

Investigating the Effect of Environmental Policy-Making on Implementation of Green Supply Chain

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ABSTRACT

The main objective of this research is to study the effect of environmental policy-making on implementation of green supply chain. In recent years, emergence of new technologies and creation of immense transformations in the world markets have made the supply chain management necessary more than before in a manner that different organizations for creation and retention of their competitive situation and position have to use of the theories of supply chain management. Preservation of environment has doubled the importance of the green supply chain in the recent years. The finding of this study implied that the improvement of environmental performance in the production process domain, management and optimization of energy consumption, management of wastes, education, investigation and organizational culture are as the most important priorities of policy-making for achieving the successful implementation of green supply chain. Finally, a lack of dynamic approach in organization as well as for suppliers along observance of environmental standards and social responsibility is a significant concern of green supply chain. Moreover, a lack of the appropriate information infrastructures and communications technology for the implementation of green supply chain is identified as the most important limitations for operating the environmental policies for the green supply chain implementation.

Keywords : Management, Green Supply Chain, Environmental Policy-Making, Organization

I. INTRODUCTION

Preservation of environment is one of the vital subjects of this decade and future decades (Power and et al, 2001). According to the report of World Health Organization (WHO), 24 percent of diseases in the world is arising from environmental pollution. Annual death of more than 13 million persons in the world is the result of being affected by diseases arising from environmental factors (Chen and et al, 2004). In the meantime, the consumers' disturbances for environmental accountability which have been also aligned with environmental laws, have exerted pressure on the number of growth trend of companies in order to design and create eco-friendly plans (Canver and et al, 2007). Therefore, the companies should reduce their negative environmental effects in production, distribution and supply of primary materials and energy consumption remarkably; otherwise, they will be repulsed by strict laws and demand of customers (Grant et al, 2002). In addition, merging new dynamic management with green supply chain concept generates

a significant knowledge intersection which results better environmental solution for businesses (Khorasani and Almasifard, 2017).

Thus, governments attempt to oblige the firms in an internalization of environmental destruction costs. Multi-national large companies have invested on the section of research and development of green production and stabilization of standards. Furthermore, they need that the suppliers guaranty the safety of handling the hazardous materials (Kim, 2007). This issue means that now, companies have embarked for cognition of environmental warnings which can be also as the competitive advantage source (Chi, 2005).

The final goal of policies and activities in management of green supply chain is to increase the environmental performance of supply; nonetheless, as long as the stimulators influencing on applying the green supply chain are not specified, applying other tools such as politics, will be ineffective. Therefore, for success in today's competitive world, the first and most important

step is to plan for identification of the criteria influencing on applying the management of supply chain. The organizations for appropriate design and implementation of strategy related to the management of green supply chain need to be informed of the stimulators for management of green supply chain. This issue means that for successful green supply chain utilization, the organization should have a collection of domestic sources and capacities. In many countries, applying the management of green supply chain is in the preliminary stages and mainly, is considered as the propagandistic tool. The organization in order to exceed from this stage and attract the numerous advantages for management of green supply chain should identify the related stimulators. On the other hand, finding out the stimulators related to apply the management of green supply chain can be helpful for managers and policy-makers in implementing it within organizations and profiting from its advantages.

Based on described issue above, this study was conducted on the effect of environmental policy-making on implementation of green supply chain.

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II. RESEARCH BACKGROUND

Lippman (2001) and Holt and Ghobadian (2005) in their research mention about reduction and elimination of harmful environmental effects by cooperation between product design and suppliers as the stimulator of green supply chain. Zhu and Serkis (2006) discussed the environmental cooperation of an organization with its suppliers, green product design, standard certificates of quality such as ISO 14001, amalgamation of environmental management of comprehensive quality in the planning and operational processes. Hu and Hsu (2010) implied that the support and commitment of senior management, environmental policies, and the effective relation with companies and suppliers, as the stimulators of green supply chain. The result of Pandya Amit and Mavani Pratik's study (2012) indicated that the environmental laws, promotion of the organization image, innovation, reduction of cost, opportunities of new market and competitors' activity are accounted

from the stimulators of green supply chain (Khorasani, 2014).

The severity of environmental pollution arising from scum in the cities and centers of industries accumulation is in a manner that has attracted the scientific and executive attention for correct disposal, or principal recycle of these materials. Nowadays, guaranteeing the sustainable development of each country has depended on optimum preservation and use of limited and unreplaceable sources in that country. Various acts and guaranties have been accomplished in this field that green laws and principles are some of them like using of raw materials compatible with natural environment in the productive and industrial centers, reduction of use of fossil and petroleum energy sources, recycle of papers and reuse of wastes. The governmental provisions pressure for taking the environmental standards and incremental demand of consumers for natural (green) products supply caused emerging the new concept of management of green supply chain which embraces the stages of product life cycle from designing up to recycling in a manner that is compatible with environment. The article ahead described the green supply chain and its advantages and application.

