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TITLE: Environment Management System (EMS) - ISO 14001 in India

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Abstract

Being continuation of globalization and industrial revolution the earth natural processes are being transformed and most of the countries are facing the environmental problems. Environment consists of various issues like climate change, conservation, dams, electromagnetic radiation & health, energy, environmental degradation, land use, nanotechnology, nuclear issues, overpopulation, ozone depletion-CFC, pollution, resource depletion, toxins and waste etc. Where the environment has arrived it has become necessary by business entities to address the environment in order to maintain customers and exist in an over more critical global economy. Environment Management System (EMS) can help business to fulfill its increasingly overloaded responsibility for future condition of global environment. EMS is a part of the organization's overall management structure that considers the immediate and long-term impacts of its products, services and processes on the environment. Present study aims at knowing the application of EMS in corporate giants as per ISO 14001. It has been found that, not being mandatory, adoption of EMS in corporate giants in India is at its infant stage.

Key Words: EMS, ISO 14001, Corporate.

Introduction

Green or Environmental Management System describes an effort to incorporate environmental benefits and costs into economic decision-making. Corporate environmental system is concerned with a business environmental impact. To achieve real financial benefit, Indian companies must commit to a green philosophy and incorporate environmentally. The conservation of Eco-system is often seen as a cost to society rather than an investment that sustains nature and human livelihood, despite the fact that they are the lifelines of many stakeholders. Going green can prove a critical source of competitive advantage. What works externally also has benefits within the company. While it is sometimes challenging to quantify cause and effect, it can be seen that diversity training has enhanced project management, eco-efficiency measures have led to reducing costs and volunteering has increased employee satisfaction.

EMS refers to set of all practices, policies, programs of the organization, which aim at protecting the environment in comprehensive, systematic, planned and documented manner

(http://en.wikipedia.org/wiki/Environmental_management_system). It is a part of the organization's overall management structure that considers the immediate and long-term impacts of its products, services and processes on the environment.

ISO 14001 is the primary management system standard that stipulates the necessities for the devising and preservation of an EMS. Three fundamental commitments are made in an environmental policy which fulfills the requirements of ISO 14001. These are:

- prevention of pollution
- compliance with legislation
- continual improvement of the EMS

These commitments help drive the improvements in overall environmental performance (Viewed at http://www.nqa.com/en/atozservices/what-is-iso-14001.asp).The goal of the Environment Management Policy is to improve environmental performance focusing on energy consumption , water consumption, Air emissions, Ozone depleting substances , Waste management, Packaging.

Purpose of ISO 14001

The main challenge of any business organization is how to manage the environmental issues taking in view the interest of interested therein as well the reducing the direct & indirect influence on environment. Achieving environmental performance with improvement is demanded by the regulatory bodies, customers and other stack holders due to increased concerned along with environmental compliance.

Certification to ISO 14001 shows your organization's commitment to concern for environment and delivers a charter for a company to accomplish its legal compliance and progress environmental enactment which includes risk and opportunity identification, analysis, target setting, and measurement. It also delivers significant cost benefits in terms of increased efficiency, conserving resources and waste minimization.

EMS Standards & Legislations

There are so many EMS standards & specifications at international level as well as country level. On the international scene there is ISO 14001 which is part of ISO 14000 family series of standards regarding specification, guidance and advice on environmental issues. It is based upon the ISO 9000 series of quality system standards and emphasizes on continuous environmental improvement. It came into existence in 1996 and subsequently revised in 2004. It replaced the British standard of EMS BS7750. ISO specifies the generic

requirements for an EMS, which are at least to be fulfilled. So to get ISO 14001 certificates, EMS must fulfill these minimum requirements and be audited by external certification body. Because ISO 14001:2004 does not specify the levels of environmental performance because it would need a specific EMS standard for each business, which is not intended. So it can be implemented by a wide variety of organizations. In addition to above, ISO 14004:2004 is also a part of ISO 14000 family series of environmental protection, deals with EMS and provides general EMS guidelines. At country level, there is a Bureau of Indian Standards (BIS), the National Standards Body of India that is providing service to Indian industry by formulating the national standards and operating product certification scheme. BIS launched a scheme to grant the EMS certification License to entities as per IS/ISO 14001 that gives the organization a blue print for managing its environmental issues.

