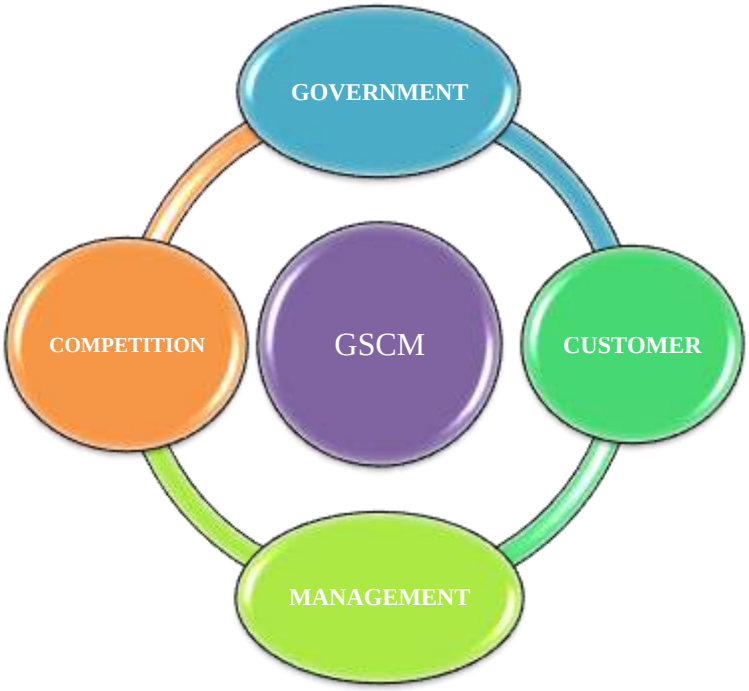
Customers must be aware of activities that are eco-friendly. In order to improve the buying power of consumers, the need for GSCM and its findings must be made known to customers. Advertisements must be made in order to experience the weight of green goods. In buying green goods, consumers can also work together.

- ***Management***

Government policies must be supported by the company so that GSCM activities are put to best use. Organizations must allow the best use of public expectations. A committee to take care of GSCM operations is to be named by management. In the vision and mission of their organisation, management should include GSCM initiatives.

- ***Competition***

In order to put GSCM into effect, competition between markets drives businesses. The promotion of green goods is strengthened by healthy competition between companies. It is possible to devise price management policies so that sales of green goods are effective.



GENERAL DRIVING FORCES FOR GSCM

BARRIER MITIGATION STRATEGIES

If the government supports follow-up initiatives, barrier impact mitigation is feasible.

- Government initiatives and understanding of individuals fill the void in barrier reduction.
- If government develops strict greener goods policy, then engagement by top management would lead better to a competitive market. Price competition opens up avenues for new demand from the market. In this way, markets for recyclable materials will emerge.
- People must care for future generations to thrive in a sustainable world. Awareness of environmental effects would thus be better appreciated by the public.
- Knowledge of the link between current environmental threats and potential environmental degradation must be identified. Then it can only build public knowledge that will alleviate few barrier impacts.

- Focus on problems caused by current ecological imbalance and propose improvements needed for environmental remedies. The use of money for environmental remedies may therefore be worked out.
- For successful vegetable / fruit / flower cultivation, organic farming practises need to be followed. Artificial techniques should be discarded in the production of vegetables/fruits that cause human health hazards. This creates a sustainable ecosystem that in the long run, mitigates barrier effects.
- There is a clear need to protect agricultural land from industrial use. Government must put in place steps to avoid industrial use of agricultural land; eco-friendly environment thereby mitigates few barrier impacts.
- Natural pesticides are cheaper alternatives to artificial fertilisers that are eco-friendly. Sharing of information between government agencies and farmers must be regular in order to remove obstacles.
- To expand the idea of walk-to-work, pedestrian-friendly infrastructure must be built. When more fuel-driven cars do not ride on highways, air pollution can be minimised.
- To be designed for water storage, rain water collection systems. This raises the water table, giving rise to an improved economy. In implementing rain water harvesting structures, the government must be strict.
- Proper spacing and ventilation to be provided for planting plants. The terrace garden, proportional to the ground area, can be grown to grow flowers / vegetables. This kind of understanding makes the world sustainable.
- Public transport infrastructure needs to be successfully built so that the intensity of private car traffic is lower.
- Wireless communication systems would allow organisations, consumers and providers to communicate more quickly. Paper use is therefore limited. Whenever required, new information databases can be created.
- Construction businesses, manufacturing enterprises, mills must use customised robots for the handling and transport of materials. The use of materials for the production of robots must be eco-friendly to the fullest extent possible. For practical and environmental needs, robots also have to be reliable and sustainable. This approach mitigates few obstacles, such as lack of resources, lack of demand and lack of sharing of information. This strategy entails more costs, but will

produce reliable results in the long run. Robot operations can be coordinated with server networks for efficient supply chain. Robots can combine SC and logistics quickly.

