

Impact of Sustainable Procurement in Supply Chain Management

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Abstract: Research on sustainable supply chain management has attracted more exposure in recent times. Even though SSCM has indeed been examined in both developed and developing countries, there's been little data on the implementation of SSCM procedures in India. This paper presents the insights about sustainable procurement methods and implementation followed by companies in Bangalore. Results showed that there has been a positive effect on implementing sustainable procurement in companies which minimised cost in production and distribution. There was also positive effect on environmental policies adopted by companies in sustainable procurement. This paper concludes by indicating further scope and research in this area.

Keywords: Sustainable, Supply Chain, Environmental Policies.

1. INTRODUCTION

The supply chain is often a network between a business and its suppliers for the production and distribution of a given product to final purchaser. It comprises a variety of operations, individuals, agencies, resources and information. supply chain often reflects the actions that it requires to get service or product from its initial state to a consumer.

In the last Hundred years, the development of supply chain has developed from the original focusing on improving fairly simple yet labour-intensive procedures to the modern technologies and operation of extremely complex multinational networks. Since 1980s, information technology has evolved at an incredible rate that it's far advanced when compared to manufacturing and distribution sector's ability to make sufficient use of new technologies.

supply chain requires a number of steps to get a service or product to a consumer. The steps involve transporting and processing raw materials to finished goods, transporting these items and distributing it to end consumer. The agencies involved in supply chain comprise manufacturers, supplier's distributors, transportation companies, warehouses and retailers. Supply chain elements include those functions which begin with invoice of an order to meet the customer's request. Which include marketing, product development, distribution networks, customer service, operations and finance.

2. LITERATURE REVIEW

Sustainability in Procurement is a revolutionary concept in operations and supply chain management. Manufacturing industries are improving their process day by day in switching from cost to quality-based supply chain management approaches centred on the consumer. This becomes an integral component in the supply chain method, with participants being conscious of the customer's rules and requirements (WILSON, 2019).

Considering the study results on Eastern African Portal Cement Company it is worth noting that there is a positive relationship between efficient sourcing activities and success in the supply chain. The introduction of green procurement methods, the participation of vendors and the use of automated procurement processes by procurement priorities and reservations; Electronic recruitment by EAPCC has been listed the lowest among the study variables, indicating that the organization has yet to completely realize the benefits that digital procurement will offer from the use of integrated systems (Commitment to sustainable procurement is on the rise, 2020 jan).

(HIGH, 2019) According to the 2019 Sustainable Procurement Barometer, published this week by sustainability consultancy EcoVadis and the New York University Stern Centre for Sustainable Business, more firms recognize the importance of sustainable activities, especially when it comes to procurement. Data collection from more than 400 supplier organizations of 200 organizations revealed that in the last year 81 per cent increased their commitment to sustainable procurement and that only 13 percent listed "executive support" as a challenge to implementing such policies. The report also identified the top three obstacles for adopting sustainable procurement practices: lack of internal capacity, failure to monitor sustainability success of suppliers effectively and efficiently and cost issues. Also, most firms consider sustainability progress from a compliance perspective, "It is a trap limiting incentive for performance for long term enhancements and limitations in engagement," the authors of the study said.

- 58% of respondents claim they will mitigate risk efficiently by competitive acquisition and 30 percent suggest their projects lead to cost savings.
- Advantages include innovation and new category access (25%) and procurement metrics improved by (24 percent).
- Over the past three years, 34 % of procurement organisations, human rights and labor practices have become more important and 33% say business ethics have become overtime more important
- The same change in environmental concerns was detected by only 22%

Current procurement structures utilize a wide variety of acquisition and partnership practices. These include new supplier codes of conduct and self-assessment that direct procurement approaches and supplier preference, relying on data and technologies, such as block chain, to provide deeper visibility into supplier and procurement functions. These includes self-assessment of suppliers ,guiding strategies to procure new codes of conduct and supplier choice, technology ,drawing on data and such as block chain, to give a bigger overview on procurement functions and vendors **(Ismail, 2016)**.

