

## Sustainable reporting practices of selected cement companies in India: A case study

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### ABSTRACT

Sustainability reporting, under organizational reporting framework, gives information about economic, environmental, social, and governance performance (GRI). Corporate sustainability reporting has a strong practice of environmental reporting with corporate principles. Despite various guidelines such as GRI, the reporting and presentation of sustainable items are not common in practice. The study aims to analyze the current sustainability of Accounting Practices in Indian Cement Companies. To analyze the same, researchers have taken a case study of five prominent cement companies, JK Cement Ltd., Shree Cement Ltd., ACC Cement Ltd., Binani Cement Ltd., and Ambuja Cement. The study observed the common reporting methods of the selected companies under various common heads in the Indian Cement companies and later to make a comparison amongst them, further by taking the views of the company respondents, with a questionnaire. For measuring combined effect of the selected companies, financial and non-financial disclosure of the selected 13 items for sustainable reporting has been considered, and to analyze the independent variables having influenced upon the combined effect of dependent variables MANOVA statistical technique was applied. It was found that there is a critical difference in the reporting of financial and non-financial sustainability factors by Indian cement companies. The study concluded that the corporations should follow the best standards of environmental sustainability for strengthening their activities and documentation on sustainable growth.

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## 1. Introduction

Sustainability is the ability to maintain a certain status or process in existing systems. The most frequent use of the term “sustainability” is connected to biological or human systems in the context of ecology (Botequilha-Leitão & Díaz-Varela, 2020; Ives et al., 2020; Albert, 2019). Sustainability is also the ability of an ecosystem for an extended period to function and maintain productivity. In 1987, the World Commission on Environment and Growth released a study reflecting the sense of manageability regarded as the “Brundtland Concept”. This is the most agreed concept globally, which notes that sustainability “meets the needs of the current without undermining the capacity of future generations to satisfy their own needs” (Yeh, 2019). More and more research data are being gathered demonstrating that citizens and human culture use natural capital at an unreserved pace. It becomes clear that a massive and uncoordinated attempt needs to be made to regulate the human use of natural resources by way of a concentrated effort. People must behave reasonably and money can only be utilized at a scale that can be filled out. It

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should be the primary priority for all human society to take care of our environment. Our sustainability efforts should be for the present generation as well as for all future generations (Drolet et al., 2019). Ideally, this should not be a responsibility but more a wish on our hands. But acting in the manner that is regulated by law sometimes only allows our consciousness to become so passionate about our way. In the end, we are both accountable for what ends up in our lives—the positive and the poor. It is therefore up to us to participate as people and consumers and ultimately as environmental managers in our positions. The sustainability report is an operational report that offers details on fiscal, financial, social, and governance success (GRI). Corporate green news has a lengthy tradition of environmental reporting. The first environmental studies were released in the late 1980s by chemical manufacturing firms with severe picture issues. The other category of early reporters was a party of dedicated small to medium-sized companies with very sophisticated environmental protection programs (Botequilha-Leitão & Diaz-Varela, 2020). Non-financial reporting, such as sustainability and CSR reporting, is a somewhat new development that has evolved over the last 20 years. Many organizations are already creating a regular sustainability study and there is a broad variety of scores and criteria available. There is a range of explanations that businesses want to create these documents, but at their heart, they are supposed to be “vessels of transparency and accountability” (Ives et al., 2020; Albert, 2019). They must also aim to develop organizational procedures, influence customers, and persuade investors (Globalreporting.org). The cement companies over the period have been recognizing their sustainable practices on the three pillars of sustainability i.e. Social, Environmental, and Economic (Albert, 2019). Now in the new era, the stakeholders are not limited to one country and nor their requirements are limited to financial reporting. Thus, it is also measured that a company in the far east or far west is working with the ethics of a sustainable future or not. Investors across the globe want to know what the company is doing for the society, environment, and people on a sustainable basis. Sustainable Reporting is a must for companies to show their interest and work towards the planet, people, and profit. The companies are doing CSR activities and following ethics too, but they are not reporting them adequately. So, there is a need to report and follow Sustainable Framework for their industry. Thus, the objective of this research paper is to analyze the ethical practices related to sustainability accounting in selected cement companies in India.

