Original Article

A Study Of Governance Of Sustainable Development In Indian Cement Industry

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Abstract

Sustainable development is the concept that prioritises current demands without compromising the capacity of future generations The term sustainable development found importance after Bruntland Commission where it was used in 1987 in its report, our common future.

Then the term Governance implied the structure for distributing the rights and responsibilities among different parties in the corporation and includes the rules and procedures for making decisions in corporate sector.

This paper examines the modern concept of governance and sustainability in the context of cement industry in India. It is an attempt to understand and appreciate the importance of sustainability in the field of the cement corporations of India. This paper defines the key sustainability parameters and then reviews the various cement corporations in accordance to these parameters.

This paper measures the sustainability against factors like economical, social and environmental. The findings of this paper conclude that cement industry in India has taken a major step in sustainable growth and development. The cement companies contribute to society, environment, communities, management of natural resources and building public properties in order to contribute to the Indian economy.

KEYWORDS: Sustainability, Cement industry, Parameters, Compliance

INTRODUCTION

The UK government's Department of Environmental, Food, and Rural Affairs (DEFRA) defines "sustainable development" (SD) as the ‘development which meets the needs of the present without compromising the ability of future generations to meet their own needs’

According to the European Community Programme of Policy and Action in Relation to Environment and Sustainable Development (2005), sustainable development has the following characteristics. Considering the Fifth Environmental Action Program:

- to maintain the overall quality of life;
- to maintain continuing access to natural resources;
- to avoid lasting environmental damage;

- to consider as sustainable a development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

McKeown, R. (2002) takes into account the three components of sustainable development. They define this concept as," Sustainable development is often thought to have three components: environment, society, and economy. The well-being of these three areas is intertwined, not separate".

Our present study focuses on these three concepts of sustainable development. We have studied the major cement corporations in India. We have studied top 12 cement corporations of India and studied their sustainability reports to find out their role in sustainable development.

The three components like McKeown has suggested are taken into account but are also further classified into sub parts. The component of Society is classified into social and Human, Economy is classified in manufactured and financial and Environment into natural.

The component society includes development and welfare of society and people living in it as well as welfare of human resources within the organization.

The next component i.e. economy includes the role of the company in betterment of public services , infrastructure , roads etc. and also its role in the financial sector. The last component i.e. environment includes the role of company in preservation of nature.

REVIEW OF LITERATURE:

Recently, there has been a lot of research and articles published on the importance of sustainable development.

Hansson (2010) explained that if we distinguish between the sustainability of various asset kinds, between those that are relevant to technical purposes and those that are not, some of the problems related with the idea of sustainable development may be handled.

Burritt and Schaltegger (2010) aimed to discuss the recent development of sustainability accounting research, the recognition of critical and managerial paths, and to judge the future of sustainability accounting and reporting.

Pitt et al. (2009) understood the factors best support or prevent sustainable construction practices and ascertain the uniformity of how sustainability is measured.

Hind et al. (2009) explored how businesses may create leaders with the skills necessary to secure the long-term viability of their businesses. It makes an effort to comprehend how taking into account the competencies for integrating social and environmental factors into business decision-making processes can improve understanding and practise of responsible leadership.

Barth et al. (2007) the intention of this paper was to reflect on, the possibilities of both formal and informal learning and their relationship to competence development within higher education.

Harding (2005) presented an introduction to the sustainability concept, barriers on the way of sustainable development, and the application of sustainable development principle.

Dale and Newman (2005) in the study made a distinction between sustainable development education and environmental education and laid emphasis on the importance of problem-based interdisciplinary learning to sustainable development education.

Filho (2000) attempted to discuss some of the misconceptions seen with respect to sustainability at universities and suggests some measures aimed at moving forward.

Pearce and **Atkinson (1993)** outlined a form that a "weak" sustainability indicator could take. The paper found that though consequent from a simple but intuitive savings rule, it established the idea that the level of overall capital stock should be non-decreasing.

OBJECTIVE:

The main objective of this study is to examine the various cement corporations in India to ascertain the extent of their role in sustainable development of the nation.

The study also aimed to determine if there is a significant difference in governance of sustainability of the Public sector cement corporations as compared to those of Private sector cement corporations for the period 2018-20.

RESEARCH METHODOLOGY:

Data has been collected from both public as well as private sector cement corporations in India. The data is collected from secondary sources. The various companies taken into account were: ACC (company), Ambuja Cements, Binani Cement, Cement Corporation of India, India Cements, JK Lakshmi Cement, JSW Cement, Madras Cements Ltd, Mysore Cements Limited, Shree Cement ,Tamil Nadu Cement Corporation and UltraTech Cement. Data has been collected from companies' annual reports, corporate social responsibility reports and sustainability reports of the company. The data has been collected from the recent reports of these companies which meant for the financial year 2018-19 and 2019-20.