FLUCTUATION IN GSCM IMPLEMENTATION LEVELS

In general, all challenges are inter-related. The consequences of other barriers are immediately overcome by mitigating the influence of one barrier. But in the future, minimising the effect of one barrier could give rise to a new barrier. The media will raise awareness of greener goods and an environmentally friendly climate. In the business environment, government subsidy schemes would grow entrepreneurs. There is the growth of self-employment and the advancement of society as a whole. These small businesses can be purchased by major market players in the long run and hence win-win scenarios can be obtained in the business sphere.

When individuals are conscious of eco-friendly products, the product producing company's management would immediately demonstrate dedication to these materials. Even the scenario of the corporate vision will adjust accordingly. Technologies for connectivity promote faster knowledge sharing. The Internet enables individuals to easily share opinions. Also, paper use is limited. Another alternative to be tried in a significant way is recycled paper. The grudge for producing environmentally sustainable products would also be felt by other rivals.

New problems can arise in the Green supply chain in the future while eradicating few barriers. It is a cycle, however. New challenges will arise and will be solved by more study. When one material is increasingly produced because of its advantage, it means that we are depleting another material at the other end. Thus the level of implementation of GSCM fluctuates from one level to another depending on the relationship between the natural worlds.

CONTRIBUTION OF ECO-FRIENDLY MEASURES FOR GSCM IMPLEMENTATION

Environmental protection from natural disasters

Eco-friendly buildings have to survive cyclones, strong winds, earthquakes. In the event of an emergency, people must know how to use fire extinguishers. Nearby seashore areas where people live need to provide adequate knowledge of the tsunami and need recovery centres. The basic needs of individuals to protect the environment must be fulfilled by

these centres. In order to recreate the areas impacted by volcanic eruptions, we must have expertise.

Errors of humans

We need fire extinguishers in the event of a fire. Fire extinguishers must be made of used metal, thereby lowering costs. The strength of the used metal must also be measured. Radiation leaks, injuries and spills are likely to affect the people nearest to the facility, animals and ecosystems.

Negligence by humans

Although air pollution causes serious harm, the essence of the pollutant is such that through proximity, not through space, it causes further harm. For some days in critically polluted areas and not in other regions, cars are prohibited in metropolitan cities. People, animals and habitats are threatened by smoking, division in public areas. One individual exploits the weakness of another individual to sell a commodity. It is a common occurrence for individuals to be addicted to a certain lifestyle and abused by another group. Money is the criterion for creating individuals and destroying individuals. By default, all forms of individuals are inter-connected. Nature thus generates nature and kills nature. This process is supported by resources, individuals, wildlife and habitat.

Ergonomics Sciences

Behaviour pattern of people depends on lifestyle. For people's ease, policies are framed. More comfort, however, causes diseases. There must also be a balance between comfort and a structure for action. In formulating environmental rules, care must be taken so that people's rest is not disrupted too much. People also need to realise that their contribution to environmental remediation is significant.

Ecosystem for plants and livestock

Plants require water and sunshine. Plant organisms can be killed by too much sunshine and rain. Thus every organism needs a comfort zone. We must ensure water does not stagnate around plants during rain. For plants to shield them from excessive sunshine, adequate shade must be given. To survive, animals need the right food to eat. To balance plant and animal habitats, sustainable environments must be created.

CONCLUSION

It was found that the research was able to provide insights into key GSCM and contextual relationship variables. It offers potential for leveraging the advantages of GSCM practises for the domestic appliance industry. It gives a snapshot of an overview of a sustainable

world. It also offers the significance of the index of tolerance assessment that can be used in future case studies. The current report has drawn up a number of significant guidelines. Thus this research work paves the way for best practises in the environment. The reasons for taking up this research paper were justified. In recent years, the media has been contributing to the green economy. There are a lot of things here. Government of India advertising for a healthier world in several countries, health awareness camps are organised, leading individuals towards a world free of disease.

In the past decade, dragon flies and bats used to consume mosquitoes. The Dragon Fly consumes mosquito larvae. But due to environmental pollution, animals such as dragon fly and bat have eventually become extinct. Electro-magnetic radiation makes life impossible for certain animals. So the mosquito population has risen. Diseases are spreading more rapidly among individuals. Mosquitoes spread diseases from one person to the other.

It is important to avoid the use of plastic and the government of India is taking the right steps. Bio-plastics have come as the right alternative. They are bio-degradable, sustainable and eco-friendly. Bio-plastics would become affordable for all individuals in the long run. Another option is bamboo toothbrushes. In this way, to render eco-friendly goods and processes, renewable resources have to be used. Once these types of transformations occur, the degree of implementation of GSCM increases there will thus be improvement in the tolerance measurement index.

In eco-friendly settings, stakeholders need to collaborate. These guidelines will help to take the right steps for professionals and policy makers.

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