Strategic procurement empowers a business to take full advantage of the low-cost vendors, manufacturers and purchasing agents ' prices and skills. An easy-to-follow system built to provide you with a competitive advantage

- Growing cost savings
- Creating superior skills to build demand accelerating
- transformation by cross-functional cooperation
- Implementing a Centralized Inventory Management Framework
- Measuring Supplier Quality Linking Engineering (Technology) Processes

Addressing the supply chain issue and building more ethical supply chains in exchange should not be otherwise. An holistic approach is needed to incorporate sustainability into the company's operations. To do that, the requirements for assessing vendors need to incorporate profitability with standard measures such as quality and price. It should not be just that holistic approach. However, the key is to open the lines of communication between the relevant business areas to ensure positive environmental and governance practices, economic and social impact on the entire process of procurement **(Sachin K. Mangla, Kumar, & Ran., (June 14, 2019) .)**

86% of Carbon Disclosure Project (CDP) participant businesses reported economic gains from working closely with vendors to improve performance and shared return on investment, up from 46 per cent in 2009. This leap is proof of how competitive sourcing strategies tackle climate change and could have a significant impact on the supply chain, which accounts for most businesses. As a result of its carbon management strategy, PepsiCo, for example, has achieved \$60 million in opportunities for energy savings and a 16% per unit reduction in energy consumption across its drink plants.

- Carbon control requirements are gradually part of the procurement of suppliers – up to 17 percent from 11 percent and projected to be 29 percent in five years
- 72 percent of large companies have externally checked their results, yet only 39 percent of suppliers do so because of the high costs associated with it.

Sustainable procurement activities contribute to brand equity (Source: World Economic Forum: Beyond Sustainable Procurement) It results to increase in brand value to 15-30 %. 90 per cent had lower capital costs: 90 per cent of capital cost studies show that strong sustainability management requirements reduce business capital costs (Source: Oxford / Arabic). It also states few benefits of sustainable procurement Minimizes ambiguity in the business practices of an organization, Compliance with the social and environmental laws, improves consumer perception, Track expenses by pursuing a broader lifetime view, sets up existing products and services sectors, facilitate market exposure and improve assessment, reduce waste, and improve the efficiency of energy.

(Amann, 2014)CEO OF RELOGISTICS prescribes few steps to be followed to attain sustainable procurement A complete chart of your supply chain helps you assess impacts, threats and excess drivers. An important step in reaching sustainability is receiving output from your own workforce and from suppliers. You are still capable of influencing supplier and activities. Auditing and/or enacting codes of conduct can enable suppliers to support your sustainability efforts. Continued technological advances provide companies with once-inconceivable technologies for evaluating, refining, calculating and maximizing organizational systems such as inventory management, order and delivery processing and transport management. You can use insights obtained by data and machine learning to discover and explore gaps for efficient processes. Operating alongside competitors may be counterintuitive, integrating strategies on sustainable activities not only achieves the targets but also provides an opportunity for positive public awareness and increasing trust with business and customers. It's said that what you can't calculate can't be improved, so create sustainable objectives and monitor their performance. Draw on these successes then and using them as springboards to continue the efforts.

Research made on omanian natural gas and oil industry states Government has tried to control the sector and push companies to legitimize their acts by showing a level of social commitment in their supply chains, a reality that has influenced social responsibility in the selection process of suppliers. Institutional emphasis on organizational sustainability by stressing that external leverage is not necessary to develop social sustainability in organisations beyond the minimum requirements place **(R., 21018)**.

(Kaur, (2019)) his research on sustainability of public procurement for EU advises That Governments are well advised to incorporate environmental and socially responsible policy objectives into PP practices. Most importantly, while vendors are aware of GPP strategies and partly implemented GPP procedures, they are less conscious of socially responsible PP activities. There is therefore still a significant knowledge gap when evaluating the operation of SRPP and GPP practices. It ensures that procurement authorities and managers will increase the efficiency of suppliers ' inducements by contemplating the full range of environmental and social policy goals inside their tenders.

