

Implementing EMS In The Manufacturing Industries Of Bangladesh: Drivers And Barriers

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Abstract: Encouragement of rapid industrialization poses damage to the environment of urban areas in Bangladesh. Appropriate Environmental Management System (EMS) could minimize the damage. This paper intended to explore the drivers and barriers of implementing EMS in the manufacturing industries of Bangladesh. A questionnaire based survey was carried out following a conceptual framework of EMS for this study. The study showed that major drivers of implementing EMS in the manufacturing industries of Bangladesh are international acceptance, compliance to local environmental legislation, international trading, pressure from the customers, production cost reduction and company's policy for environmental safeguard. On the other hand, adoption of EMS is hindered by complexity in the process of EMS, management ignorance of its existence, lack of government incentives and awareness, lack of education and training, high investment and maintenance cost, ignorance of government regulations, and socio-economic culture. The study reveals that though the manufacturers are still reluctant to implement EMS in their industries due to the complexity faced in the process of EMS, they are heading towards adopting EMSs in manufacturing industries of Bangladesh crossing all the barriers and complexity of the process.

Key Words: EMS, Barriers, Drivers, Industries

1. Introduction

Bangladesh has been developing industrially after its independence which is being encouraged for rapid economic development of the country. Industrialization is being concentrated mainly in the urban areas like Dhaka, Narayanganj, Narshingdi and Chittagong [5]. A number of environmental problems have been reported regarding industrial establishments in these areas like four major rivers near Dhaka namely Shitalakhya, Balu, Turag and the Buriganga receive more than 1.5 million cubic metres of wastewater every day, from the surrounding industrial units according to a World Bank study [8]. In January 2011, the concentration of dissolved oxygen (DO) of Buriganga was found almost 0 mg/L [1]. Environmental management of industries has now become a very important issue of the country. This concern has prompted manufacturing industries of Bangladesh for using some form of environmental management system (EMS) as an option to environmental management. Motivations are important in promoting EMSs, but the barriers to implementation must be acknowledged and addressed in order to minimise them. The adoption of an EMS is a complicated procedure where difficulties can appear in the different stages, acting as barriers for its implementation [2]. These can vary depending on the characteristics of the organization, such as, size, business sector, and even country [3]. Setting up an environmental management system (EMS) will provide a company with a framework through which its environmental performance can be controlled and improved.

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The main objective of the study was to investigate the drivers and barriers of implementing EMS in manufacturing industries of Bangladesh.

2. Methodology

A conceptual framework was developed to carry out a questionnaire based field survey. As this is a descriptive conceptual framework there are some limitations of this model. Other variables which might influence in implementing the EMS would not be revealed and there might some other factors which are interlinking with other or interactive to other might be missing in this model. Barriers of implementing EMS are not shown in the model and how the barriers would influence the model is also absent. For the acquisition of primary data the questionnaire was administered to the manufacturing industries in the study area.