## 2. Review of Literature

Many studies were conducted on the sustainability and sustainable activities of the business-like Bowman and Haire (1975) examined the connexion between corporate performance and disclosures of food manufacturing firms in the United States. Based on a broad variety of accounting reports from the US business and business group, Cowen et al. (1987) looked at the relationship between a number of business attributes and particular aspects of social responsibility declarations, while there appears to be a connexion with the presence of a commission on corporate social responsibility. A modern overview of the tradition of social divulgation by New Zealand corporations was provided by Hackston and Milne (1996). The essay also explored several key determinants of social divulgation in New Zealand firms and observed that the size divulgation association with high-profile manufacturing corporations was far greater than that for low-profile industrial companies. The relationship between business and scale is important since it indicates that just relative sizes are not enough metrics for the amount of knowledge accessible. In a study of 150 annual records from six European nations, Adams et al. (1998) analyzed corporate social accountability activities. The research grouped social knowledge into three categories: environmental reporting, employee reporting and ethical reporting. The results of the analysis revealed that the volume and type of social knowledge in various countries vary greatly. Magnan (1999) attempted to establish the environmental disclosure determinants of Canadian firms and noticed that information expenditure and the financial circumstances of the company were important variables in environmental disclosure. It was recognized that organization size, corporate transparency regulatory regime and business features were related to environmental transparency. Triple bottom-line divulgation (TBL) by 50 of the larger firms of the United States and Japan (2007) was analyzed by Jennifer Ho and Taylor. The monitoring spectrum for total TBL (compound fiscal, social and environmental categories) for firms with broad sizes, reduced profitability, weaker competitiveness and for companies that are part of the processing sector was expanded. The scope of total TBL reporting for Japanese businesses was larger, the main driving factor being environmental transparency. Reverte (2009) has examined the connexion of the Spanish classified corporations' organizational characteristics to environmental transparency. The results showed that businesses that have a higher rating of CSR are statistically slightly bigger and linked to more media than companies with lower CSR ratings and have a more environmentally conscious sector. In Portugal, Maria et al. (2010) examined reasons to clarify the degree of transparency in the industry and noticed that business size is linked favorably to the level of environmental transparency, as well as the likelihood that a corporation is reported at the stock exchange.

It has therefore been found that analytical research on environmental determinants in developing countries such as the USA, UK, Japan, Germany, New Zealand, and others are sufficiently described in our literature. There has been relatively little consideration given to developed countries globally and to Indians in particular (Li et al., 2013; Placet et al., 2005; Klee, 2004). Several analytical studies define Indian corporations' current state, degree, and essence of environmental reporting (Fogarassy et al., 2018; Khan et al., 2014; Placet et al., 2005; Klee, 2004). In the 10 K and yearly accounts of 234 firms in 12 sectors between 1986 and 1991, Gamble et al. (1995) (US) examined the accuracy of environmental details) (Gray et al., 2019). An

instrument was developed to assess the content and descriptive reporting codes of environmental reports, based on the way the sample entities reported environmental details (Khan et al., 2014).

### 3. Research Methodology

The research begins in the first process of analysis as an exploratory of design. A systematic literature review helped to explore the void in current literature and discussed the role of business stakeholders in creating sustainable accounting studies. A comprehensive study was performed in the primary step of the survey which came into a definitive design. The analysis used items from validated questionnaires from earlier studies, such as items from the GRI, financial, social, and economic costs and the associated gains deriving from disclosing companies' operations, besides producing self-developed posts. For this purpose, 5 companies i.e., JK Cement Ltd., Shree Cement Ltd., ACC Cement Ltd., Binani Cement Ltd., and Ambuja Cement Ltd were selected on the basis of their production capacity. They cover over 75% production capacity of the country. The quantified effects of CO<sub>2</sub> production, terms of working and payment, financial accountability, and so on were several indicators of regulatory activity. GRI criteria are focused on established working practices and the environmental implications of an impartial audit in evaluating the social effect generated by the reporting agency. The criteria for evaluating environmental impacts ISO 14010, ISO 14011, ISO 14012 and ISO 26000 are established, whereas the OHSAS 18001 create a risk assessment method of health and safety. The data derived from the annual report or sustainable reporting of cement firms on the fundamental variables of GRI efficiency measurements is calculated. The theories framed in the trial are ultimately evaluated using the questionnaire as an investigational method (Gray et al., 2019). In the following process, the academics conductor of the analysis on the same topic was consulted and led to a focus group discussion with experts with a realistic experience in cement companies to promote the noble ship of the idea. The focus group was assembled by 10 senior managers from the 5 selected cement companies. The exercise helped researchers obtain deeper insights into disclosing their cement company's sustainability activities through their understanding of sustainable activities that met their goals. Furthermore, a sample was designed and tested by a pilot study carried out on ten senior managers before it was used. The study was carried out by a multistage panel of Departmental Administrators, Accountants, and Financial personnel. Initially an approximate sample size of 1,000 was sufficient, but 1250 questionnaires of these were agreed to be provided and 986 answers were considered appropriate for further study. This evaluated IBM SPSS (Version 19) of the data obtained. The respondents were also questioned about the degree of satisfaction dependent on cumulative knowledge in the monitoring of sustainability and the chance action ultimately taken. A format of a five-point ordinal Likert scale was used with the response continuum ranging from 1 to 5, where 1 = strongly disagree; 2 = disagree; 3= neutral; 4 = agree and 5 = strongly agree.

