

## **A Review Green Supply Management Indian Automobile Industry**

**Dr. Pankaj Gupta**

Associate professor, Department of Commerce, JV Jain college, Saharanpur

**Mrs. Pooja Vidyarthi**

Research Scholar, Ch. Charan Singh University, Meerut

### **Abstract**

For those countries and cultures that have not yet embraced the Fourth Industrial Revolution (4IR), it has brought with it both good and potentially dangerous consequences. According to this study's literature evaluation, the 4th Industrial Revolution (the 4th IR) has the potential to boost Nigeria's automobile sector by requiring a new set of skills and abilities. After conducting an inductive content analysis of empirical data based on the contents and advantages of 4IR; green car and skills necessary in the future; Nigerian automotive sector, and the future of green car and the 4IR in Nigeria, a systematic review was undertaken. In the study, it was found that the government has little interest in green automobiles. The lack of a viable automotive industry in Nigeria, as well as a lack of access to enough electricity and knowledge, have all been cited as obstacles to the widespread use of green cars in Nigeria. In other regions of the world, it has been determined that competencies such as those listed below are essential for any 4IR operation. It is thus recommended that the Nigerian government reassess its approach on supporting green transportation; the electricity sector should be revamped to power electric vehicles coupled with the education sector to build the competences required for the 4th Industrial Revolution (IIRC).

**Keywords:** India's automobile sector, the green supply chain, and interpretative structural modeling (ISM) are some of the terms used to describe this research.

### **INTRODUCTION**

Today's industrial systems are more concerned with social and environmental issues in addition to financial ones, but the current production frenzy fails to take these considerations into account. Consider the car business, which is estimated to be the biggest industrial sector in the world according to official data (Lettice, Wyatt & Evan, 2010). There has been a lack

of attention paid to commercial and environmental manufacturing challenges in developing countries compared to mature economies (Zhu & Sarkis, 2006). In this regard, India is a major player in the automobile industry. Manufacturers from throughout the globe have set up shop in India, as has been well documented. It is possible to claim that environmental concerns are more important in terms of understanding the varied repercussions. In place of conventional methods, green supply chain management (GSCM) It has been shown to be the most effective method for reducing an organization's environmental footprint while simultaneously improving production performance (Gilbert, 2000). (Katiyar & Barua, 2013). As a result, it can be stated that GSCM implementation in the vehicle sector requires a number of enablers and obstacles.

#### Automotive Industry in India: GSCM

The supply chain in the Indian automobile sector has seen a substantial shift during the last several years. Singh et al. (2004) reports that several global vehicle manufacturers have built production bases or international purchasing centers in India after deregulation. As a result, vehicle companies have been forced to innovate in order to lower prices, increase quality, and improve supply chains.

Because of the growing public outcry over cars as the primary source of pollution, businesses are under enormous pressure to not only improve their technology and implement more effective emission control devices, but also to implement environmentally friendly practices throughout their entire supply chains (Shukla et al., 2009). Many top vehicle manufacturers, including as Hyundai Motors, Toyota, and BMW, have included "green" requirements into their SCM in response to increased public awareness about environmental concerns.

sharing and benchmarking can be expanded in China. Conclusions are drawn from the survey, the site visits and the interviews.

China's government and foreign corporations operating in China are promoting different environmental management concepts in various industrial enterprises because of the relative shortage of resources, growing international demands, and the possible pressure of "green walls." ISO 14001 and GSCM are examples of environmental impact assessments and measures that have recently been implemented. It is important to solve China's environmental challenges since the long-term costs of environmental deterioration may not be as readily handled as in more industrialized countries. The findings of surveys and site visits to Chinese manufacturing companies are presented in this study. More than a hundred people

participated in the survey, which focused on GSCM drivers (or pressures) and practices in China. These inter-sectoral linkages inside Chinese manufacturing businesses have never before been examined. GSCM drivers and practices in China's automotive, thermal power generation, and electronic sectors are examined to see whether there are any variations. On the other hand, we looked at which industries are already well-versed in a variety of drivers (or pressures). The outcomes of this study might have an impact on how environmental regulations and corporate environmental expertise are developed and implemented.

