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THE RELATION BETWEEN ENVIRONMENT MANAGEMENT SYSTEM AND ORGANISATIONS SUSTAINABILITY- A SYSTEMATIC LITERATURE REVIEW

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Abstract:

Environmental protection is the primary objective to accomplish sustainable development of organizations and also to build an eco-friendly world for the present and for the generations to come. Environmental management is a primary element of sustainable development; it is progressively seen as responsibility of businesses. Currently most of the organizations are involving voluntarily to reduce the activities that may cause adverse effect on the environment. Organizations have to consider its stakeholders along with its ethical view. Thus, coordinated approaches like environmental management systems plays major role in environmental and sustainability problems. Hence, there is a need to have a better understanding of the relationship between environment management systems and the sustainability. The aim of this study is to review the EMS and Sustainability and relation between these two. To maintain transparency, this systematic review has undergone with a qualitative screening approach i.e. PRISMA 2020 flow diagram. Out of 541 articles including a book identified 40 were screened for systematic literature review. The findings of the study indicates that Environmental Management System is one of the utmost efficient ways to reduce an organization's environmental impact and to increase organizations sustainability through its systematic, cyclic, planned and documented set of processes.

Key words: Environment Management System, Organization Sustainability, ISO 14001, PRISMA 2020, Stake holders, Top Management.

Introduction:

Due to the increased sustainability challenges the world is facing, the attention given to an organization's performance is also increasing [8]. Industrial companies are progressively concerned about the consequences of their processes, products and services, all while searching for level between profitability and sustainability. At the same time, many studies focus on the strong need of a broad environmental assessment linked to production processes, as well as pollution, energy consumption and waste management issues [1].

Environmental Management System is one of the utmost efficient ways to reduce an organization's environmental impact and to increase organizations sustainability through its systematic, cyclic, planned and documented set of processes. It is a tool for bringing the environmental policy of the organization to life which helps organizations reach and document their compliance regarding laws, regulations and own targets and ambitions [8].

Methodology:

This research was carried out using a systematic literature review. Inclusion and exclusion criteria, selection of papers are based on the established objectives of the review and grouped the papers on objective criteria which are published between 2003 and 2022 with full-text availability were selected. Papers considered in the study are only written in English and published in top journals, included prestigious IOP conference papers and few chapters from the book - A Path to Sustainability which was published by Springer and considered grey literature from official website of OECD. Further, magazines, news paper articles, discussions and opinion papers on EMS and Sustainability are excluded from the research.

To find the relationship between EMS and Organisations Sustainability more specifically and clearer used PICO (Population, Intervention, Comparison, and Outcome) frame work for setting the research objectives. Considering the research objectives, few key words like Environmental Management System (EMS), ISO 14001, driving forces, competitive advantage, Top Management commitment, Challenges, Benefits, India, Sustainable development, corporate sustainability, corporate environmental policy etc., have developed for searching the papers from data bases. Table.1 depicts the objective dimensions and key words of this review. The data bases /search hubs used for the study are Google Scholars, Research Gate, ELSEVIER, and IJERT. To retrieve the most relevant search results used search strings by using Boolean operators, truncation symbols. Table.2 shows the information related to Database/ Search Hubs, search strings and published year of the concerned papers.

In systematic review the PRISMA flow diagram helps to make selection process transparent on each stage. The reviewer takes decisions initially by recording number of records identified and screened. Next, the number of reports assessed and excluded. Finally total studies and reports included for the review. It helps to remove duplicate records, find the full text of relevant articles, examine titles and abstracts to exclude that don't meet the inclusion criteria, Screen full-text articles against criteria for inclusion.

In this review as per Fig.1, the first phase i.e. identification phase, records identified from various database are 541, and duplicate records removed before screenings are 187.The next phase i.e. screening and eligibility phase 354 records were screened among those 169 excluded and 185 records were sort for retrieval and 54 reports were not retrieved. Reports assessed for eligibility are 131; from this excluded reports are 87. In the final phase i.e. included phase total numbers of reports included are 44. It depicts that from total 541 records, it has reduced to 44 which are considered for the present study.

Table 1:

All keywords more than 5 frequencies have considered and categorized into each objective dimension.