### 4. Current Sustainable Accounting Practices of Indian Cement Companies-

#### 4.1 Case- 1: JK Cement Ltd.

JK Cement has partnered India's multi-sector infrastructure needs in addition to its quality outstanding, consumer emphasis and technological leadership. With an annual capacity of 10.5 million tons per annum (MnTPA), the firm is India's second-largest white cement producer, with prized construction goods like wall putty. The company is also the second largest manufacturer of wall mastics in the world with a capacity of 6,00,000tonsannually built. J.K. Cement was the first corporation in Bamania, Rajasthan, to build a captive power plant in 1987. Besides, JK Cement is the first cement company to build a waste heat recovery plant which meets the green energy requirements. The organization currently has a captive power generating capacity of more than 100 MWs at its multiple locations. The company has opened its first foreign venture in the free trade zone in Fujairah, the U.A.E., to cater for the GCC and African industry, with the development of a green-field dual-process white-cum-gray cement factory. The Fujairah plant is capable of manufacturing white cement with a capacity of 0.6 million tons/year and a versatility in its activity to manufacturing production of 1 million tons/year as JK's first shipment. Cement functions, Fujairah was a major move towards expansion in March. JK Cement is also interested in the systematic growth of societies. Many families have been laughed due to their plans and sustainable programs. As part of our community involvement, they have established schools, universities, Colleges, institutes for training, hospitals, temples, and other social infrastructures. Their strategy for mass upliftment is embodied in a robust and continuing campaign that includes involvement in a number of social, economic, wellness, educational and religious initiatives. Driven by founding fathers' strong vision of the philanthropic business, JK Cement has a strong responsibility to culture, partners, and the community. The business is also a member of the Indian Green Building Council (IGBC-NP-1024 membership).

#### 4.2 Case-2: Shree Cement Ltd.

The company has Capacity of cement is 17.5 million tons a year. The plants are based in Rajasthan, Uttarakhand and in Bihar. The new project is being initiated by Baloda Bazar in Chhattisgarh, near Raipur and Cement grinding in Bulandshahr, Uttar Pradesh. The new projects are being built by a corporation. There are many products including Shree Ultra, Bangur, and Rockstrong Cement. They have Beawar thermal power station with overall electricity generating capacity of 597 MW and includes a total thermal power station (150 MWx2) commissioned in 2011-12. It involves green power plants: 81 MW (the

highest potential in the global cement industry outside China). Green power plants are now being installed in new locations. By leveraging their capacity and capabilities, Shree has become a big market pioneer, a Group I Power Trading Licensee. The Shree power is one of the three Indian companies named by the World Economic Forum as the Latest Sustainability Champion in September 2011. First Indian Cement Firm to join the World Business Council for Sustainable Development's Cement Management Project, Switzerland. World Cement Industry's first organization to file "Optimal Usage of Clinkers" with UNFCCC as a CDM initiative resulting in 0.45 million of CERs released. The multinational benchmarking business Whitehopleman United Kingdom has the highest 4-star ranking for the 13th straight year. The first cement firm to develop synthetic gypsum in India to supplement natural gypsum usage in development of cement. BS-EN 16001-2019 certificate implementing First Operation & Cement Business (Now ISO 50001). In FY 2012-13, CO<sub>2</sub> emissions of the company have also dropped by 3.46 percent as a sustainable initiative (585 kilos of CO<sub>2</sub> / MT cement to 606 kilos of CO<sub>2</sub> and MT cement)

#### *4.3 Case-3: ACC Cement Ltd.*

ACC Limited has a country-wide network of factories and marketing divisions, rendering it India's largest cement and mixing producer. ACC was founded as a leader and trend-setter of concrete technology and was formed of 1936. The brand name of ACC is synonymous with cement and is equity-based on the Indian market. As a corporate strategy, ACC has received many distinctions and recognitions for sustainability initiatives in its plants and mines being the first businesses in India to be dedicated to environmental conservation. The business was also praised for its successful corporate citizenship actions. As one stop shop for low-cost local green construction and skills, ACC has built Green Building Material Centers in the municipality of Maharashtra, Uttar Pradesh, Madhya Pradesh, and Rajasthan.

The company is honored with the CII-ITC Sustainability Trophy, one of India's Most Successful Businesses, the highest distinction given by CII ITC for 2013. Fortune India and Hay Group India rate as India's Most Admired Cement Firm. In 2014 ACC introduces the first Waste Heat Recovery Device (WHRS) in the city of Gagal (January 2014). The WHRS utilizes excess heat from processing exhaust gases to turn it to usable electricity. The company is also setting up a factory in Bardhaman, West-Bengal, to develop eco-friendly, scientifically superior fly-ash based bricks for sustainable development and launches a new unit of cement blending in the village of Padubidri, Udupi district, Karnataka with a mixing ability of 30,000 tons per month of Portland Pozzolana Cement (PPC).

