

CHAPTER 12: IMPLEMENTATION OF GREEN SUPPLY CHAIN MANAGEMENT AND ITS PRACTICES IN PETROLEUM INDUSTRY

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INTRODUCTION

In the last few decades, environmental challenges have grown and spread faster than wildfires, country by country and region, due to climate change, which is a significant cause of anthropogenic global warming. Moreover, a lack of environmental assets, as well as pollution of the air and water, harm plants and animals, as well as people's health, resulting in conditions such as hypertension, lung disease, chronic lung obstructionist illness, blood clot, Diarrhea diseases, Typhoid, Infections, Typhoid, and Norovirus.

The purchase of raw resources, manufacturing / reprocessing, inadequate transmission / marketing, and graphics are all included in Hervani's definition of green supply chain management. Steve includes suppliers in pollution control practices, industrial design, material selection, supply chain efficiency, and environmental practice execution. Supplier behaviour is among the most severe concerns that businesses face these days. As a result, the selection and evaluation of providers are critical themes. In terms of methodology, supply chain, business functions, environment protection, life cycle concept, business comparative position, link concept, game theory, test methodology, decision-making innovation, and other concepts provide the foundation for linked studies. It included a complete set of sustainable supply chain tools, as well as judgement call courses, collaboration methodologies, prevention measures, and the benefits of linked research partners' moderate firm distribution organisations.

In short, the knowledge base for sustainable supply chain management is rapidly growing.

Sustainable Procurement is the concept of combining a restoration into a common supply chain (GSCM). Processes include product design, procurement and material selection, manufacturing and production, as well as the construction and operation of lifelong care.

LITERATURE REVIEW

In the 1980s, the Terms of Reference (SC) and Team of Supply Chain Management (SCM) were first introduced, and in the 1990s, they became widely used (Jones & Riley 1985). The concept of SCM, are the most recent management objectives. A network of suppliers, distributors, and consumers is commonly referred to as a supply chain.

Procurement, marketing (distribution channels), delivery, and performance monitoring are just a few of the areas that have altered. Asset management, customer and supplier relationships, delivery time, product development, and procurement are all issues to consider.

According to Thailand's Sayam Aroomsrimorakot and Meena Leiphrakpam (May 2020), variables were vital in the implementation of GSCM's strategy for the electrical or electrical business in Thailand to assist newcomers to the electronics industry.

This research study, according to A. Wyamahare and N. Dawatta (2017), provides insight into the use of GSCM in construction firms. An important review of the literature to highlight the knowledge gap around GSCM awareness and adoption in construction firms. As a result, the effective implementation of GSCM in buildings companies was produced in this study. Technology, information, finance, job creation, and management are all major impediments to GSCM adoption.

RESEARCH OBJECTIVES

The goal of this research is to figure out how to use GSCM as well as its processes, as well as to assess GSCM. The research's precise goals are as follows:

Without a doubt, a main goal of the green supply chain is to reduce pollution of the air, water, and waste, whereas eco-friendly performance as well enhances manufacturing performance in terms of limited ecological impact, product recycling and recycling, lowering manufacturing costs, resource efficiency, and efficiency. Building a positive image and increasing client satisfaction are just a few of the benefits.

RESEARCH METHODOLOGY

Types of research

Quantitative Analysis

SCI is systematically searched for goods relevant to the green supply chain period from 2000 to 2021 in order to analyse the value. The Supply Chain, Green, Ecological, and Environmental

series are among the documents available. Green & Supply Chain, Environmental & Supply Chain, and Ecology & Supply Chain are three keyword combinations utilized.

Qualitative Analysis

A historical method to quality evaluation was applied in this study. By exploring and evaluating the area, times, circumstances we can get a greater understanding of history. From 2005 to 2017, this quality analysis method was utilized to look into the implementation and evolution of green supply chain management as recorded in SCI documents. The green supply chain research methodology was evaluated using a historical review approach for long-term reviewed literature and forecasts in this study. potential developments that can be done based on the findings of this review.

Population

All 29 petroleum marketing companies headquartered in Nairobi that have been members of the Petroleum Institute of East Africa (PIEA) in 2011 were included in the study's participants. In Kenya's petroleum marketing industry, to manage the green supply chain. Since the sample size was small and the region was easily accessible, the route was chosen.

Data Collection

In this study, important data was acquired utilising a combination of "self-regulatory" questionnaires. There are indeed open and shut questions in the questionnaire. The second piece of data needed for the investigation came from company records. The questionnaire in this study is divided into three sections: GSCM procedures, GSCM performance, and GSCM driver. GSCM questions are answered (1 = I don't believe, 2 = scheduling to take into account it, 3 = currently considered, 4 = to a certain extent, 5 = full performance), GSCM performance questions are answered on (1 = not all, 2 = minimal, 3 = degree specific, 4 = extremely important, 5 = very important), and GSCM performance questions are answered on (1 = not all, 2 A 5 Point likert scale was used to answer pressure questions regarding touching or stimulating discovery (1 = not at all important, 2 = not essential, 3 = not caring about that as well, 4 = very essential, 5 = extremely important).

DATA ANALYSIS/FINDINGS & DISCUSION

Data Analysis

The goal of the study was to see if petroleum businesses in Kenya adopted GSCM methodologies. Following the completion of the data collecting test, the data is subjected to a loyalty and consistency analysis. This study analysed data obtained using percentage and

frequency to establish impact of the implementation of GSCM procedures and their performance assessment in order to determine whether they were implemented.

The overall difference, the coefficient of the important aspects with the waves from several types of data are grouped and shown in graphical representations, pie charts, and tables using the Social Scientific Statistics Pack (SPSS), Version 17; such that, the overall variance, the correlation of the vital aspects with the waves derived from multiple categories of data are grouped and shown in graphical representations, pie charts, and tables.

