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Supplier selection using social sustainability: AHP based approach in India

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ABSTRACT

For over a decade, sustainability has been a major concern for organizations as awareness about environmental degradation, natural resource depletion and climate change has increased. In addition, voices raised by social organizations on various social and environmental issues in developing countries have forced organizations to focus on sustainable manufacturing practices. This research mainly focuses on socially sustainable supplier selection through social parameters by using the analytic hierarchy process (AHP) in decision making. This methodology demonstrates the development of social sustainability indicators, including equity, health, safety, wages, education, philanthropy, child and bonded labour which are validated by experts. The study also describes how the above mentioned metrics may be used to prioritize alternatives for decision making using AHP. The study further demonstrates practical applications of social sustainability dimensions in selecting suppliers for manufacturers operating in emerging economies. Three case studies illustrating this methodology have also been included. The case studies further analyse the results of the methodology along with the tradeoffs supply chain managers make. Findings show that manufacturers of electrical, automotive and cement industries were able to select suppliers based on the social sustainability score. This study helps supply chain managers integrate various social dimensions into the supply chain function. The results of the study draw the attention of all stakeholders towards social dimensions by necessitating the importance of social conditions upon suppliers.

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1. Introduction:

The study of sustainable supply chain management has gained momentum during the past two decades. Although the studies focus on the three pillars of sustainability Elkington [35] - economic (profit), environment (planet) and social (people), the social aspect has not been explored much due to the “humanness” and the difficulty in getting tangible outcomes

from it [16, 4]. On one hand, there are measures such as the Sarbanes-Oxley Act, the Dow Jones Economic Index (1896) along with other financial reporting standards that require corporations to be economically sustainable, and on the other hand, tremendous research has been done on the environmental aspects of sustainability in the supply chain and regulations such as ISO 14001, REACH, CTS, EMAS etc. have been framed for green sustainability. However, very little has been done in terms of social sustainability in the supply chain because of very complex

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human issues involved [90, 4]. While the Brundland definition (1987) described environmental and social aspects together, specific research on social aspects was very limited. The focus was regained after the UN's Rio conference in 1992 which emphasized the human aspects of sustainability in its Agenda 21.

Social sustainability has increasingly been gaining momentum amidst strong voices being raised for social issues that hold not only the stand alone corporation responsible, but also other partners in the system. One such important stakeholder is the supplier; suppliers are becoming an integral part of a bigger value chain network. Many a time, unethical actions of suppliers impact the corporate image and business significantly. For instance, McDonald's, the largest fast food supply chain came under fire because of "expired meat" supplied by its vendors to McDonald's restaurants in China. This resulted in the suspension of burger products in Shanghai, China and US. The image of the corporation was tarnished because of the acts of the supplier. Yet another case of unethical practices came to light in US hospitals, where patients were billed for unwanted medical procedures that resulted in huge fines imposed on such hospitals by the US government. The US government also created the Health Care Fraud Prevention and Enforcement Action Team (HEAT) for regulating frauds in hospitals. These are just a few of the many incidents that came to light due to the pressure from social organizations. All these unethical and unsafe practices have stained the image of the corporation and such problems cannot be ignored [83].

In developing countries, there were numerous other instances. For example, most of the "shrimp" sold in Wal-Mart stores were procured from a Thailand based supplier "Matsushita" between December 2005 and November 2006. The working environment in this manufacturing unit was so bad that workers were not provided even basic amenities such as health, safety, sanitation, hygiene, drinking water etc. Further, they were forced to work as bonded labour. This was questioned and highlighted by NGOs and human rights activists [22]. India is ranked among the top four manufacturing destinations in the world because of the low cost and availability of skilled manpower. However, the recent discovery of over 2.7 lakh child and bonded labourers across the country put the country on the back seat [74]. The majority of these incidents highlight the failure of the upstream supply chain involving suppliers and their installations. Corporations need to be more prudent in auditing their supplier base to avoid such unwarranted problems which not only affect the business, but also the brand image. More recently, in developing countries, the awareness created by various stakeholders and social organizations on wages, employment, equity, safety and living conditions mandated the companies to find ways and means of socially sustainable manufacturing and sourcing practices. Many of the multinational corporations operating from the western parts of the world depend on developing countries for supplies because of the low cost advantage. Most of the developing

countries are plagued with various social issues such as living conditions, safety, health, poverty, child and bonded labour etc. [10, 82, 107]. Nevertheless, supplier selection in emerging economies is an important decision corporates need to make to achieve strategic advantage. In manufacturing, supplier selection plays a vital role among other dimensions [62]. Though many scholars explored methods for supplier selection based on essential supplier selection parameters such as cost, reliability, lead time and environment, the usage of social sustainability parameters was explored less. The authors attempt to address this gap by exploring various social sustainability parameters and determining how these parameters can be incorporated in supplier selection. This research is amongst the very first studies carried out in socially sustainable supplier selection as extant research on social sustainability in the supply chain is qualitative in nature and more of a case study [90]. Therefore, the aim of this research is twofold: one, to find out what are the social sustainability parameters that can be applied to the supply chain, and two, to determine how these parameters can effectively be used in supplier selection? Answers to these questions can fill the above mentioned gap by addressing social sustainability issues in the supply chain. This could be a significant contribution to the existing supply chain literature, especially related to the supplier selection problem. Hence, the authors frame the objectives as follows.

- a) To identify various socially responsible supplier selection criteria, sub criteria and indicators.
- b) To develop and propose an AHP methodology in selecting socially sustainable suppliers.
- c) To conduct a pilot test in three organizations to validate the AHP model.

This paper is divided into four sections: literature review, methodology, application of AHP and discussion, and conclusion.

2. Literature Review:

The literature review comprises four different sections that include evolution of social sustainability, application of social sustainability in the supply chain, the importance of socially sustainable supplier selection and the importance of socially sustainable supplier selection in emerging economies.

2.1 Social Sustainability:

The philosophy of sustainability was found in the reports of the Brundland Commission [12] "Our Common Future: The World Commission on Environment and Development". However, sustainability and its importance were discussed well before, during the UN Stockholm Conference held in 1972. The Brundland Commission defined sustainability as "meeting the today's needs of people without compromising the needs of the future generations" [12]. The Brundland Commission report much emphasized on sustainability only in terms of the resource based view, but not in terms of society, people and culture

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