#### *4.4 Case-4: Binani Cement Ltd.*

The Braj Binani Group's flagship firm, consistency, power, and durability are terms which are associated with Binani Cement. Binani Cement is the chosen alternative for architects, producers, and contractors in "cement". The base of several prominent ventures in India and outside of the world is the Métro de Dubai and the state-of-the-art Port Khalifa in Abu Dhabi. It is a respectable Indian cement producer of 11.25 million tons a year with an integrated plant in both India and China and grinding plants in Dubai, with global output potential. The inventory comprises: Typical Portland Cement, Pozzolona Portland Cement and Ground granulated blast-flame (GGBFS). The cement plant in Binanigram was originally set up at 1.65 million tons per year (MPTA), but today the cement output is 6.25 MTPA. Binani Cement rendered gigantic strides on the international scene following its performance on the Indian industry. Today in China- Shandong Binani Rongan Cement Co. it has production sites. Dubai-Binani Cement Factory LLC (SBRCCCL) sets global expectations. In India, the UAE, the UK, Sudan, South Africa, Tanzania, Namibia, Binani Cement has a well-established distribution network. Binani Industries Ltd is dedicated, in responsible business action and stakeholder interests, to solve any important element of sustainability. The aim is for present and future generations to experience a better environment planet. Their business strategy is progressively and innovatively based on performance quality not just through sales and economic development, but also through environmental protection and social equity. The corporation assumes that environmental threats be turned into market opportunities. The tasks in community planning concentrate on the development of the local authorities surrounding their production operations. The business partners with the communities and plays a key catalytic role in their growth. As part of the company's dedication to equitable growth and to developing a healthy and business-oriented climate, the organization has introduced many programs to promote different social development activities. Environmental features such as air contaminants, waste and effluents are tracked, and annual updates on our environmental results are rendered open to key stakeholders. Related environmental management instruction is provided to staff, which helps them integrate sustainability into their DNA.

#### *4.5 Case-5: Ambuja Cement Ltd.*

Ambuja Cements Ltd, part of Holcim's multinational group, is one of India's largest cement manufacturers and has accomplished more than 25 years of operations. The firm, initially known as Gujarat Ambuja Cements Ltd, was established in 1983 by Narotam Sekhsaria in partnership with Suresh Neotia. National cement giant Holcim gained ownership of Ambuja in 2006. The Group has made significant acquisitions in ACC Limited. It is a well-established Indian brand for Ordinary Portland Cement (OPC) and Pozzolana Portland Cement (PPC), with large footprints throughout the western, eastern, and northern markets of India.

Their clients vary from private house builders (IHB) to governments to major building corporations. Ambuja has evolved dynamically over the last decade. The existing cement production is 27.25 million tons. They have five integrated cement manufacturing plants and eight cement grinding plants throughout the region. It is the first Indian cement producer to construct a captive port with three terminals along the western coast of the world to promote prompt, cost-effective and environmentally clean bulk cement shipments to its customers.

Today, the company has developed itself as one of the most successful cement producers in the world. Its environmental protection policies are the best in the world. It is one of India's most growing and creative cement plant. The organization has also been pioneering the production of several bio-mass co-fired power generation technologies in its captive plants. The most distinguishing characteristic of the Firm is its commitment to industry. Ambuja practices a peculiar home-grown ideology named "I CAN", which allows citizens the ability to set their own objectives and the opportunity to accomplish their goals. Its emphasis has been consistent on two main building blocks that are resonated across its day-to-day operations-consistency (of the product) and protection (of the human capital engaged in the development of the product).

In both sites, they have noticed 100 per cent remediation of the mined field, 100 per cent recycle of the soil, zero wastewater disposal and pollution far below regulatory requirements. Many of their units are accredited to the Global Standard-Environmental Management Framework (ISO 14001:2004). Further, they are accredited with the Integrated Control Framework, namely the Quality Management System (ISO 9000), the Environmental Management System (ISO 14001) and the Occupational Health and Safety Management System (OHSAS 18001). They periodically track the environmental efficiency of their units via the Plant Environment Efficiency (PEP) Management Method and Process. the company has won several awards for its high efficiency, low power usage, low fuel consumption, best emission management and environmental protection initiatives, as well as electricity protection.

## 5. Current reporting practices

As we could know about the current practices of the cement plants, the sustainability and its reporting are measured and presented in Table 1 as per the objective of the study.

**Table 1**  
Comparative Analysis of Financial Statements of Select Cement Companies of India

ACC	Expense Heads			
	AMBUJA	BINANI	JK	SHREE
<ul style="list-style-type: none"> <li>• Purchase of Trading cement</li> <li>• Manufacturing and other expenses</li> <li>• Depreciation and Amortization</li> <li>• Interest expenses</li> </ul>	Exist under the head Community Development & Welfare Expenses - <ul style="list-style-type: none"> <li>• Community Welfare Expenses</li> <li>• Educational Expenses</li> <li>• Charities &amp; Donations</li> <li>• Integrated Rural Development Expenses</li> <li>• Health &amp; Sanitation Development</li> <li>• Vocational Training Expenses</li> <li>• Cattle Camp / Animal Husbandry Expenses</li> <li>• Krishi Vikas Kendra Expenses</li> <li>• Kharas Vistarotan Yojana</li> </ul>	<ul style="list-style-type: none"> <li>• Cost of materials consumed</li> <li>• Purchase of stock-in-trade</li> <li>• Changes in inventories of finished goods, work-in-progress and stock-in-trade</li> <li>• Employee benefit expenses</li> <li>• Financial costs</li> <li>• Depreciation and amortization expense</li> </ul>	<ul style="list-style-type: none"> <li>• Cost of Materials Consumed</li> <li>• Purchases of Stock-in-Trade</li> <li>• Changes in inventories of finished goods work-in-progress and Stock-in-Trade</li> <li>• Employee Benefits Expense</li> <li>• Finance Costs</li> <li>• Depreciation and Amortization Expense</li> <li>• Other Expenses</li> </ul>	<ul style="list-style-type: none"> <li>• Cost of Materials Consumed</li> <li>• Purchase of Stock-in-Trade</li> <li>• Changes in Inventory of Finished Goods and Work-in-Progress</li> <li>• Employee Benefits Expense</li> <li>• Power and Fuel</li> <li>• Freight and Forwarding Expenses</li> <li>• Finance Costs</li> <li>• Other Expenses</li> </ul>