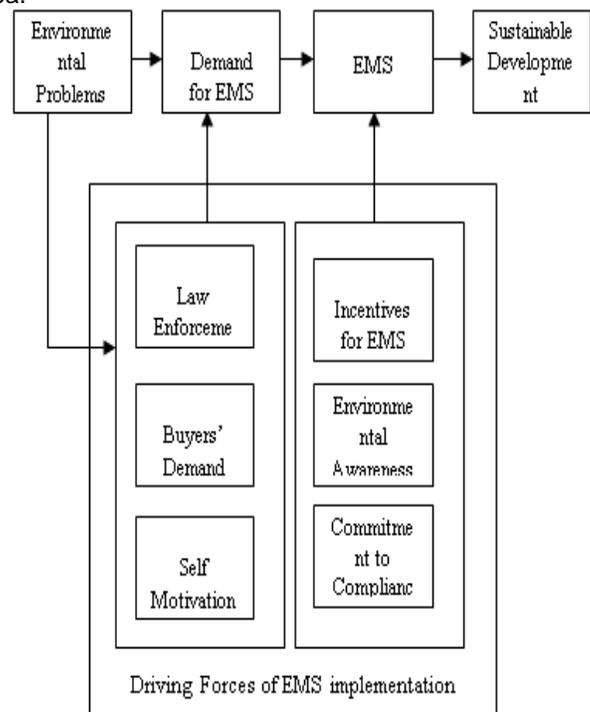


Figure 1: Conceptual Framework of EMS for this study

A Convenient sampling method was employed to collect data from industries for this purpose. Industries, irrespective of location, interviewed were medium to large industries as defined in industrial policy of Bangladesh [6]. Thirty four industries located mainly in industrially populated areas like Dhaka, Chittagong, Gazipur and Narayanganj were interviewed. Major sectors of industries included food production and processing, cotton and textile, plastic production, pharmaceuticals and iron and steel manufactures. Industries were selected on the basis of their availability and accessibility to the author and their willingness to take part in the survey.

3. Results and Discussion

From the survey it was found that the majority of the factories adopted EMS for international acceptance because most buyers nowadays, demand for environmental loyalty of the factories before they purchase its products. International buyers give emphasis to the environment and working environment for the workers. The respondents opined that the industries will not survive in the business longer without giving proper attention to the environment and implementing an effective EMS in the manufacturing units. This inference is substantiated by the fact that half of the factories think removing of the international trade barrier as an option for motivation to implement EMSs in their operations.

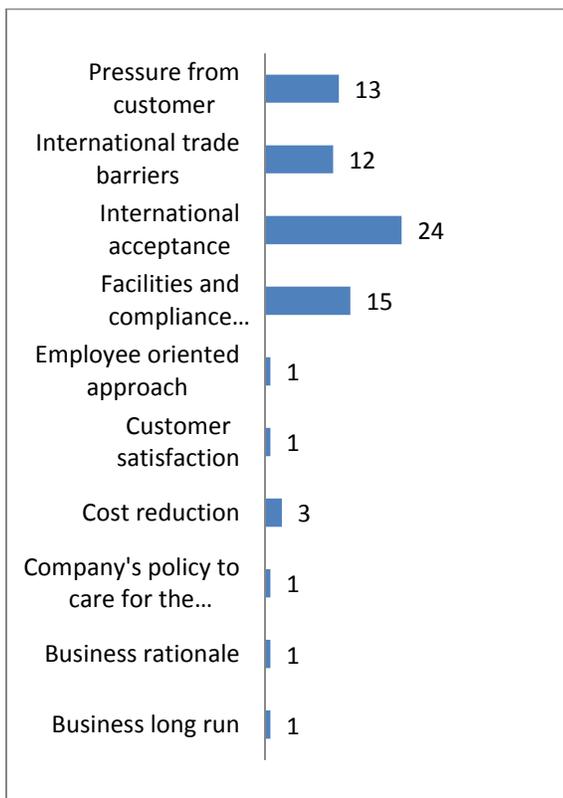


Figure 2: Frequency distribution of different types of driving forces for implementing EMS in the manufacturing industries of Bangladesh (Source: Study Survey, 2013)

Compliance to regulation played next vital role for the implementation of EMS. Survey showed that almost half of the factories implemented EMS for this issue along with