(Pullman, (2017)) Findings – From the findings of the survey, the authors found that grocery shoppers focus primarily on prices and are therefore dedicated to minimizing food and packaging. They are encouraged to buy local food depending on their market interests but express their willingness to buy local foods if the expense is acceptable. In the LCA of popular food products in multiple scenarios, eliminating food waste in different forms saved considerably more carbon emissions than decreasing packaging or mitigating transport (buying local) strategies

The findings delineate competitive procurement practices into three factors: establishing course, provider-centric security and socially oriented local supply. This shows elevated but supremely optimal levels of sustainable procurement activity. Prevailing attitudes identify commitments positive at the individual, sectoral and organizational levels to sustainable procurement. As important actors, tenants do not pursue efficient recruitment that generates an egalitarian problem.

3. RESEARCH DESIGN

3.1 Scope of the Study

The scope for this particular study especially in a developing country is a must as it gives an edge for the organization to top the market. If organizations use Sustainable procurement in Supply Chain, its win-win situation for the company and for the Suppliers/consumers.

3.2 Objectives

1. To analyze the impact of Sustainable procurement in Supply Chain.
2. To gain knowledge about Environment policies affect Supply Chain.
3. To identify the relation Sustainable procurement in Supply Chain and minimize in cost.

3.3 Limitations

- The study is limited to only Companies in Bangalore and not to any other state or country.
- The respondents are limited.

3.4 Hypothesis

H1: There is Positive relation between Sustainable procurement in Supply chain and cost saving in production and distribution.

3.5 Methodology of The Study

1. **Research Design:** The type of research design used in this research is both Descriptive and Exploratory design.
2. **Sample Area:** The data will be collected from supply chain Companies in Bangalore.
3. **Sample Technique:** Convenient sampling technique will be used as it will be much easier to select target Companies as per the preference and less time consuming.
4. **Sample Unit:** Companies who have been in supply chain for more than 5 years will be selected.
5. **Tools and Techniques:** Tools used to collect data will be through Primary data with the help of structured questionnaire. Techniques Used for the study } Scale of one to five } Likert Scaling Technique.

4. DATE ANALYSIS AND INTERPRETATIONS

H1: There is Positive relation between Voluntarily Sustainable procurement in Supply chain and Cost savings in production and distribution

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.167	1	8.167	23.902	.001 ^b
	Residual	2.733	8	.342		
	Total	10.900	9			
a. Dependent Variable: Voluntarily						
b. Predictors: (Constant), cost savings in production and distribution						

There is Negative relation between implementing sustainable procurement under presser from customers/Clients with increase in sales.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.167	1	.167	.109	.750 ^b
	Residual	12.233	8	1.529		
	Total	12.400	9			
a. Dependent Variable: [under pressure from customers						
b. Predictors: (Constant), cost savings in production and distribution						

The above two tables represent regression of two variables. The first table depicts whether Voluntarily Sustainable procurement in Supply chain plays a factor in Cost savings in production and distribution. Here, $p > 0.001$, which indicates that the regression model does significantly predict the outcome of the variable (i.e., is a good fit for data).

The second table depicts whether between implementing sustainable procurement under presser from customers/Clients with increase in sales. Here, $p > 0.750$, which indicates that the regression model does not significantly predict the outcome of the variable (i.e., it is not a good fit for data).

Hence, going by the H1, we can accept the First table which proves H1, where companies who have implemented sustainable procurement voluntarily have their sales increased over the years.

