

**“A STUDY OF OPERATIONAL STRATEGIES AND [JPI1] GREEN SUPPLY CHAIN PRACTICES IN AUTOMOTIVE MANUFACTURING INDUSTRY.”**

**Madhup K. Gandhi**, research Scholar with Dr. D Y Patil Vidyapeeth (Deemed to be University) Pune, India and adjunct faculty with Symbiosis Institute of Management Studies, Symbiosis International (Deemed University), Pune, India

**Dr. Chetan Chaudhari**, director, Global business school and research centre, Dr. D Y Patil Vidyapeeth, (Deemed to be University) Pune, India

**Chirag M. Gandhi**, MBA student with Symbiosis Institute of Management Studies, Symbiosis International (Deemed University), Pune, India

## **ABSTRACT**

In today's scenario, the global warming has created interest among researchers for green supply chain. The green supply chain implementation in organizations require it to be synchronized with organization operation strategies. There are various concepts of green supply chain and multiple operation strategies. How these are interlinked is an issue for the organizations.

There are more than 25 green supply chain concepts and more than 20 operation strategies and sub strategies that organizations follow. The article looks at the interlinkage of these and which are the more important to focus on. The article also looks at the key enablers of green supply chain. It looks at green supply chain focus area and has identified about 7 green supply chain focus areas. The total number of enablers identified are 12. The paper analyzes the research done year wise as well as country wise. The majority of the literature has been considered after the year 2000. The paper analyzes the major concepts of green supply chain. The findings are based on the analysis of literature from various journals and articles from websites. The findings are represented in graphical manner to highlight the key concepts of green supply chain and operation strategies.

**Key words:** Supply chain, Operation, Strategies, Green, Enablers, automobile, automotive.

## **Introduction**

In recent years, climate changes such as global warming have been a topic that has attracted a lot of interest world over. Such changes have necessitated the need to identify the causes and solutions to these climatic changes. This is why we need to look at the green supply chain application in automotive industry.

The Green Supply Chain Management (GSCM) defined as “integrating environmental concerns into the inter-organizational practices of SCM including reverse logistics” There are nine concepts based on the principle of GSCM: complexity, ecological Modernization, information, institutional, resource-based view, Resource dependency, social networks, stakeholder, and transaction costs Economics. They form the basis for GSCM implementation & provides insights for research extensions in GSCM. Green Supply Chain Management (GSCM) is one of the recent innovations for the enhancement of capabilities of Supply Chain Management. In this paper, we aim to study the various activities of the Supply Chain processes of the various Indian Automotive Manufacturing Industries how much % of the green factor are involved in their supply chain activities from the procurement of the raw material to the transportation of the final product.

The major four activities of the supply chain; namely Green Sourcing and Procurement, Green Warehousing, Green Packaging, Green Transportation will be being covered throughout the research. This paper looks at interlinkage of these green supply chain concepts with the operation strategies of organizations. The paper is based on review of 82 papers shortlisted out of total 178 which had the relevance to the topic of studying the important interlinkages between operation strategies and GSCM concepts.

The paper will focus on understanding how operational strategies relate to developing Green Supply Chain Management model of sustainable development for modern projects, which will unite the

economic benefits, environmental protection, resource utilization and biological balance for the manufacturing industry.

### Objective of the study:

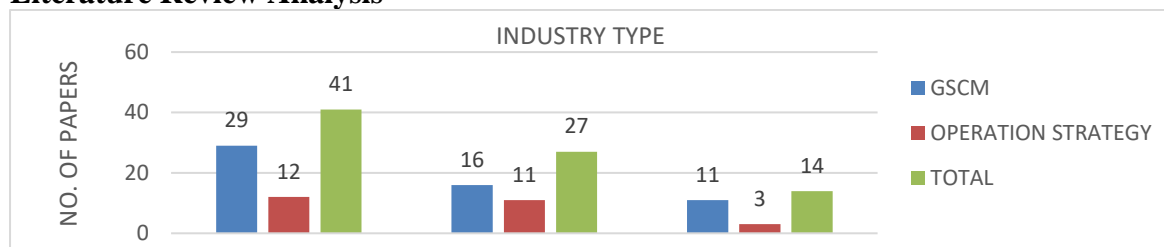
The objectives of the study are as per following:

- To identify different Operational Strategies
- To identify different Green supply chain concepts.
- To identify the green supply chain enablers

### Methodology

The study was conducted by based on data [JPI2] related to operation strategies and green supply chain concepts and their interlinkage. For this 178 papers were considered out of which 82 were found to have some relevance.