Literature Review

Various researchers gave different views in their studies made on application of ISO-14001 as

Samir Aslam Qadir (2005) stated in his study that in India, the major driver of ISO 14001 appears to be the market, with an increasing number of overseas as well as domestic customers requiring their suppliers to seek certification. Other motivations for ISO 14001 include regulatory pressures in some states, and the desire on the part of firms to project a positive image.

Gavin P. M. Dick & Iñaki Heras (2008) analyzed the relationship between ISO 14001 certification and financial performance with the aim of understanding the causal influence of selection and treatment effects. The empirical data was collected from a sample of 268 certified firms and 7,232 non-certified firms in Spain between 2000 and 2005. Using a longitudinal methodology that measures the financial performance of the firms before and after certification, the paper finds the differences in performance between certified companies and non-certified firms prior to certification are greater than the differences that exist in the years following certification.

Bishal Adhikari (2010) analyzed the elements of ISO 9001:2008 and ISO 14001:2004 standards, identified similarities and differences between them. **The** study found that bulk of the necessities of both standards was of same kind and it is possible to integrate the quality and environment management system into a single management system.

L. Evangelos & Psomas (2011) explored in their study that attaining a competitive gain, the social obligation and the environment friendly policies were the hauled out underlying paradigms of the ISO 14001 motives. However it is a internal matter of the organization whether it is to be ISO 14001-certified or not. . The ISO 14001 necessities and the determination of environmental performance issues were the uprooted latent concepts of the difficulties faced during the application of the standard.

Wenlong He & Rui Shen (2019) studied the Chinese listed companies and found certification of EMS 14001 of selected firms' leverages technological innovation.

Glenn Baxter (2021) found that the airlines have adopted the certified EMS-14001 using varied array of environment preservation processes, which contain the procurement and positioning of the next generation, fuel well-organized aircraft, the usage of sustainable aviation fuel, vigor well-organized flight maneuvers and air traffic managing techniques optimization, aircraft load reduction, airplane engines washing, solitary engine aircraft taxying, ecological waste management, electrification of ground level service apparatus and vehicles, the usage of photovoltaic solar systems, carbon counterweighing packages and other facilities.

From the review of literature it seems that most of the studies have been made in developed countries but in India, being this topic new, the level of application of ISO-14001is at stage of its beginning that provides the scope for researcher to look into this matter.

Objectives of the Study

- To make overview of corporate discretionary EMS application as per ISO- 14001 in Indian corporate.
- To know the level of adoption of EMS-ISO 14001in selected companies.

Research Methodology

Being the study exploratory in nature which can be justified only with primary data and being population so large it went through taking a sample of 50 companies listed on BSE [as it is barometer of any economy that can better represent the big giants/ corporate world]. To collect the primary data regarding implications of EMS- ISO 14001 in Indian corporate a questionnaire was designed and getting it filled up from respondents, later collected data was analyzed using mean score value and index because study aims at knowing the level of adoption of EMS-ISO 14001 that can be known with percentage of respondents adopting such practices and at which level i.e. fully adopted/ semi adopted/ not adopted so can be better presented in terms of mean score values and indices various constituents of EMS and lastly being the sample size neither small nor so large x^2- test has been taken appropriate to test the validity of the study. x^2- values has been computed as below:

$\sum$ (Observed Value- Expected Value)^2/ Expected Value

Significance of $\mathbf{x^2}$- Value has been checked at degree of freedom as computed below:

Df = (r-1) (c-1)

Where r = total number of rows and c = Total number of columns.