Key word Categories on Objective Dimension:

Objective Dimension	Key words
Relation between EMS and Sustainability	Environmental Management System (EMS), ISO 14001, strategic orientation; Sustainable development, corporate sustainability, corporate environmental policy;
Motivational factors affect the adoption of EMS.	Stakeholders, driving forces, Environmental quality, Competitive advantage, Sustainable practices
Role of stake holders on EMS implementation	Implementation Strategies, Green Manufacturing, EMAS, Stakeholders pressures, Stakeholder engagement
EMS and Top management involvement	Top management commitment, Proactive environmental management strategy, Corporate social responsibility (CSR)
EMS implementation	Stakeholders, Benefits, Challenges, Benefits, India, Financial performance, Waste minimization, Operational improvement

TABLE2:

Databases and Search strings:

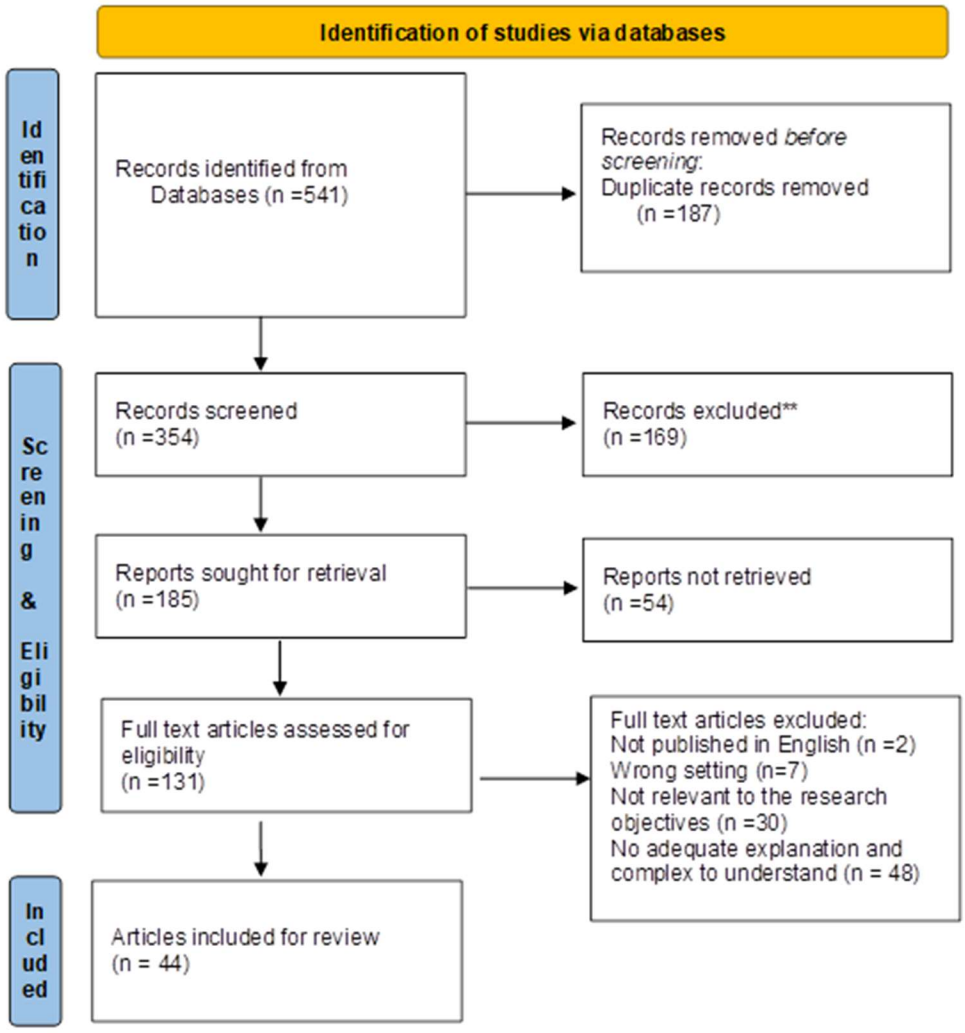
Databases/Search Hubs	Search String	Year	Numbers
Research Gate	**Impact of Environmental Management Systems, Corporate Performance, Environmental Sustainability, corporate Environmental policy, Sustainability, Drivers, Challenges, Implementation of EMS, Top management commitment, Competitive advantage**	**2003-21**	**7**
ELSEVIER	**Motivation AND EMS, EMS Practices in India, Green Manufacturing, Environmental quality, Environmental Management Systems AND Stakeholders influence, Corporate Sustainable Development, EMS AND SMEs**	**2001-19**	**5**