### Literature Review Analysis



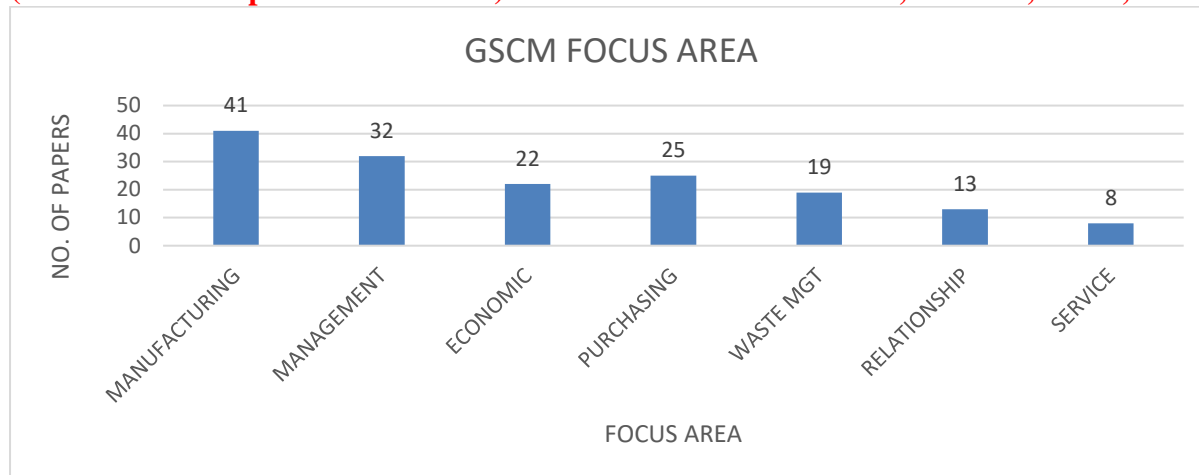
**CHART NO. 1**

The analysis as per chart no. 1 shows that out of 82 relevant cases, 41 papers were related exclusively to automobile industry, 27 were related to automotive industry and 14 papers had considered multiple industries. We also find that out of total 82 cases, 56 cases were related mainly to green supply chain concepts and 26 mainly considered operation strategies.



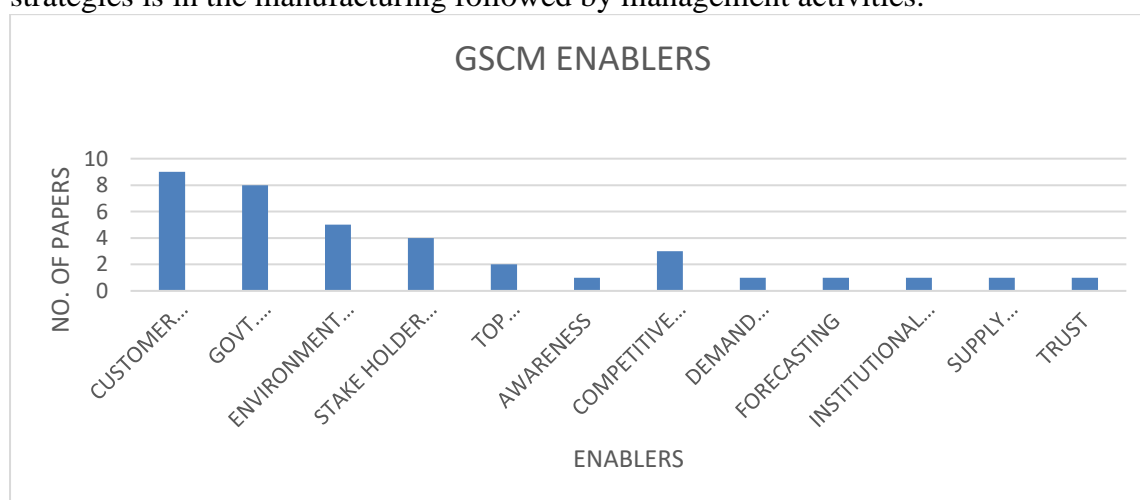
**CHART NO. 2**

Chart number 2 indicates that the focus of green supply chain has increased over a period of time and more and more people are considering importance of green supply chain now than earlier.