A Sustainability Parameter Index was prepared on the basis of the disclosed data collected from the reports of the various companies in cement industry in India. A score of 1 was awarded for the presence of an item and a 0 was awarded for the non-presence of an item. The following were the companies selected for the analysis:

Table 1: Name of the Companies

S.No.	**Name of the Company**
1	ACC Cement
2	Ambuja Cement
3	Binani Cement
4	Cement Corporation of India
5	Indian Cements
6	JK Lakshmi Cement
7	JSW Cement
8	Madras Cement Ltd.
9	Mysore Cement Ltd.
10	Shree Cement
11	Tamil Nadu Cement Corporation
12	Ultra Tech Cement

The above table no. 1 showed the number and name of companies undertaken for the study. The following table no. 2 discusses the sustainability parameter index made according to three factors, which were further classified into sub-factors. These sub factors are studies according to responsibility of corporations as per business entities and the other one were responsibilities as per member of society.

Table 2: Sustainability Parameter Index

Basis	**What does a company do?**	**As a business entity**	**As a member of Society**
Environmental	**1.Technological**	Emissions reduction, Technology and Mining	Usage of Recycled Material and Rain water harvesting
	2.Natural	Energy, Disposal, Proper utilization of Raw material,	Air, Plantation, Water, Climate, Biodiversity, Agriculture and Farm based Activities
Economical	**3.Constructed**	Living and Working Space and Roads	Infrastructure and development of public roads
	4.Financial	Stakeholder engagement and economic reforms	Compliance, Training
Social	**5.Human**	Employee well-being, Human Rights Policy, Favorable labor Practices and Relations with management, Hazardous labor practices and employee benefit expenses	Knowledge, skills, Training and Education
	6.Social	Grievance mechanism, Customer Care, Culture	Communities, Education, Equality and Women Empowerment, Enriching Livelihood and rural empowerment

DATA ANALYSIS AND INTERPRETATION:

The study was conducted for two years and comparison was made between public and private sector cement corporations. The hypothesis were formulated and tested with help of t-test. The assumptions were tested and the following results were found:

ENVIRONMENTAL

H01: There is no significant difference between public and private sector cement corporations as w.r.t. sustainability in technological factors.

Table 3:

Technological	**Public**	**Private**
Emissions Reduction	2	9
Technology Upgradation	2	10
Mining	1	6
Usage of Recycled Material	0	6
Rain Water Harvesting	0	4

As per table 3, the calculated value for t is 2.7105 more than table value 1.86 at 5% level of significance; therefore we reject our null hypothesis. Hence we can say that there is significant difference between public and private sector cement Corporation's w.r.t. sustainability in technological factors. In respect to the public sector, where emissions reduction and technological upgradation has been given full attention but when it comes to usage of recycled material and rain water harvesting, the performance is low. Reviewing the performance of the private sector, they have performed well in technological upgradation but not in the case of efforts for rain water harvesting.

But if we compare the performance of both public and private sector we can say that there is a major difference in factors like usage of raw material and rain water harvesting between these two sectors. Private sector is performing better than the public sector.

H02: There is no significant difference between public and private sector cement corporations as w.r.t. sustainability in Natural factors.

Table 4:

Natural	**Public**	**Private**
Air	1	5
Plantation	1	7
Water	1	9
Energy	2	10
Waste	0	8

Disposal	0	7
Climate	0	6
Raw Material	1	9
Biodiversity	0	6
Agricultural and Farm-Related Activities	0	7

As per table 4, the calculated value for t is 32.5 is more than table value 1.734 at 5% level of significance, therefore we reject our null hypothesis. Hence we can say that there is significant difference between public and private sector Cement Corporation's w.r.t. sustainability in natural factors. In respect to the public sector, where energy has been given full attention but when we analyze the results of waste disposal, climate and biodiversity, the performance is disappointing. Reviewing the performance of the private sector, they have performed well in energy but not in the case of efforts that should be made to control air pollution.

But if we compare the performance of both public and private sector we can say that there is a major difference in factors like conservation of biodiversity, climate and waste disposal between these two sectors. Private sector is putting more efforts to conserve these resources.

ECONOMICAL

H03: There is no significant difference between public and private sector cement corporations as w.r.t. sustainability in constructed factors.