According to global data, the car industry is the world's biggest industrial sector. There has been an ever-increasing need for automobiles as the global population continues to grow [2]. Because of its environmental impact, however, the manufacturing sector has been widely publicized [3]. Transport contributes significantly to pollution in the ecosystem as a whole, particularly via emissions of filthy air and extensive use of nonrenewable petroleum [4]. As a result, an unseen force is pushing almost every firm to incorporate environmentally friendly and sustainable practices into their operations in order to remain competitive on the global stage. Consequently, in order to remain competitive in today's market, it has been common practice to get on the green manufacturing bandwagon. For nations all over the globe, Malaysia's strategic location in the heart of Southeast Asia has lately become a platform for expanding their enterprises in the area. A number of the world's leading carmakers and component manufacturers have set up shop in Malaysia in order to take advantage of the country's burgeoning automotive and component industry markets. National Car Policy (NAP) 2014 has been issued by Malaysia's government to encourage local automobile manufacturers to produce Energy Efficient Vehicles (EEVs) to safeguard the environment while also improving efficiency. Among ASEAN nations, Malaysia is regarded as the leader in the development of electric vehicles (EVs).

### **Review of literature**

(Onyilo et al. 2020) studied "Green automobile technology competencies in Nigeria and the fourth industrial revolution" that was discovered, as well as Every facet of life has been transformed by the Fourth Industrial Revolution (4IR), yet those cultures and countries who refuse to accept it risk being left behind. According to this study's literature evaluation, the 4th Industrial Revolution (the 4th IR) has the potential to boost Nigeria's automobile sector by requiring a new set of skills and abilities. An inductive content analysis of empirical data from publications has thus been undertaken based on the contents and advantages of 4IR; the green car sector in Nigeria and the 4IR abilities necessary; and the future of the green car and 4IR in the country of origin, namely Nigeria.

(Yu and Hou 2016) studied “An approach for green supplier selection in the automobile manufacturing industry” that was discovered, as well as An analytic hierarchy process (MMAHP) coupled with multi-criteria decision making (MCDM) and used MMAHP model for addressing the green supplier selection issue will be the focus of this work. Supplier selection is often a multi-criteria decision making (MCDM) issue, which means that both qualitative and quantitative considerations must be taken into account. This research makes use of the MMAHP to find the green providers most likely to satisfy a company's demands on a regular basis. Then, a Qingdao-based car manufacturing company's green supplier selection issue is examined.

(Kaur, Samar Ali, and Builes Jaramillo 2018) studied “International Journal of Services and Operations Management” that was discovered, as well as There are several steps to making a green product, starting with the purchase of materials and moving on to the logistics of the product, the process of making the product, and the manufacturing process. Indian car industry's green supply chain management (GSCME) is the focus of this research, which uses interpretative structural modeling (ISM) and Matriced' Impacts Croisés Multiplication Appliquée á un Classement (MICMAC) analysis to uncover the GSCME's driving and dependency power. For this study, we surveyed fifteen vehicle companies in the Pune-Nashik region to collect primary data through survey.

(Balon 2020) studied “Green supply chain management: Pressures, practices, and performance—An integrative literature review” that was discovered, as well as Over the last two decades, supply chain management has evolved significantly, notably from the midpoint of the third industrial revolution to the present fourth industrial revolution, with concepts like green supply chain and sustainable supply chain adoption in the industry. Because of this, engineering and management researchers have studied a variety of green supply chain management (GSCM) ideas and theories during the last decade.. In this research, the goal is to examine the existing literature on the pressures, practices, and performance of GSCM. More than 150 research publications published in high-impact academic journals were analyzed in the study.

(Kumar Sandeep, Kumar Sanjay, Gahlot Pradeep 2013) studied “Analysis of Interdependence Among the Enablers of Green Concept Implementation in Indian” that was discovered, as well as Government authorities, entrepreneurs, managers, and consumers are all paying increasing attention to environmental conciseness. This is an essential study issue in Indian context for managing environmental sustainability in the automotive supply chain. It was determined that fifteen key enablers for implementing a green concept in the Indian automotive supply chain had been reviewed in the literature and substitute talks with supply chain managers from the Indian automotive sector, respectively. It has been determined that the interactions between these enablers should be taken into account while coming up with a structural model.

## CONCLUSIONS

Environmentally friendly goods and processes may be achieved by adopting green supply chain management (GSCM). The Indian car supply chain has been recognized as having fifteen enablers for the implementation of the green concept. ISM has been discovered as a method for determining the context in which multiple enablers are connected. ISM approach

has led to the creation of a model. The top level facilitator is relative advantage, while the lower level enabler is government backing and regulation. In order to be successful, a company must have government backing and regulation, enough financial resources, top management commitment, communication with appropriate IT resources, organizational support and encouragement, and adequate IT resources. It has been shown that a healthy organizational culture and a high quality workforce with a willingness to change are two of the key facilitators. Systematic economic recycling; environmental management programs; relative advantage; customer education and assistance; use of green packaging materials; and environmentally friendly distribution have all been cited as critical enablers. Links may be made more easily thanks to well-organized preparation. The green automotive supply chain in India would be easier to execute if these enablers are strengthened.

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