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### A comprehensive study of voluntary disclosure in Indian cement industry

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### Abstract

This study investigates the voluntary disclosure practices of five major cement industry companies in India from 2020 to 2023. The research analyses information from annual reports and other public sources, focusing on financial, environmental, social, and governance-related data. By employing content analysis with binary coding, the study quantifies the extent of disclosure in different areas. Results reveal substantial variations in voluntary disclosure among the companies, particularly in product management, ESG reporting, and governance. The findings suggest opportunities for companies to enhance transparency and accountability through improved voluntary disclosure practices.

**Keywords:** Voluntary disclosure, corporate transparency, content analysis, cement industry

### 1. Introduction

Financial reporting is a vital process for organizations, offering a comprehensive view of their financial health, performance, and future strategies. It involves gathering, analysing, and presenting financial data to key stakeholders like shareholders, management, regulatory bodies, and investors. Essential components include income statements, balance sheets, cash flow statements, notes to financial statements, management discussion and analysis (MD&A), and auditor's reports. These reports are crucial for decision-making, transparency, and accountability in the financial sector. They serve various purposes, such as building investor trust, ensuring compliance with regulations, aiding internal decisions, enhancing stakeholder accountability, and facilitating risk management. Technology has made financial reporting more efficient and accessible through software and automated systems. It forms the foundation of informed decision-making, transparency, and accountability, bridging the gap between organizations and their stakeholders.

### 2. Literature Review

### 2.1 Voluntary Discloser

Research Voluntary disclosure, the practice where companies provide additional financial information beyond regulatory requirements, is a crucial factor in shaping stakeholder perceptions and enhancing the quality of financial reporting. Scholars such as Barth (2006) and Healy & Palepu (2001) highlight the importance of factors like understandability, relevance, reliability, comparability, and consistency in evaluating financial reporting quality. Byrd, Johnson, and Porter (1998) note that firms often use voluntary disclosure to manage stakeholder perceptions, especially in response to criticism or shareholder proposals. El-Gazzar *et al.* (2006) [1] find that firms with effective internal controls are more likely to issue Responsibility Management Reports (RMRs), potentially reducing financial restatements and SEC enforcement actions. Chen *et al.* (2016) [2] link the credibility of Corporate Social Responsibility (CSR) reporting to audit commitment and fees, indicating a positive association between audit fees and the likelihood of issuing CSR reports with external assurance. Zamil *et al.* (2021) [3] emphasize company-specific drivers of disclosure, including leverage, profitability, size, and industry profile, which are influenced by culture and government regulations.

Boesso and Kumar (2007) [4] find that stakeholder engagement, the significance of intangible assets, and market complexity influence disclosure practices. Gunawan and Lina (2015) [5] demonstrate that both mandatory and voluntary disclosures affect stock trading volume in Indonesian manufacturing companies. Nurunnabi and Hossain (2012) [6] find that large audit firms and non-family ownership drive voluntary internet financial reporting (IFR) in Bangladesh. Charumathi and Ramesh (2015) [7] identify leverage, size, and institutional ownership as predictors of voluntary disclosures in NSE-listed non-financial companies. Bonsón Ponte and Escobar Rodríguez (2002) [9] observe that European companies use the Internet for comprehensive voluntary disclosures. Suharsono et al. (2020) [10] show that voluntary disclosure positively impacts financial reporting quality in Indonesian manufacturing companies. These studies collectively highlight the need for further research on internal audit characteristics, audit fee indicators, and the influence of culture and government regulations on disclosure practices.

### 2.2 Reporting Quality

The reviewed literature provides a comprehensive analysis of the complexities and interdependencies within financial reporting and disclosure practices, offering valuable insights into their implications for economic understanding, investment decisions, and firm performance. Ball, Jayaraman, and Shivakumar (2012) [12] underscore the complementary nature of audited financial reporting and private information disclosure, emphasizing their importance for economic understanding and decision-making. They caution against solely relying on short-term market reactions and advocate for optimal financial reporting that focuses on independently verifiable, backward-looking information.