International Journal of Engineering Research & Technology (IJERT)	Implementation Of Environmental Management System , Barriers in implementation of EMS	2012, 2013	2
MDPI-Sustainability	Environmental Management systems; Environmental Performance; Financial Performance; Strategic Orientation, Eco-innovation; Absorptive Capacity	2020, 2021	3
WILEY-Business Strategy and the Environment	Environmental management systems AND stakeholder involvement, Corporate sustainability, Sustainable practices	2019, 2017	2
Conferences -1. IOP-The 5th International Conference on Climate Change 2020 and IOP Conference Series: Earth and Environmental Science and MATEC Web of Conferences 76	Environmental Management Systems AND Sustainability in SMEs	2021, 2020, 2016	3
Springer-Business Transitions: A Path to Sustainability (BOOK)	ISO 14001, Plan-Do-Check, Act	2022	Page- 67 to 77
SCIENDO-Environmental and Climate Technologies	Management Trends AND Environmental Systems	2022	1
Frontiers in Psychology	EMS Adopting Vs Non Adopting Organizations, sustainable development	2022	1
American Journal of Environmental Science,	Environmental Management System	2013	1
Environmental Conservation	Knowledge exchange, Environmental management	2012	1

Structure and Environment	Environmental Management, Environmental Management System, Organizational management, ISO 14001	2019	1
PICMET	EMS IN INDIA	2008	1
JETIR	Challenges in EMS, EMS Challenges in India, Driving forces of EMS	2019	2
International Journal of Advanced Scientific and Technical Research	EMS; ISO 14001; Challenges, advantages	2015	1
Journal of Management Control	Implementation of an environmental management system, SMEs	2021	1
Environ. Sci. Technol.	Challenges and Implementation Strategies, EMS	2010	1
SAGE-Asia-Pacific Journal of Management Research and Innovation	ISO 14001, EMAS, Environmental management strategy	2012	1
Journal of Environmental Planning and Management	Relation between EMS and Sustainable development	2007	1
Sussex Research Online	Green innovation; MNC subsidiaries; Stakeholder pressures;		1
Resources and Environment	Environmental impact assessment AND Involvement of Stakeholders	2015	1
Management of Environmental Quality: An International Journal	Stakeholder's involvement AND EMS	2013	1
Middle-East Journal of Scientific Research	Top Management commitment , EMS Implementation, Corporate Sustainability	2015	1
Journal of Innovation Economics & Management	Adoption of environmental management systems	2016	1

Organization Science-INFORMS	**ISO 14001, Green Certification**	**2007**	**1**
Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis	**Implementation of EMS**	**2014**	**1**
OECD Publishing	**OECD**		**1**

PRISMA Flow Diagram of literature selection process:



The Fig. 1 summarises the screening process visually by PRISMA flow diagram.

Results and Discussion:

The thorough review of eligible 44 articles including one book has highlighted several themes enabled to answer the research objectives. The recognized literature is between the period 2001 to 2022 from various reputed data bases has given scope to understand the concept. The findings of the study clustered into focal themes depicted in Table.3 like EMS and sustainability, EMS implementation, the motivating factors for EMS implementation of EMS, role of top management and also the stake holders, EMS adopted Vs non adopted organizations and EMS in India. These connected themes contributed to the literature of the research problem and have given scope to understand the relation between the EMS and the organizational sustainability.

Table 3:

Theme	Journal	Title	Year
1. EMS-Awareness, Top Management, Trends, SMEs	SCIENDO	Environmental and Climate Technologies	2022
	International Journal of Advanced Scientific and Technical Research	Challenges and benefits of implementing an Environmental Management System: A review	2015
	International Journal of Engineering Research & Technology (IJERT)	The Study And Implementation Of Environmental Management System	2012
	Structure and Environment	THE EFFECTIVENESS OF ISO 14001 AND ENVIRONMENTAL MANAGEMENT SYSTEM – THE CASE OF NORWEGIAN FIRMS	2019
	Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis	HOW DOES IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONTRIBUTE TO CORPORATE SUSTAINABILITY MANAGEMENT	2014
	Journal of Operations Management	Assessing the Impact of Environmental Management Systems on Corporate and Environmental Performance	2003
	SUSTAINABILITY-MDPI	The Relation between Environmental Management Systems and Environmental	2020

