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Hurdles in implementing sustainable supply chain management: An analysis of Indian automobile sector

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Abstract

Sustainability has been becoming an imperative research agenda among the researchers/practitioners to achieve ecological, societal as well as financial benefits. As the moment, Sustainable Supply Chain Management (SSCM) practices are at very initial phase in developing countries like India due to existence of many hurdles. In present research, an effort has been made to identify and evaluate hurdles in implementing SSCM in Indian automobile sector. Literature review approach and experts' inputs have been used to identify hurdles in implementing SSCM. Interpretive Structural Modeling (ISM) methodology has been utilized to understand the contextual relationships among these identified hurdles, their interdependence and hierarchy levels to implement SSCM practices in Indian automobile sector. MICMAC analysis has also been used to categorize identified hurdles according to their importance. 'Political Instability' has been reported as most driver hurdle in implementing SSCM. 'Unawareness among society about social practices' has been found as most dependent hurdle of the present study. We believe that, this paper will surely help business practitioners/researchers/scholars in broadening research in this emerging area and developing new theories/proposition. This paper may provide important future research directions towards increasing effectiveness of sustainability in the supply chains.

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Keywords: Supply chain management,;genetic algorithm; stockout and backordering; production and distribution planning; plant side restriction.

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Introduction

In last few years, climate change and its impacts on the society are gaining momentum; and managing sustainable issues in supply chain are becoming very important in today's business scenario to achieve the environmental, social and economic performances (Costello et al., 2009; Morali and Searcy, 2013; Mangla et al., 2014a, 2014b).

Therefore, business managers/practitioners are under intense pressure to lessen the harmful ecological and social impacts at the same maintaining economies in their supply chains (Ağan et al., 2014; Mangla et al., 2014c). Sustainable Supply Chain Management (SSCM) has been identified as an appropriate solution to balance environmental, social as well as economic benefits in supply chain (Luthra et al., 2014a, 2014b).

Although, the literatures on theory and practice of SSCM have been increasing rapidly but still many firms are exploring for the best ways to incorporate sustainability principles into their supply chain. SSCM practices are in very initial to recognize hurdles in the Original Equipment Manufacturing (OEM) firms as well as the supplier firms to OEM towards effective implementation of SSCM to achieve associated benefits (Ageron et al., 2012). Therefore, it has been observed important to identify and analyze various hurdles in implementing SSCM by taking a case of Indian automobile sector. This research has the following objectives, as follows:

- Identification of various hurdles in implementing SSCM from Indian automobile sector viewpoints;
- Finding contextual relationships among identified hurdles and their hierarchical levels in implementing SSCM
- Development of a hierarchical structural model of these hurdles in implementing SSCM.

Literature review methodology has been acknowledged as a suitable and valid approach (Luthra et al., 2014c) for identifying hurdles in implementing SSCM. ISM has been identified as an appropriate tool to indentify the contextual relationships among elements and to develop hierarchical structural model of these hurdles. MICMAC analysis has been used to validate the developed ISM based hierarchy structural model.

1.1. Structure

Hurdles in implementing SSCM have been identified through reviewing the relevant literature in Section 2. Methodology used in the present research has been explained in section 3. The results and discussions of the presented research have been presented in Section 4. In the last section, Conclusions have been drawn with limitations and directions for future research.

2. Identification of hurdles in implementing SSCM

We have explored various available literatures: national and international journals and proceedings of national and international conferences; and research organizations. Important Ten hurdles in implementing SSCM have been identified from extensive literature review and explained as follows:

2.1. Lack of legislative framework

Legislative framework may be an important for creating a favorable environment for businesses to adopt SCCM by providing policy frameworks and can ultimately create demand for sustainable products (Luthra et al., 2010; Gouldson and Murphy, 2013). Many researchers reported that there is lack of legislative frameworks and policies, which supports green/sustainable efforts in SCM (Mathiyazhagan et al., 2013; Muduli et al., 2013a; Govindan et al., 2014).

2.2 Political instability

Regulatory framework and its related policies to implement green/sustainable issues in any country depend upon the politics of that country. Normally, Regulatory bodies not succeed to expand appropriate support to sustain a green environment issues due to political instability (Govindan et al., 2014). Political instability, corruption and lack