Supply chain consists of those processes that run for customer from conversion of primary raw materials up to the final product and connect the active organizations and companies in this domain to each other. Generally, the supply chain consists of those chains which include all activities related to the goods flow and materials conversion, from the stage of providing the primary material up to the stage of delivering the final goods to the consumer. The supply chain management consists of the process of integration of supply chain activities and also information flows related to it through improvement and coordination of activities in the production supply chain and product supply. Five main components of supply chain consist of: Plan/ source/ construction/ delivery/ return. Simply, pricing means determination of price for goods or service. Pricing is an activity which should be repeated and is accounted as a constant and continuous process. With genesis of the concept of supply management, the view of industrial managers has been changed and converted toward a useful insight based on cooperation between the companies. This affair is accounted as an effective and useful opportunity for company management in implementation of a creative pricing strategy and

acquisition of the maximum profit (Almasifard and Khorasani, 2017). A model of pricing plan for expansion and development needs to cooperate with different parts of company (Saeedi, 2017). Three prerequisites of appropriate pricing plan include the following factors in the organization: 1. Having the main goal and correctly understanding the customers and market procedure. 2. Having a pragmatic management process for development and implementation of the pricing plan. 3. Setting a correct pricing plan which has tendency to the commitment in the pricing process.

In a series of supplies chain networks which have special conditions, likewise supply chain of perishable goods, the price negotiation is not so crucial as the discussion over delivery time of goods. Hence, in this state, paradigm differs and it is found out that we should keep higher inventory in those special goods. The researchers believe that in order to have an appropriate pricing plan for company, 7 main and fundamental stages should be surmounted, first stage: Having a summary of the pricing strategies/ second stage: Studying the current pricing situation of company/ third stage: Pricing based on analysis of weakness and strength points, threats and opportunities/ fourth stage: Determination of the pricing strategy/ fifth stage: Determination of the pricing goals/ sixth stage: Specification of the pricing plan/ seventh stage: Control of the price and revision. Different type of pricing consists of: English cut-rate/ reverse internet exhibition and pricing/ cut-rate with Dutch style/ cut-rate according to the pricing style with the first confirmed price/ gregarious purchase/ interchangeable pricing/ eBay pricing/ discriminatory style/ pricing according to the quantitative discount/ bipartite pricing/ package pricing/ price discrimination during the time/ frantically pricing. The sellers by studying these effects on their presentable goods and services in the world market can adopt different strategies. With regard to the downward constant pressure in the prices, clearly, the companies for retention of their profitability should find a way for reduction of costs up to a level conforming to the prices drop. The challenge of business is to find new opportunities for reduction of cost. The companies before this, also have implemented many plans for reduction of cost. The last remained opportunity for the main reduction of costs is hidden in more extensive supply chain, not in the intra-corporative operations. Not having an appropriate pricing strategy can lead to

sell less, lose the customer, acquire less market share, and reduce the profit (Torabzadeh Khorasani and Memarian, 2012). These strategies provide the possibility of correct pricing with regard to the cost, customers and competitors and create an appropriate profit margin for sellers (Ghanbari Baghestan et al, 2012).

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III. Policy-Based Stimulators for Organization to Accept the Management of Green Supply Chain

The stimulators of organization movement toward green supply chain differ from the view of final customer, governmental institutes, private organizations and legitimation institutes. The main stimulators are the laws and provisions which dictate the observance of environmental issues to the organizations. On the other hand, some organizations implement these laws in order to increase the profitability or demands of customers (Neely and et al, 1995). The stimulators in management of green supply chain are divided into two groups of internal and external stimulators (Sojoudi and Saeedi, 2017). Some of the external stimulators which cause greens, consist of (Armstrong and Cutler, 2006; Polanski and Rosenberg, 2001):

- Fulfilling the consumers' demand and acting according to the social responsibility;
- Reacting to the competitors' acts and adopting green and environmental strategies with the goal of retention and extension of the market share;
- The international and governmental laws and provisions which oblige the organizations to implement the management of green supply chain;
- The international and governmental provisions and laws which oblige the organizations to implement the management of green supply chain;
- Increase of the environmental pollution level; Among internal stimulators, the following cases can be mentioned:
- Reducing the coast arising from reducing the energy sources consumption and input raw materials;
- Considering the environmental goals in the organization commission;
- Creating the sustainable competitive advantage in the organization

IV. RESULTS AND DISCUSSION

Different industries and organizations for achieving the management of green supply chain implement different activities. The implementation policies for achieving the management of green supply chain are divided into two general groups of internal and external implementation acts and 12 groups explained in the table 1.