		and Financial Performance in Emerging Economies	
	Research Gate	Drivers and challenges for implementing ISO 14001 environmental management systems in an emerging Gulf Arab country	2019
	PICMET	An Indian Experience of Environmental Management System	2008
2. EMS Implementation	Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis	HOW DOES IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONTRIBUTE TO CORPORATE SUSTAINABILITY MANAGEMENT	2014
	Research Gate	Drivers and challenges for implementing ISO 14001 environmental management systems in an emerging Gulf Arab country	2019
	Middle-East Journal of Scientific Research	Significance of Top Management Commitment on the Implementation of ISO 14000 EMS towards Sustainability	2015
	JETIR	ENVIRONMENT MANAGEMENT SYSTEM: ISSUES AND CHALLENGES	2019
3.EMS and Sustainability	Journal of Cleaner Production	Do environmental management systems help improve corporate sustainable development? Evidence from manufacturing companies in Pakistan	2019
	Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis	HOW DOES IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONTRIBUTE TO CORPORATE SUSTAINABILITY MANAGEMENT	2014
	Research Gate	Environmental Management Systems and Sustainability: Integrating Sustainability in Environmental Management Systems	2009
	Springer	Business Transitions: A Path to Sustainability	2022
4. EMS - India	JETIR	ENVIRONMENT MANAGEMENT SYSTEM: ISSUES AND CHALLENGES	2019

	ELSEVIER	Motivations for implementing environmental management practices in Indian industries	2015
	International Journal of Engineering Research & Technology (IJERT)	The Study And Implementation Of Environmental Management System	2012
	PICMET	An Indian Experience of Environmental Management System	2008
5. EMS -Factors	ELSEVIER	Motivations for implementing environmental management practices in Indian industries	2015
	International Journal of Engineering Research & Technology (IJERT)	The Study And Implementation Of Environmental Management System	2012
6. EMS - Stakeholders	Journal of Innovation Economics & Management	Adoption of environmental management systems and organizational changes: the case of the French industrial firms	2016
	Journal of Cleaner Production	Stakeholders and environmental management systems: a synergistic influence on environmental imbalance	2011
	Sussex Research Online	Stakeholder Pressures, EMS Implementation, and Green Innovation in MNC Overseas Subsidiaries	
	ELSEVIER	Systematic review of how Environmental Management policies are incorporated into National Development Plans in order to achieve Sustainable Development	2021
7. EMS- Adoption Vs Non–adoption Organisations	Journal of Cleaner Production	Do environmental management systems help improve corporate sustainable development? Evidence from manufacturing companies in Pakistan	2019
	Journal of Innovation Economics & Management	Adoption of environmental management systems and organizational changes: the case of the French industrial firms	2016
	Frontiers in Psychology	Comparing the EMS adopter and EMS non-adopter organizations in achieving sustainable business goals	2022

	Journal of Cleaner Production	Environmental management systems and the smaller enterprise	2003

Environmental Management System:

An Environmental Management System (EMS) is a framework that helps an organization achieves its environmental goals through consistent review, evaluation, and improvement of its environmental performance. (Dr.B.H.S-Dec 28, 2015-Linkdin). EMS provides a structured approach to effectively control the impacts arising from its processes, products and services. Number of organizations implementing and getting certified with EMS is increasing day by day. ISO 14001, a member of ISO 14000 family, is a specification standard developed by international organization for standardization (ISO) based on PDCA cycle [18].

ISO 14001 EMS implementation has a positive and significant relationship with Enterprises performance (i.e. operation performance and business performance). Stakeholders also generally agree that an ISO 14001 certified EMS does increase a firm‘s capacity to manage the environmental aspects of its business [25]. External pressure and stakeholder legitimacy are the main causes for the introduction of ISO 14001 [6].