The above items are selected based on the analysis of annual reports and sustainability reports of the selected companies. These items revealed that There is a vast difference between reporting of sustainability and sustainable items among these cement companies of India. as we can see that the sustainability report is made by only two companies Ambuja cement and Shree Cement Limited while the other three companies selected for this research work ACC, Binani and JK Cement have not even prepared the sustainability report.

Table 2 revealed the name of the companies presenting sustainability financial reporting in their annual accounts or in the form of separate sustainable reporting.

**Table 2**  
Availability of Sustainability Financial Reporting

ACC	AMBUJA	BINANI	JK	SHREE
Not Available	Available	Not Available	Not Available	Available

As from Table 2, out of the five selected companies, there were only two companies repairing separate sustainability report. Further, the sustainability reporting heads were gathered from their annual report or from the sustainability report of the selected companies to make a comparison between the selected items and their requirement for the stakeholders as per top officials of the company (See Table 3). The sustainability reporting heads of the selected companies as per the views of top authority includes the selected companies.

**Table 3**  
Sustainability Report Heads

ACC	AMBUJA	BINANI	JK	SHREE
Non- financial	Financial	Non- financial	Non- financial	Financial
<ul style="list-style-type: none"> <li>• Environmental Performance- Energy</li> <li>• CO2 Emissions</li> <li>• Atmospheric Emissions</li> <li>• Mineral Resources Management</li> <li>• Alternative Fuels and Raw Materials</li> <li>• Water and Waste Management</li> <li>• Sustainable Construction</li> <li>• Social Performance</li> <li>• Community Engagement</li> <li>• Employment Practices</li> <li>• Occupational Health and Safety</li> <li>• Fair Business Practices</li> <li>• Product Responsibility</li> </ul>	<ul style="list-style-type: none"> <li>• Co-ordination &amp; Administration</li> <li>• Human Development</li> <li>• Rural Infrastructure</li> <li>• Water Resource Management</li> <li>• Agro-based Livelihoods</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental Issues -</li> <li>• Water conservation</li> <li>• Air emissions</li> <li>• Managing energy</li> <li>• Social Issues</li> <li>• Employment generation</li> <li>• Meeting employee expectations</li> <li>• Enhance social development action</li> </ul>	<ul style="list-style-type: none"> <li>Exists under CSR heads:</li> <li>• Environment Preservation/Go Green</li> <li>• Education</li> <li>• Healthcare</li> <li>• Vocational Training</li> <li>• Community Welfare</li> <li>• Spirituality</li> </ul>	<ul style="list-style-type: none"> <li>• Exist under the head Expenditures on social and environmental activities-</li> <li>• Spending on environmental expenditures</li> <li>• Spending on developing community infrastructure</li> <li>• Spending on other community development activities</li> <li>• Total financial provision in mine closure plans</li> </ul>

While analyzing the annual report and the scheduled interview with the finance manager or general manager of the selected companies, it was also identified that the companies were not only using GRI as reporting initiatives but they were using the other reports like UN Global compact, KPI, compliance report of environment clearance, AAQR, UNGC Assurance statement given by KPMG (See Table 4).

**Table 4**  
Other Reports

ACC	AMBUJA	BINANI	JK	SHREE
GRI, UN Global Compact principles	KPI	GRI	Compliance report of Environment Clearance, AAQR	GRI, UNGC, Assurance statement from KPMG

The use of different reports put time faces on the requirement of sustainability and their reporting in the cement companies, although these reports do not indicate which type of reporting they are doing but for the purpose of stakeholders requirement it is proposed that they should use the financial performance and its reporting in place of non-financial presentation of sustainable heads in their annual accounts or in their sustainability accounts or in their sustainability accounts.

## 6. Measuring Reporting patterns

As per the research objective of the paper to analyze the ethical practices related to sustainability accounting in selected cement companies and as per above table-3 to identify the sustainable practice of the companies the following hypothesis were developed:

**H<sub>0(a)</sub>:** There is no difference in the presentation of sustainable items in selected companies.

To identify the above hypothesis the Chi-square test was used with the help of SPSS-19 software. The results of this test were shown in Table 5 and Table 6.

