Do Green Supply Chain Management Practices Improve Organizational Performance?

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Abstract

Customers have begun to demand products and services that are sustainable and that are created through sustainable practices. Additionally, governmental entities have begun to insist that sustainability be a primary consideration of organizations. The question remains, however, whether these “green” practices lead to improve organizational performance? We develop and assess a green supply chain management practices performance model in an effort to answer this question.

We generally propose that the adoption of green supply chain management practices leads to improved organizational performance. The theoretical model incorporates the green supply chain management practices (internal environmental monitoring, green information systems, green purchasing, cooperation with customers, eco-design, and investment recovery) as the focal constructs with internal environmental management as antecedents and measures of performance (environmental, economic, operational, and organizational) as consequences. The constructs used in our study are briefly summarized below.

Internal environmental management is the practice of developing green supply chain management as a strategic organizational imperative through commitment and support of the imperative from senior and mid-level managers. Green information systems are information systems that are used to monitor processes to ensure environmental sustainability and track environmental information, reduce energy consumption, and monitor effluents. Green purchasing focuses on cooperating with suppliers for the purpose of developing products that are environmentally sustainable. Cooperation with customers requires working with customers to design cleaner production processes that produce environmentally sustainable products with green packaging. Eco-design requires that manufacturers design products that minimize consumption of materials and energy, that facilitate the reuse, recycle, and recovery of component materials and parts, and that avoid or reduce the use of hazardous products within the manufacturing process. Investment recovery requires the sale of excess inventories, scrap and used materials, and excess capital equipment. Performance constructs include Environmental, Economic and Organizational performance. Environment performance relates to the ability of manufacturing plants to reduce air emissions, effluent waste, and solid wastes. Economic performance relates to the manufacturing plant’s ability to reduce costs associated with purchased materials, energy consumption, waste treatment, waste discharge, and fines for environmental accidents. Operational performance relates to the manufacturing plant’s capabilities to more efficiently produce and deliver products to customers.

Data from a sample of 159 managers working for U.S. manufacturing organizations were collected and assessed using a structural equation modeling methodology. The study results generally indicated that 1) internal environmental management and green information systems capabilities are necessary precursors to the implementation of green supply chain management practices, 2) green supply chain management practices either directly or indirectly impact environmental and economic performance, 3) environmental and economic performance
indirectly impact organizational performance through operational performance. However, all hypotheses were not supported. In particular, green purchasing was not found to directly impact environmental performance as theorized. Coordination with customers, eco-design, and investment recovery were not found to do positively impact economic performance as theorized. In fact, eco-design was found to negatively affect economic performance. Further, neither environmental nor economic performance directly impacted organizational performance. Rather, they indirectly impact organizational performance through operational performance. It appears, then, that the positive impact of eco-design on environmental performance is cancelled out by the negative impact of eco-design on economic performance.

The sample size was relatively small considering the number of constructs and measurement items included in the model, which was a limitation of the study. Practitioners will find this study particularly useful since they are now provided with a framework for assessing the synergistic impact of GSCM practices on environmental, operational, and organizational performance.