Certification helps to satisfy investor and another stakeholder demands for organization accountability [9]. Firms having gone through EMS certification experience a greater impact on performance than do firms that have not certified their EMS [10]. It is recognized that the implementation of environmental management differs per company varying in how many environmental practices are adopted and hence how comprehensive the EMS is. The relationship between EMS comprehensiveness, environmental performance, and financial performance proves to be complex [41]. Firms in possession of a formal EMS perceive impacts well beyond pollution abatement and see a critical positive impact on many dimensions of operations performance [10]. Experience with these systems over time has a greater impact on the selection and use of environmental options [10]. Policymakers should put more emphasis on raising awareness of EM issues and the benefits of adopting certified EMS [17].

Most of the Indian organizations feel that EMS has a positive effect in their performance. It is observed that Indian organizations are more inclined towards getting ISO 14001 certification rather than taking full advantage of EMS [14]. There is variability in what happens over time, after the decision is made to adopt ISO 14001, and this variability in implementation can lead to disparate performance results and perceptions of value gained in the process [6].

EMS and the Motivating Factors:

While the benefits of an effective EMS are clear, the factors encouraging firms to pursue certification are not. The potential advantage that certification provides in the marketplace, especially international trade, appears to be an important factor, but for many companies that advantage appears to be anticipatory [25]. The environmental goals that firms set typically do not

go beyond compliance; they generally revolve around efforts to achieve compliance and manage resources more efficiently [25].

Firm characteristics (size, age and sector) add more explanatory power to determine the CEPs of firms [16].They consider relational motivations as a significant driver influencing environmental responsiveness, the extent the firm's perceive the adoption of EMS can built strong relationship with its stakeholders, the chances that the firm will adopt more comprehensive EMS practices are high. Firms are more likely to adopt EMS, for better compliance, prevention of environmental incidents and to portray the image of an environmentally responsive firm [16].

The firms are also motivated to adopt EMS practices to remain competitive in business by following the same environmental standards as their peers in the market. The analysis further suggests that innovational and operational motivations are not significant factors to adopt EMS practices [16].

EMS Implementation and the Top Management Role:

Implementation of EMS positively allows organization to integrate environmental aspects into the management system and to improve environmental performance; nevertheless the benefits are also in the economic and social performance [9]. From a managerial point of view the adoption of an EMS depends on the organizational structure of business, the two standards ISO and EMAS allow a clear improvement in the environmental performance of companies. [1].

The implementation of EMS programs in organizations requires expertise, support, effective change management and communication processes. Environmental managers should formulate a strong environmental policy with clear objectives, and get the commitment of leadership, top and middle management and of employees involved in the process. Clear communication about the benefits and the process to all employees involved should facilitate certification and maintenance of the EMS [17].

Top management has an essential role in ensuring the proper implementation of an EMS. Commitment of top management in the implementation of an EMS increases the effectiveness of the implementation [36].The top most important factors hindering the implementation of environmental management system were: implementation cost and “too much paper work”, the cost of certification, the quality of consultants, effect on the existing organizational structures, the time involved and the exposure of the organizations to regulatory bodies [15].

EMS and the Stake holders:

The adoption of an EMS appears to be closely related to organizational changes intended to respond to external demands from clients and partners in the same industry [38]. Both stakeholder pressure and EMS implementation offer significant predictive power with regard to organizations’

proactive environmental behaviors [31]. The positive relationship between market stakeholder pressures and EMS implementation is reinforced by global 'green' institutional pressures in the different host countries [29].

MNC subsidiaries need to meet market stakeholders' pressures in order to achieve social legitimacy in host countries, and that the implementation of formal environmental management systems (EMS) is an important mechanism translating these pressures into green innovation initiatives [29]. Organizations and managers should be aware of the supply chain function of their EMS, and explore potential new ways of engaging relevant stakeholders when defining environmental objectives [7].

EMS and Sustainability:

EMS proves to be a viable tool for companies to reinforce business and increase long-term corporate sustainability [39]. Improved environmental performance has been linked with process and product cost improvements and lower risk factors [9]. Mostly environmental management is identified as an 'agenda 'which runs counter to the overall development of an organization. Provided, environmental management systems can be integrated with basic principles of sustainable development these management systems can be utilized as a launching pad to move organizations towards sustainability [11].
The concept of business models for sustainability (BMFS) are a way of linking sustainable innovation to an organization's business model, and as a means for management to maintain sustainable activities and strategies across an organization's value chain. The framework of components – value proposition, value creation and delivery, and value capture – can then be used to structure environmental, social, and economic activities within the business model and position them for improved sustainability [8].