**Table 5**  
Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
ACC	13	1.0769	.27735	1.00	2.00
AMBUJA	13	1.5385	.51887	1.00	2.00
BINANI	13	1.1538	.37553	1.00	2.00
JK	13	1.3077	.48038	1.00	2.00
SHREE	13	1.0769	.27735	1.00	2.00

**Table 6**

## Test Statistics

	ACC	AMBUJA	BINANI	JK	SHREE
Chi-Square	9.308a	.077a	6.231a	1.923a	9.308a
Df	1	1	1	1	1
Asymp. Sig.	.002	.782	.013	.166	.002

- 0 cells (.0%) have expected frequencies less than 5.
- The minimum expected cell frequency is 6.5.

As per the above analysis it was found that in the case of ACC limited the value of  $\chi^2=9.308$  with the

The actual result of the chi-square goodness-of-fit test is shown under Table 6 which revealed that in the ACC companies test statistic is statistically significant in  $\chi^2 = 9.308$ , significance value  $p=0.002$  revealed that  $p < 0.05$ . Therefore, we can reject the null hypothesis and conclude that the difference between presentations of sustainable items in ACC Company was significant.

In case of Ambuja the result revealed that in the test statistic is statistically not significant as  $\chi^2 = 0.077$ , significance value  $p=0.782$  revealed that  $p > 0.05$ . Therefore, we cannot reject the null hypothesis and conclude that the difference between presentations of sustainable items in Ambuja Company was not significant.

In case of Binani Cement the result, the result revealed that in the test statistic is statistically significant as  $\chi^2 = 6.231$ , significance value  $p=0.013$  revealed that  $p < 0.05$ . Therefore, we can reject the null hypothesis and conclude that the difference between presentations of sustainable items in Binani Cement Company was significant.

In case of JK Cement the result revealed that in the test statistic is statistically not significant as  $\chi^2 = 1.923$ , significance value  $p=0.166$  revealed that  $p > 0.05$ . Therefore, we cannot reject the null hypothesis and conclude that the difference between presentations of sustainable items in JK Cement Company was not significant.

In case of Shree cement the result, the result revealed that in the test statistic is statistically significant as  $\chi^2 = 9.308$ , significance value  $p=0.002$  revealed that  $p < 0.05$ . Therefore, we can reject the null hypothesis and conclude that the difference between presentations of sustainable items in Shree Cement Company was significant.

## 7. The requirement of sustainable items

For measuring combined effect, for companies providing financial and non-financial disclosure of the selected 13 items for sustainable reporting, a hypothesis is prepared for measuring perception towards disclosure of sustainable items as following.

**H<sub>0(b)</sub>:** Companies providing sustainable report in financial and non-financial terms has no difference in respect of disclosure of total expenditure sustainable reporting factors.

To analyze the independent variables having influenced upon the combined effect of dependent variables, we explore the multivariate effects using MANOVA. In the present case, the independent variable is represented by the category of cement companies for providing financial and non-financial sustainable report; and dependent variables are composed of perception scores of company's stakeholders on disclosure of expenditure financial and non-financial factors (Ulupui et al., 2020; Hailu et al., 2017; Khan et al., 2014; Babakhan et al. .2012). MANOVA effect measures how sustainable Environmental reporting scores (in combination) differ in respect of companies providing Financial and non-financial sustainable reports. The univariate output examines how the scores vary across each category of company. In the current case, the independent variable has two groups. Therefore, we have to look only for mean scores to analyze the difference. The result of MANOVA used with Hotelling's Trace to determine the multivariate outcome because of having two groups with the independent variable. For the analysis of univariate outcome, it is usually significant to treat each univariate portion, as an independent one-way ANOVA. It is presented in Table 7.

Table 7 presents the multivariate output existed an insignificant value for Hotelling Trace ( $p > 0.05$ ), which nullify the multivariate effect for the combined dependent variables of sustainable reporting of selected 13 factors among the respondents who are providing financial and non-financial sustainable reports (Hotelling Trace=0.066,  $F_{(1,984)}$ ,  $p > 0.05$ ). To analyze the univariate outcome, the homogeneity of univariate between-group variance is important. Univariate homogeneity of variance across the two groups is tested by Levene's test of variance equality. It is found to be significant (as  $p > 0.05$ ). ANOVA has shown in-significant main effects for financial and non-financial disclosure of the Sustainable reporting ( $F_{(1,298)}=0.093$ ,  $p=0.761$ ) factors.