Table 1: The implementation policies for achieving the management of green supply chain (Arif, Ebgo, Helman, Kulenda and Khaflan, 2009; Lo and Power, 2010; Kuniz, Laming and Fork, 2002; Holt and Ghobadian, 2009; Chen, 2010)

A. The implementation activities

1. Internal environmental management of organization:

- Commitment and support of senior and middle management of organization to the implementation of (green) supply chain management
- Taking the environmental management certificates like EME and ISO 14000 by organization
- Existence of compiled policy in the environment domain and social responsibility in organization
- Compiled plan for creating green and sustainable marketing

2. Designing for environment

- Designing the products and processes with the goal of reducing the consumption of primary materials and energy
- Designing the products and processes for reuse, reconstruction and re-recycle

3. Improvement of environmental performance in the domain of production process

- Planning for reducing and eliminating the use of harmful elements of nature in the process of pieces production
- Compiled plan for reducing the contamination of soil, water and air by internal processes
- Using of just-in-time delivery system, controlling the amount of existing storage and minimizing the amount of surplus order
- Using of reverse logistic system (collection of transportation, segregation, recycle and re-use of primary materials and returned pieces and disposal of scum)
- Replacing the nature-friendly raw materials instead of primary materials

4. Management of non-productive sources

- Managing and controlling the harmful effects of organization installations on the community and employees of organization (including environmental, health and safety problems)
- Implementing the central network and refinery of industrial and health sewage
- Measuring the amount of annually consumed water and planning for reducing the consumption

5. Management and optimization of energy consumption:

- Using of renewable energies in the production process (like the wind turbine energy and solar energy)
- Optimizing the energy consumption through using of monitoring in the ceilings for the light of work environment, local light and turning off the devices and equipment in the rest hours
- Utilizing of new and eco-friendly technology (for preventing from entrance of contaminants to the environment and optimizing the consumed materials and energy)

6. Management of wastes:

- Compiled plan for reducing the contamination of soil, water and air by wastes
- Implementing the residuals management system (management of production, collection, storage, segregation, transportation, recycle and disposal of wastes)

7. Organizational education, investigation and culture

- Doing activity in the domestic and international environmental associations and doing the environmental investigation with universities and scientific centers
- Holding the educational seminar about the importance and observance of environmental issues for employees, customers and suppliers
- Propagating the culture of paper reduction in different activities of organization by using of administrative automation system and providing the software used in the network

8. Organizational external environmental management:

- Taking the certificate of ISO 14000 by suppliers
- Selecting the suppliers according to the environmental standards and evaluating their performance according to the environmental

standards

- Existence of environmental instructions in the preparations unit for buying the primary materials and eco-friendly pieces
- Planting the young tree, tree and helping in development of green spaces

9. Environmental cooperation with beneficiaries

- Receiving the opinions and cooperating with customers and suppliers for clean production
- Receiving the opinions and cooperating with customers and suppliers in reduction of energy consumption

10. Improvement of environmental performance in the production domain:

- Compiled plan for reducing the contamination of soil, water and air by final product
- Using of the environmental standards labels on pieces
- Planning for increasing the production and sale

11. Improvement of environmental performance in the sale domain and after sale services

12. Increase of safety and improvement of performance

V. CONCLUSION

Some advantages arising from applying the green supply chain consist of:

- Increase in efficiency, improvement of productivity, creation of new markets, reduction of cost, decrease in contaminants, improvement of public popularity of organization and increase of social commitment and responsibility of organization (Zhang, 2006).
- Optimization of energy consumption, reduction of residues, reduction of cost, preservation of natural sources, improvement of life quality, creation and preservation of better environment for future generations (Arif and et al, 2009).

The main obstacles ahead for policy-making in achieving the management of green supply chain have been explained in the table 2.

Table 2: The obstacles ahead for policy-making in achieving the management of green supply chain (Ballou and et al, 2000; Icevani and et al, 2007; Zhou, 2007)

The obstacles ahead for policy-making in achieving the management of green supply chain
Lack of existence of active and volunteer approach of organization and suppliers about observance of environmental standards and social responsibility
Lack of capability of suppliers (in terms of knowledge and technology)
Lack of creation of tangible competitive advantage arising from implementation of green supply chain
Difficulty of organization and coordination of units in implementation of green supply chain
Lack of the appropriate infrastructures of information and communications technology for facilitating the implementation of green supply chain
Shortage of knowledge and education about environmental problems
Lack of support by the senior and middle managers of organization

VI. REFERENCES

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