Further following ingredients of EMS (viewed at http://www.epa.gov/ems/) as per ISO 14001 have been taken as **parameters** to study the implications of EMS in selected companies:

- **Policy Statement** : A statement of the organization's commitment to the environment
- **Planning:** plans to meet objectives and targets that contains identification of significant environmental impacts - environmental attributes of products, activities and services and their effects on the environment
- **Implementation & Operation**: Operational execution with established working conditions.
- **Checking & Corrective Actions :** provides mechanism for improvement
- **Management Review:** Review of basic assumption on which EMS is based.

Results and Discussions

In present study 50 companies listed on BSE were selected to know their compliance with EMS – ISO 14001. Environment Management System has 5 elements as per ISO- 14001 as well stated in table 1.

Table 1: Mean values and Mean Index of Scores gathered through Questionnaire

S. No	Constituents of EMS- ISO 14001	Mean Score Values	Mean Index
1	Commitment & Policy	.45	.90
2	Planning	.15	.30
3	Implementation & Operation	.071	.014
4	Checking and Corrective Action	.021	.008
5	Management Review	.002	.0004

As table 1 makes it clear that most of the selected companies for this purpose, are adopting the EMS- ISO 14001 at planning level with highest mean scores 45 & .15 and .90 & .30 in terms of mean indices to commitment & policy and planning respectively. When companies were asked for implementation of such quality standards, it was found missing there because of non- compulsion of them which has been by minor scores as shown in table1. Further to validate the results of the study, x^2- values have been computed in table2.

Table 2: EMS – ISO 14001 Adoptions by Indian Corporate

Table2 contains observed frequencies and expected frequency (in brackets) as given below.

Elements of EMS	Adopted	Going to be Adopted (Semi)	Not Adopted	Total
Commitment & Policy	3 (.95)	5 (1.45)	Nil (5.6)	8 (.16)
Planning	1 (.12)	Nil (.18)	Nil (.70)	1 (.02)

Implementation & Operation	1 (2.64)	1 (3.96)	20 (15.4)	22 (.44)
Checking and Corrective Action	Nil (1.56)	2 (2.34)	11 (9.1)	13 (.26)
Management Review	1(.72)	1 (1.08)	4 (4.2)	6 (.12)
Total	6 (.12)	9 (.18)	35 (.70)	50 (1)
X^2 = 32.26 that is significant at degree of freedom 8 Values in brackets are expected values computed with the help of formula stated in Research Methodology**.**				

Results clearly state that only 12% of the selected companies are adopted fully EMS – ISO 14001. Moreover 18% of the companies are committed to be adopted it that means EMS's application is in process and a major part i.e. 70% of the companies are neither adopted nor in process of such adoption. It seems that compliance of EMS as per global standard ISO – 14001 is almost absent or we can say it is at very minor level. However overall X^2 value is significant at df= 8 which validates the facts of the study.

Conclusion

As in India adoption of EMS – ISO 14001 is not fully mandatory to be followed for corporate giants but it is in business interest which gives the company competitive advantage. So in India it is at infant stage. This paper presents an overview of corporate discretionary EMS application as per ISO- 14001 in Indian corporate. It has been found that there is no satisfactory initiative in terms of corporate governance regarding compliance of EMS as per ISO 14001 where environment protection is most notably issue. The study reveals that many companies are lagging behind to make such compliance voluntarily. While India is working to improve it corporate governance best practices, there is a little pressure on firms to adopt EMS – ISO 14001 taking it a financial activity in terms of competitive advantage Nevertheless, Indian companies need to adopt the environment friendly products as well as processes Companies should also do this to gain competitive advantage, such as protecting the environment & conserving natural resources has become a global priority among businesses because environmentally conscious organization & customers prefer to do business with like-minded partners. Demonstrating that your company cares about the environment gives your company an edge over the competitors delivers value and improves your company's image, which in turn increases revenues.

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