**Table 7**  
MANOVA Analysis

<b>a- Descriptive Statistics</b>					
Variables	SPSS Code	Fin nonFin	Mean	Std. Deviation	N
Environmental Performance and Preservation/Go Green	ER_1	Financial term	3.8000	1.10680	465
		Non-financial Term	3.8215	1.10801	521
		Total	3.8114	1.10693	986
Managing Energy use and waste	ER_2	Financial term	3.7871	1.17437	465
		Non-financial Term	3.8292	1.16833	521
		Total	3.8093	1.17078	986
Atmospheric Emissions, Air/ CO2 Emissions	ER_3	Financial term	3.4860	1.08493	465
		Non-financial Term	3.5988	1.02578	521
		Total	3.5456	1.05506	986
Mineral Resources Management with total financial provision in mine closure plans	ER_4	Financial term	3.3570	1.14540	465
		Non-financial Term	3.1036	1.10454	521
		Total	3.2231	1.13052	986
Alternative Fuels and Raw Materials	ER_5	Financial term	3.4151	1.18257	465
		Non-financial Term	3.2937	1.04887	521
		Total	3.3509	1.11500	986
Water and Waste Management Sustainable Construction	ER_6	Financial term	3.2495	1.16806	465
		Non-financial Term	3.0768	1.14264	521
		Total	3.1582	1.15733	986
Enhance social development action and Social Performance	ER_7	Financial term	3.4237	1.09420	465
		Non-financial Term	3.0499	1.20950	521
		Total	3.2262	1.17095	986
Spending on Community Engagement and development activities	ER_8	Financial term	3.5849	1.07969	465
		Non-financial Term	3.4491	1.05876	521
		Total	3.5132	1.07029	986
Human Development and Employment generation and Practices	ER_9	Financial term	3.5376	1.12341	465
		Non-financial Term	3.4933	1.24825	521
		Total	3.5142	1.19062	986
Occupational Health and Safety and Healthcare	ER_10	Financial term	2.9527	1.18627	465
		Non-financial Term	2.8964	1.17211	521
		Total	2.9229	1.17855	986
Fair Business Practices and Product Responsibility	ER_11	Financial term	3.6495	.96698	465
		Non-financial Term	3.6238	1.07082	521
		Total	3.6359	1.02273	986
Rural Infrastructure	ER_12	Financial term	3.5763	1.10010	465
		Non-financial Term	3.6008	1.11542	521
		Total	3.5892	1.10772	986
Agro-based Livelihoods	ER_13	Financial term	2.9011	1.30932	465
		Non-financial Term	2.5777	1.27785	521
		Total	2.7302	1.30218	986

<b>b- Multivariate Tests<sup>a</sup></b>							
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.957	1681.577 <sup>b</sup>	13.000	972.000	.000	.957
	Wilks' Lambda	.043	1681.577 <sup>b</sup>	13.000	972.000	.000	.957
	Hotelling's Trace	22.490	1681.577 <sup>b</sup>	13.000	972.000	.000	.957
	Roy's Largest Root	22.490	1681.577 <sup>b</sup>	13.000	972.000	.000	.957
Fin_nonFin	Pillai's Trace	.062	4.950 <sup>b</sup>	13.000	972.000	.000	.062
	Wilks' Lambda	.938	4.950 <sup>b</sup>	13.000	972.000	.000	.062
	Hotelling's Trace	.066	4.950 <sup>b</sup>	13.000	972.000	.000	.062
	Roy's Largest Root	.066	4.950 <sup>b</sup>	13.000	972.000	.000	.062

a. Design: Intercept + Fin nonFin

b. Exact statistic

<b>c- Levene's Test of Equality of Error Variances<sup>a</sup></b>				
	F	df1	df2	Sig.
ER_1	3.368	1	984	.067
ER_2	2.220	1	984	.137
ER_3	4.114	1	984	.043
ER_4	2.897	1	984	.089
ER_5	6.423	1	984	.011
ER_6	2.401	1	984	.122
ER_7	6.373	1	984	.012
ER_8	.422	1	984	.516
ER_9	4.321	1	984	.038
ER_10	.573	1	984	.449
ER_11	1.328	1	984	.249
ER_12	.222	1	984	.637
ER_13	.000	1	984	.993