The influencing factors for CSM concept are, the amount of commitments of shareholder, the humanism paradigm, corporate culture, management ability to establish good relationship with stakeholders, and internal conditions that are in accordance with the demands of the concept of CSM [9].

EMS Adopted Vs Non- Adopted Organizations:

EMS adoption can be an effective tool for organizations to address economic, social and environmental issues. Moreover, EMS adoption appears to be a viable means to develop business goals and improve CSR activities [39]. EMS is a coordination mechanism that leads to "team-based approaches". [38].

The strong influence of customers and firms' integration in international markets, which is correlated with a high sensitivity to changes in standards and regulations, relates to firms' desire

to signal their environmental quality in international markets and to various stakeholders (e.g., public authorities, customers) [38].

The overall environmental performance of EMS adopter companies was approximately two times higher than non-EMS adopter companies. EMS adopter organizations' performance was almost two times better than non-EMS adopter organizations regarding occupational health and safety. The overall Employee Satisfaction level at non-EMS adopter organizations was about three times better than at EMS adopter organizations. The EMS adopter organizations were found to have about three times performance regarding operational improvement [27].

In many cases, especially for the smaller organizations, low awareness and the absence of pressure from customers (the most important driver for environmental improvements and EMS adoption) and insufficient other drivers mean that few efforts are made to address environmental issues [35].

EMS in India:

Environmental reporting by Indian corporations lags significantly behind that found in the developed world except for a few companies. Environmental reporting in India is still in its infancy. The reason for inadequate environmental disclosure is probably that less pressure is applied to Indian companies by stakeholders, environmental groups, the general public and importantly the government [15].

Indian firms do not consider innovation and cost saving as a significant motivation to employ EMS practices. It is confirmed that larger firms are more likely to adopt comprehensive EMS practices compared to small and medium enterprises (SMEs) [16]. Firms in manufacturing, chemical and agricultural sectors are more likely to adopt comprehensive EMS practices than in service sector [16].The weakest link in the entire system appears to be the certification process, and organizations with little commitment to implementing an effective EMS can generally take advantage of that weakness [25]. Out of all EMS elements the weakest deployment of elements are emergency preparedness and response, corrective and preventive actions, and monitoring and measurement [14].

Conclusion:

The primary objective of this article is to analyze the relation between Environmental Management System and the Organizational Sustainability. This systematic literature review has given insights in to the EMS and its relation to organizational sustainability. The review concluded that Process-based practices seem to have the greatest impact on environmental performance. To preserve the environment for future generations there is need for total assessment of environment and it must be well organized, scientific in nature. Top management commitment plays a vital role and has multiple effects in enhancing competitive advantage through establishing strategy and policies.

Apart from this, supplier integration, green innovation, and customer integration play a vital role in improving the competitive advantage.
The use of environmental management tools leads to better overall business management, including improvements in operational efficiency and productivity. These include waste minimization and pollution prevention; a reduction in the number of accidents; lower clean-up costs; and reduced liability.

The study was carried out with few limitations, there is no handful of reviewed papers covered in Indian prospective relating the research objectives and few papers included in study are with biases.

After analysis it is recommended that, there is need for the strategic practices related to environmental management initiatives for organizational sustainability, Hence, the Government has to intensify the socialization, which involve all stakeholders in environmental monitoring and motivate industry players in entailing systematic and continuous environmental management efforts [34].

It is crucial for the emerging countries to improve environmental education to the next generations. Particularly in India, the leading organizations must take up the responsibility of involving stake holders in implementation process in their plants. Top management of the concerned organizations must take up the lead in implementing EMS with the help of consultants. Leading organizations, expert professionals, government, and academicians must come together, formulate policies and strategies and take up the responsibility of promoting EMS at the national level [14].
Future studies can be on challenges faced by top management in implementation of environmental management systems, challenges faced by the organizations while they are at the beginning stage of EMS implementation and also role of business owners in bringing awareness on EMS to the stake holders.

From the study it is evident that environmental practices have great impact on both environmental and operational performances of the organization which is for sustainability of the organizations. Despite the hurdles in implementation of EMS it indicates that there is strong relation between EMS and the sustainable development.

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