Statistics						
		We are developing an environmental policy statement	Our environmental policy statement consists of a commitment to promote environmental stewardship	Our environmental policy statement describes our company's Sustainability Initiative	We have formed an oversight committee to ensure the success of our environmental policy	Our environmental policy statement describes how our company explores opportunities to work with various institutes to help articulate, teach and advance the principles of sustainability
N	Valid	10	10	10	10	10
	Missing	11	11	11	11	11
Mean		2.60	2.80	3.10	3.00	3.20
Median		3.00	3.00	3.00	3.00	3.00
Mode		3	3	3	3	3

Objective 2: 2. To gain knowledge about Environment policies affect Supply Chain

The above test of descriptive statistics tell that company's environmental policy statement describes and company's Sustainability Initiative go hand in hand. This is what most of the companies follow than any other factor when it comes to environmental policies. This also reflects companies long term vision.

With regard to our suppliers, we do the following

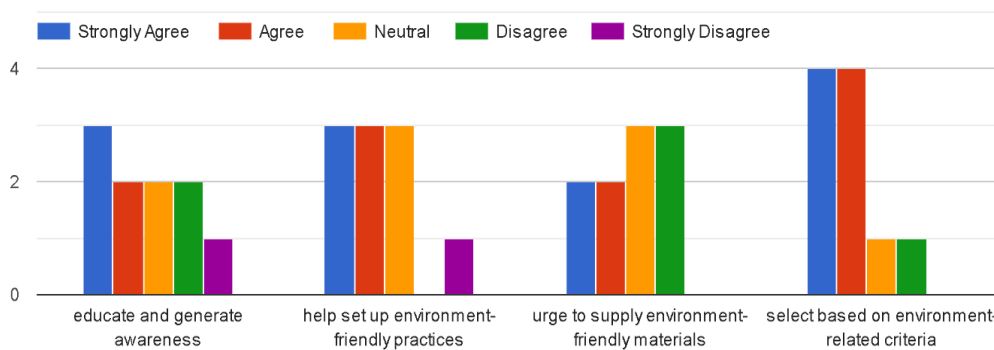


Figure 1: Supplier Requirements in supplychain

Interpretation from the above graph, it was found that Companies who follow sustainable supply chain also look for suppliers who fall under the guidelines set by the companies in sustainable procurement.

In packaging, storage, transportation and distribution of raw materials and finished products,from your supplier we focus on the following

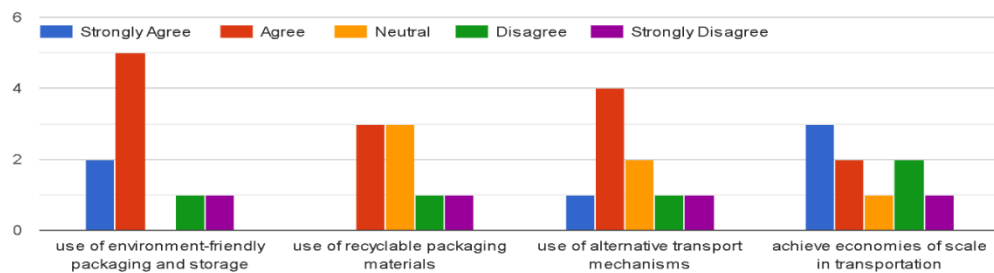


Figure 2: Focus on packing, storage and transportation

Interpretation from the above graph, it was found that use environmental friendly packaging and storage to store goods. This show the strong environmental policies that has been adopted by most of the companies, as Green procurement is the future.

5. CONCLUSION AND FURTHER STUDY

It is important for companies to come forward and adopt to sustainable/green procurement in supply chain management. Developing Country like India has a long road ahead to implement these sustainable procurements. More companies should look at ways to implement these sustainable strategies to get better results. This overview can be used for further studies in Sustainable procurement in Supply Chain Management. Further it is advisable for any new company coming into supply chain to adopt to these sustainable procurements at an early stage, which gives these company an upper hand.

Longitude research studies with larger sample size will lead to a better understanding for the subject, and will be an interesting study with a wider area to cover and have a larger perspective on this topic.

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