Table 5:

Constructed	**Public**	**Private**
Infrastructure	1	9
Roads	1	5
Living and Working space	1	3

As per table 5 , the calculated value for t , 1.2247 is less than table value 2.132 at 5% level of significance, therefore we accept our null hypothesis. Hence we can say that there is no significant difference between public and private sector Cement Corporation's w.r.t. sustainability in constructed factors. In respect to the public sector, they perform satisfactorily in all taken constructed factors but when we review the performance of the private sector, they emphasized more on infrastructure development and less on living and working space.

But if we compare the performance of both public and private sector we can say that they both perform well in infrastructure but there lies some difference between performance in building living and working space for their employees.

H04: There is no significant difference between public and private sector cement corporations as w.r.t. sustainability in financial factors.

Table 6:

Financial	**Public**	**Private**

Stakeholder Engagement	1	9
Compliance	2	10
Economic reforms	1	3

As per table 6, the calculated value for t, 1.0021 is less than table value 2.132 at5% level of significance level, therefore we accept our null hypothesis. Hence we can say that there is no significant difference between public and private sector Cement Corporation's w.r.t. sustainability in financial factors. In respect to the public sector, they perform well in compliance regarding financial disclosures but give little effort to stakeholder engagement in management system and economic reforms. But when we review the performance of private sector, they emphasized more on compliance but little efforts are made on bringing changes in economic reform

But if we compare the performance of both public and private sectors we can say that they both lack in making efforts in economic reforms.

SOCIAL

H05: There is no significant difference between public and private sector cement corporations as w.r.t. sustainability in factors regarding society.

Table 7:

Society	**Public**	**Private**
Community Development	1	10
Grievance mechanisms	0	6
Education	1	9
Health	1	10
Culture	1	7
Customer Care	1	6
Equality and Women Empowerment	1	8
Enriching Livelihood	0	8
Rural Empowerment	1	8

As per table 7, the calculated value for t= 12.535 is more than table value of 1.746, at 5% level of significance, therefore we reject our null hypothesis. Hence we can say that there is significant difference between public and private sector Cement Corporation's w.r.t. sustainability in factors regarding society. In respect to the public sector, the analysis regarding grievance mechanisms and efforts regarding enrichment of livelihood are not given due consideration, but when we review the performance of the private sector , they have performed well in community development and health factors but not in case of grievance mechanisms.

But if we compare the performance of both public and private sectors we can say that there is a major difference in factors like enrichment of livelihood between these two sectors where the private sector is performing outstandingly.

H06: There is no significant difference between public and private sector cement corporations as w.r.t. sustainability in human factors.

Table 8:

Human	**Public**	**Private**
Knowledge and skills	1	10
Health and Safety	1	10
Employee benefit Expenses	1	8
Employee Wellbeing	1	10
Human Rights Policy	1	9
Training and Education	1	10
Favorable Labor practices and relation with management	2	9
Hazardous labor Practices and work activities	0	6
Critical Incidents Reporting	0	3
Rewarding and Performance Measurement	1	3

As per table 8, the calculated value for t is 3.7278 which is more than table value of 1.734, at 5% level of significance therefore we reject our null hypothesis. Hence we can say that there is significant difference between public and private sector Cement Corporation's w.r.t. sustainability in human factors. In respect to the public sector, they are emphasizing on favorable labor practices whereas they hesitate in disclosures regarding critical incidents reporting, but when we review the performance of the private sector, they too hesitate in critical incident reporting and also lack in practices of rewarding and performance measurement.

But if we compare the performance of both the public and private sector we can say that there is a major difference in factors that include disclosure of hazardous labor practices and work activities.

MAJOR FINDINGS

The study has undertaken various parameters to define the sustainability in various cement corporations in India. From the data collected we can infer that these corporations are making special emphasis on improved technological methods like emissions reduction and technological upgradation. Then their contribution to the society can also not be undermined as their role in community development, health and safety of their employees, their wellbeing and their training and education as well as education to the society is significant.

However when it comes to depleting the environmental resources, only a few of the cement corporations are making efforts to protect the environment. This can be inferred from the data of the air, climate and disposal subsections. And also few of the companies are making efforts in case of hazardous labor practices whereas these are the firms where employees have to work in mines underground.

SUGGESTIONS AND RECOMMENDATIONS

The present study focused on sustainability in the cement industry and the concept of sustainable development is getting a boost not only in India but in the world economy as well. Development nowadays is important but giving due consideration to the needs of future generations and leaving valuable natural resources safe for them as well, companies need to focus on the concept of sustainability. Limitations of the study include the fact that expenditure done by the cement corporations on sustainable development has been studied for the period of two years. It could have been reviewed for more than two years. Then the companies included in the current study are the major companies in cement production; few companies in this industry that may not hold a big market are ignored. Efforts should be made to cover whole cement industry and a wider coverage of time period and more sustainability factors could have been covered

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