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Fin\_nonFin



d- Tests of Between-Subjects Effects							
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	ER_1	.114 <sup>a</sup>	1	.114	.093	.761	.000
	ER_2	.435 <sup>b</sup>	1	.435	.317	.573	.000
	ER_3	3.128 <sup>c</sup>	1	3.128	2.815	.094	.003
	ER_4	15.770 <sup>d</sup>	1	15.770	12.483	.000	.013
	ER_5	3.620 <sup>e</sup>	1	3.620	2.918	.088	.003
	ER_6	7.327 <sup>f</sup>	1	7.327	5.495	.019	.006
	ER_7	34.323 <sup>g</sup>	1	34.323	25.659	.000	.025
	ER_8	4.532 <sup>h</sup>	1	4.532	3.968	.047	.004
	ER_9	.483 <sup>i</sup>	1	.483	.341	.560	.000
	ER_10	.780 <sup>j</sup>	1	.780	.561	.454	.001
	ER_11	.162 <sup>k</sup>	1	.162	.155	.694	.000
	ER_12	.147 <sup>l</sup>	1	.147	.119	.730	.000
	ER_13	25.688 <sup>m</sup>	1	25.688	15.370	.000	.015
Intercept	ER_1	14272.312	1	14272.312	11637.359	.000	.922
	ER_2	14252.747	1	14252.747	10390.831	.000	.913
	ER_3	12333.250	1	12333.250	11100.076	.000	.919
	ER_4	10255.677	1	10255.677	8117.801	.000	.892
	ER_5	11058.420	1	11058.420	8912.210	.000	.901
	ER_6	9833.424	1	9833.424	7375.117	.000	.882
	ER_7	10296.749	1	10296.749	7697.671	.000	.887
	ER_8	12157.063	1	12157.063	10644.763	.000	.915
	ER_9	12146.122	1	12146.122	8562.567	.000	.897
	ER_10	8405.879	1	8405.879	6049.154	.000	.860
	ER_11	12997.874	1	12997.874	12415.852	.000	.927
	ER_12	12656.487	1	12656.487	10305.328	.000	.913
	ER_13	7375.412	1	7375.412	4413.001	.000	.818
Fin_nonFin	ER_1	.114	1	.114	.093	.761	.000
	ER_2	.435	1	.435	.317	.573	.000
	ER_3	3.128	1	3.128	2.815	.094	.003
	ER_4	15.770	1	15.770	12.483	.000	.013
	ER_5	3.620	1	3.620	2.918	.088	.003
	ER_6	7.327	1	7.327	5.495	.019	.006
	ER_7	34.323	1	34.323	25.659	.000	.025
	ER_8	4.532	1	4.532	3.968	.047	.004
	ER_9	.483	1	.483	.341	.560	.000
	ER_10	.780	1	.780	.561	.454	.001
	ER_11	.162	1	.162	.155	.694	.000
	ER_12	.147	1	.147	.119	.730	.000
	ER_13	25.688	1	25.688	15.370	.000	.015
Error	ER_1	1206.799	984	1.226			
	ER_2	1349.719	984	1.372			
	ER_3	1093.318	984	1.111			
	ER_4	1243.143	984	1.263			
	ER_5	1220.964	984	1.241			
	ER_6	1311.991	984	1.333			
	ER_7	1316.242	984	1.338			
	ER_8	1123.797	984	1.142			
	ER_9	1395.818	984	1.419			
	ER_10	1367.362	984	1.390			
	ER_11	1030.127	984	1.047			
	ER_12	1208.499	984	1.228			
	ER_13	1644.551	984	1.671			
Total	ER_1	15530.000	986				
	ER_2	15658.000	986				
	ER_3	13492.000	986				
	ER_4	11502.000	986				
	ER_5	12296.000	986				
	ER_6	11154.000	986				
	ER_7	11613.000	986				
	ER_8	13298.000	986				
	ER_9	13573.000	986				
	ER_10	9792.000	986				
	ER_11	14065.000	986				
	ER_12	13911.000	986				
	ER_13	9020.000	986				
Corrected Total	ER_1	1206.913	985				
	ER_2	1350.154	985				
	ER_3	1096.446	985				
	ER_4	1258.913	985				
	ER_5	1224.584	985				
	ER_6	1319.318	985				
	ER_7	1350.565	985				
	ER_8	1128.329	985				
	ER_9	1396.301	985				
	ER_10	1368.142	985				
	ER_11	1030.289	985				
	ER_12	1208.646	985				
	ER_13	1670.239	985				

a. R Squared = .000 (Adjusted R Squared = -.001)

b. R Squared = .000 (Adjusted R Squared = -.001)

c. R Squared = .003 (Adjusted R Squared = .002)

d. R Squared = .013 (Adjusted R Squared = .012)

e. R Squared = .003 (Adjusted R Squared = .002)

f. R Squared = .006 (Adjusted R Squared = .005)

g. R Squared = .025 (Adjusted R Squared = .024)

h. R Squared = .004 (Adjusted R Squared = .003)

i. R Squared = .000 (Adjusted R Squared = -.001)

j. R Squared = .001 (Adjusted R Squared = .000)

k. R Squared = .000 (Adjusted R Squared = -.001)

l. R Squared = .000 (Adjusted R Squared = -.001)

m. R Squared = .015 (Adjusted R Squared = .014)

## 8. Conclusion

In this research, the statistics for the sustainable reporting of the Ambuja cement are given, although the JK cement does not financially reveal the sustainable products, according to only 2 companies out of 5 listed. The Ambuja cement and JK cement offered specifics of their sustainability objects. The Ambuja cement has taken the KPI Sustainable Report format, while JK Cements given the Environment Clearance and AAQR Enforcement Report only. The article has also shown that theoretical and practical sustainability accounting has some of the characteristics of the traditional accounting model, but for the practice, more studies are necessary. The multivariate and univariate output have shown that the perception is not different for disclosing of sustainable reporting of selected 13 factors among the companies who are providing financial and non-financial sustainable reports (Khan et al., 2014). Both groups of respondents have shown a positive attitude towards financial disclosure of sustainable items and their accounting treatments (Alzoubi et al., 2020; Nangoy et al., 2020). The study has shown that firms should follow the best standards of environmental sustainability for strengthening its activities and documentation on sustainable growth.

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