Respondents' details

For each element of GSCM, basic respondent data was analysed; the sample size was 66 percent. Supervisors in the sectors of environment, health, and safety accounted for 67 percent of all responders to the headlines. Project managers made up 33% of the group. The following are the findings gathered from 19 respondent companies:

GSCM practices

To indicate the level to which their organisation runs, respondents were asked to score each GSCM characteristic for the actual GSCM practice on a 5-point Likert scale (1 = unimaginable, 2 = intending to consider it, 3 = evaluating current, 4 = gaining further criteria, 5 = full implementation).

Environmental managing, sustainable, eco-design, green distribution, working with eco-design clients, and acquiring investments were all common items in the questionnaire for GSCM. Each GSCM feature has a specific set of capabilities. All 19 response fuel marketing businesses' points are summarised, along with an explanation of each stated characteristic.

FINDINGS

We'll look into the overall application of GSCM and its practises before doing the overview of secondary data collection.

The concept of adopting sustainability ecosystems. Design phase, acquisition and choice of materials, manufacture and production, health management operation, and termination are all examples of processes that fall under this category.

GSCM entails driving value creation throughout all supply chain companies in order to reduce the total environmental effect.

The GSCM's aim is to remove or decrease waste (energy, atmospheric carbon / chemical pollution, and solid waste).

GSCM's primary aim is generally to reduce Carbon dioxide emissions.

Other concrete benefits of the company include: high material efficiency, low waste output, great inventions, cheaper, reusing of immature material, increased profits, and the concept of value contributed to the customer base, among others.

Micro environment monitoring, green procurement, eco design, distributing, customer interaction, and investment acquisition are six focused elements with a wide range of factors that make up the GSCM processes. The mean values of the factors for internal pollution control range 3.58 to 2.42. The school values for green buy variables range from 2.74 to 2.37. The Eco design has a range of values between 2.74 and 2.42. The rates of natural distribution between 3.47 to 2.47.

DISCUSSION

Environmental management, investment recovery, and green distribution have all been identified as significant GSCM processes that petroleum marketing businesses in Kenya are now considering and, to some extent, implementing. Environmental management, investment recovery, and green delivery reforms have been costly because petroleum companies are forced to deal with ERC regulations and NEMA, along with benchmarks for waste management, micro-sulfur use, and environmental management, through a devoted and supportive management team. A function designed to meet with regulatory standards might be defined as this type of acquisition. This is in line with a study conducted by Chinese businesses, which found that control, competing, and advertising increased pressure and drivers, as well as those schedules.

CONCLUSION

The majority of studies were undertaken to determine the essential factors in the deployment of GSCM's strategy, according to the above assessment of projects in India and internationally.

This study can be used to other sectors as a model. One of the most significant components is control, which is accompanied by senior management involvement, market/consumer strategy, and organisation. In addition, the government should push the industrialization project in non-environmentally friendly industrial sectors to create business prospects by developing humanity, extending knowledge, technology, innovation, and innovation-based creative thinking. Another essential thing to consider is the organisational approach that will be required to support the deployment of GSCM. Economic advantages, rivals, cost savings, social / stakeholder, deferral, and other suppliers are other significant elements to consider because they might influence the implementation of the plan.

The application of GSCM is critical for every sector, such as petroleum, electronics, and others, with the aim of expanding the potential for business share growth of trade, making the organization's job extra totally satisfy customers, generating a company identity as a corporate social responsibility (CSR), and more for organisations to meet upcoming challenges. Finally, the review emphasized three other critical parts of GSCM implementation processes: the practice of generating green technology, a raw materials habit, and a strategy for gathering raw data.

The expense and complexity of GSCM appear to be a key barrier or impediment to its use. As a result, it can be argued that the performance appraisal findings from GSCM operations can be used to improve an industry's or organization's economic and environmental performance. Because environmental consciousness in India and beyond is still in its early stages, there is no understanding of private or corporate environmental impact, and hence the notion of GSCM is infrequently known. SME teaching and SCM adoption are ubiquitous, but most businesses and organisations are still unaffected.

It is possible that environmental standards, but also a plan and policy to raise general knowledge and care of the environment, are required in order to better comprehend the value of environmental actions, for both clients and for corporations or organisations. Basic education is a vital component of this. In order to maintain further environmental and economic development in the manufacturing sector, low-cost, easy-to-use alternatives are still required. Firms can increase their performance by using GSCM processes to increase product quality and delivery service. Efforts to control the green supply chain and assist firms in improving their environmental performance, such as lowering carbon pollution, reducing waste in the final chain, and forming efficient and effective partnerships with suppliers, would lower their cost of doing business Encourage easy reuse, recycling, and reproduction through communication. Firms can improve their environmental performance by integrating an environmental management system (EMS) with factory production plans.

SUGGESTIONS

Make the populations aware by organizing seminars and webinars

Managing waste through the process to reduce the unwanted wastage of resource

Providing a still full training to the employees on technology point

Formulating return process after product lifecycle

Making the process standardized and reducing the cost of manufacturing per product

Putting solar panel, bio diesel in the factory to reduce the dependency of petroleum products to reduce carbon footprint

Using ERP software to manage the production process from the resource

Standardized products coupling with environment friendly

Prior to implementing GSCM procedures, it is advised that manufacturing businesses priorities environmental sustainability and improve current business data systems to assess environmental sustainability actions and outcomes. Furthermore, supports enhanced performance and organisational performance. Finally, in a today 's highly competitive global business climate, it may be claimed that manufacturers can gain advantages by adhering to green standards. Overall, firms that execute GSCM procedures by cultivating tight partnerships with their partnerships can achieve more financial success.

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