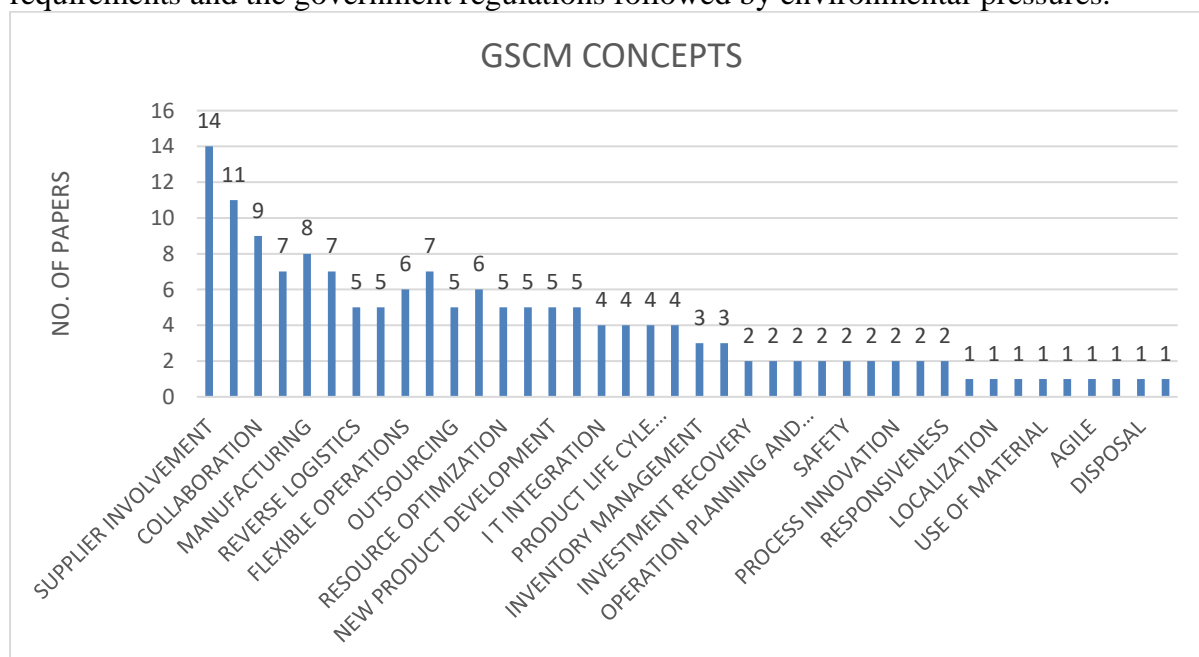
**CHART NO. 3**

The chart number 3 indicates that the most focused area for green supply chain and the operational strategies is in the manufacturing followed by management activities.



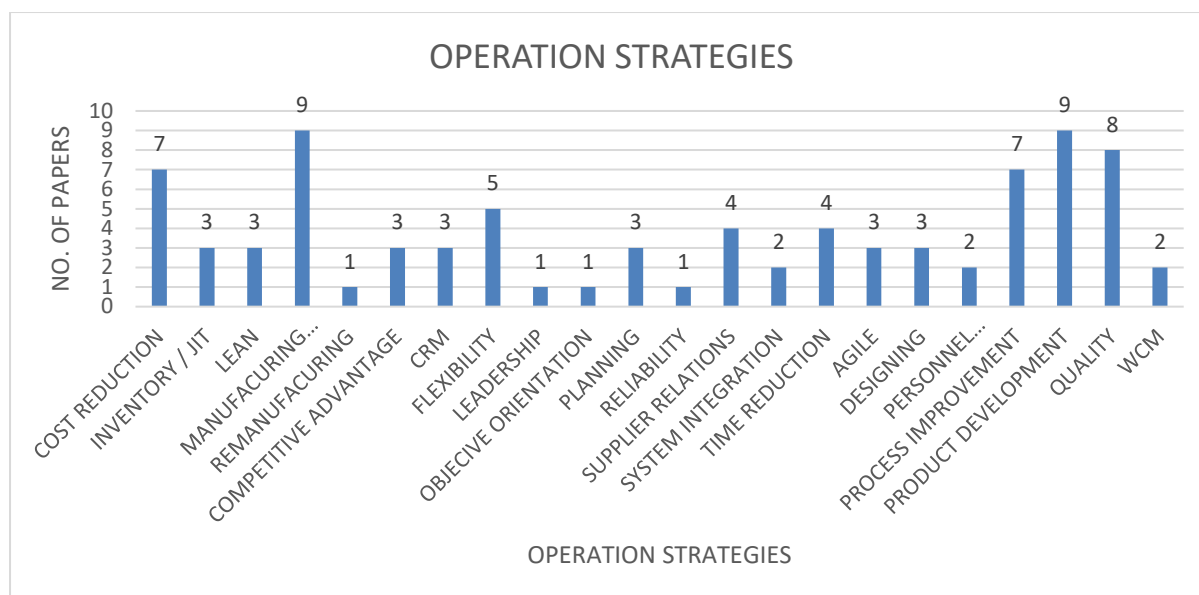
**CHART NO. 4**

The chart number 4 data shows that the major enabler for green supply chain is still the customer requirements and the government regulations followed by environmental pressures.



**CHART NO. 5**

The chart number 5 data clearly indicated that the most important concept in green supply chain is supplier involvement followed by supplier collaboration and then the manufacturing processes.



**CHART NO. 6**

The chart number 6 data indicates that organizations focus is strongly related to product development, manufacturing capability and quality management followed by cost reduction and process improvement.

### **Findings:**

As can be seen from the data, we can find that there is no single operation strategy which is very important and at the same time no green supply chain concept which is highly important compared to others. The organizations find that more or less most of strategies are important for them but we can mainly group them as strategies related to new product development, process improvement for better quality and cost reduction.

Green supply chain concepts appear to be more focused on relationship management with the suppliers which is closely related to new product development.

### **Conclusion:**

Thus by analyzing data from charts, it is clear from the data that there is an interlinkage between the operation strategies and green supply chain concepts but all the cases talk about partial strategies and partial green supply chain concept. None of the papers have considered all the strategies and all the green supply chain concepts. Thus, there is future scope for studying the combined interlinkage between the operation strategies and green supply chain concepts.

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