other issues. The literature shows that environmental initiative taken by organizations is driven primarily by external forces, such as regulatory pressures. This result is almost similar to the study carried out by Porter and Van der Linde (1995b) that government regulations may serve in practice as a stimulus to both economic growth and cleaner production and might increase resource productivity in response to both regulatory and market pressures [10]. Some food production and processing industries claim that though their activities have less negative environmental impacts on the environment, they have focused on the legal compliance of their factories. Thereby, they are voluntarily reaching towards the goal of EMS implementation as a part of their business commitment and policy. Some textile, pharmaceutical and plastic industries are also controlling the environmental pollution as their social commitment and responsibilities (Study Survey, 2013). This is a good indication about the education and awareness level among the companies towards conserving the environment and energy. These results also substantiate the study of Kolk (2000)[7] that some firms with less environmental risks used to focus on compliance to regulations but as EM developed, firms started to move beyond mere compliance. The driving mechanisms for adopting EMS in manufacturing industries are different in categories. These are business rationale, company's policy to care for the environment and pressure from customers. The study finds that about 9% of the sample industries are motivated for implementing EMS for their production cost reduction. The study also reveals that there is no social or community force that compels industries to adopt the environmental management practises in their operations. Prevention of pollution, which is the idea underlying the concept of an EMS generates mechanisms aimed at minimizing material, resources and energy consumption. It is difficult to identify the benefits which directly arise from environmental management system implementation as well as the benefits which indirectly spring from maintaining the system [9]. However; industries, of course, hope to derive comparative advantages by implementing an EMS in their operations.

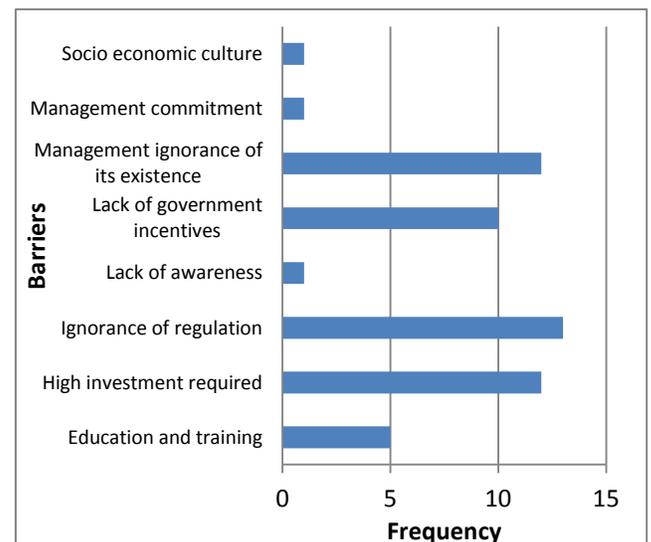


Figure 3: Barriers of EMS Implementation (Source: Study Survey, 2013)

A major objective of this study was to find out barriers organizations are facing for obtaining standard EMS or localized EMS in their operations. Most of the companies gave multiple responses. So no single reason is responsible for the barriers. Almost one third of the respondents think that establishing EMS requires high cost. Moreover, cost of operating or maintaining EMS is also very expensive. Many of the respondent organizations are complaining that there is lack of government incentives and 29% of the industries interviewed belonged to that group. But the fact is that government has established incentives for the investors to establish EMS. There are several ways by which government can help to overcome the barriers and actively encourage industrial waste minimization activities. These include the provision of technical assistance programs, the creation and enforcement of pollution control regulations, the dissemination of information about waste minimization programs and opportunities, the establishment of financial incentives and the foundation of award programs recognizing significant achievements in waste minimization [4]. Other responses to the reason why industries have not yet implemented EMS include management ignorance of its existence and ignorance of government regulations. A respondent pointed out that the process of obtaining ISO 14001EMS certification is a complex process and two of the respondents thought that the process is time consuming. But most of the interviewees opined that awareness raising campaign should be wide spread both from the government and civil society for establishing EMS.

4. Conclusion

Manufacturing industries in Bangladesh have developed some form of environmental management practices like pollution control, waste management, energy conservation, etc. in their operations. 31 industries out of 34 have some sort of environmental management system. 21 factories have their own waste management system. Major drivers of implementing EMS were business rationale, cost reduction, pressure from customers, compliance to local legislation, and international acceptance. Barriers of implementation of EMS in the manufacturing industries of Bangladesh are complexity in the process, lack of awareness, lack of education and training, lack of government incentives, high investment cost, management ignorance of its existence, and ignorance of government regulations. Large and medium industries in Bangladesh established EMS in their manufacturing units for international acceptance and removing trade barriers but from the study it was realized that manufacturers are still reluctant about the necessity of implementation of EMS in Bangladesh.

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