Mohammadi and Nezhad (2015) [11] emphasize the significance of voluntary disclosure and market transparency in meeting investors' informational needs, noting that incomplete information breeds uncertainty among stakeholders, leading to higher demands for compensation and a greater cost of capital for companies.

Lemma, Shabestari, Freedman, and Mlilo (2020) [13] investigate the influence of corporate carbon risk exposure on financial reporting quality, finding that firms with higher carbon risk exposure tend to have lower-quality financial statements, with voluntary carbon disclosure playing a mediating role.

Bagnoli and Watts (2007) [14] delve into the dynamics between mandatory and voluntary disclosures, revealing that the content of financial reports significantly influences the value and probability of voluntary disclosures. They suggest that managers strategically disclose private information based on the quality of financial reports, impacting firm value and disclosure regulations.

Oluwagbemiga (2014) [15] assesses how voluntary disclosure affects financial statement quality, investor decisions, and the performance of listed companies in Nigeria, finding that voluntary disclosure positively impacts company performance and simplifies investor decision-making, underscoring the importance of transparency in the Nigerian financial landscape.

Guay, Samuels, and Taylor (2016) [16] explore the relationship between financial statement complexity and managers' use of voluntary disclosure, finding that increased complexity leads to greater voluntary disclosure as managers seek to mitigate uncertainty caused by complex statements. Together, these studies highlight the intricate and multifaceted nature of financial reporting and disclosure practices, emphasizing the importance of transparency, credibility, and timely information for researchers, policymakers, and practitioners navigating the complexities of financial reporting and disclosure in an evolving financial landscape.

## 2.3. Voluntary Disclosure Practices in Various Industries: A Review

Voluntary disclosure practices exhibit significant variation across industries and regions, reflecting a complex interplay of factors that shape firms' decisions to disclose information beyond regulatory requirements. Kasznik's (1996) study on software companies suggests that aggressive revenue recognition practices aimed at conveying information, rather than solely driven by earnings management, highlight the nuanced motivations behind disclosure choices. Similarly, Depoers (2000) [18] found that firm size and foreign activity significantly influenced disclosure practices among French listed companies, indicating a strategic approach to disclosure.

Yuen *et al.* (2009) <sup>[17]</sup> focused on ownership features and corporate governance mechanisms in Chinese firms, revealing significant influences on voluntary disclosure practices. These findings align with Hossain *et al.*'s (1995) <sup>[22]</sup> study on New Zealand firms, which noted the impact of firm characteristics such as size, foreign listing status, and leverage on the extent of voluntary disclosure. Percy's (2000) analysis of Australian firms further underscored the role of specific factors, such as research intensity and R&D financing arrangements, in shaping disclosure choices.

Rouf's (2011) study on Bangladeshi companies highlighted the positive relationship between board characteristics and voluntary disclosure, emphasizing the importance of governance structures. Boateng *et al.* (2022) <sup>[29]</sup> also emphasized the significance of corporate governance in Ghanaian firms, indicating a persistent need for improvement in disclosure practices. These studies collectively underscore the multifaceted nature of voluntary disclosure, influenced by industry-specific dynamics and regulatory environments, highlighting the importance of considering a variety of factors in understanding firms' disclosure decisions.

### 3. Research Methodology

This study on voluntary disclosure in the Indian cement industry aims to achieve several objectives while considering the scope, research gap, and other relevant aspects. The primary objectives include analyzing the extent of voluntary disclosure by cement companies, determining trends in disclosure over time, categorizing and analyzing types of voluntarily disclosed information, studying the influence of company aspects on disclosure, and identifying common and uncommon disclosure practices.

For this research study, data was collected over a three-year period from 2020 to 2023, focusing on five cement companies. The selection criteria for these companies included market capitalization, which reflects the total value of a company's outstanding shares. Data was primarily sourced from annual reports, with additional information gathered from website disclosures, business responsibility reporting, corporate citizenship reporting, and sustainability reports where available. This comprehensive approach aimed to assess the disclosure practices of the selected companies across various industries.

Content analysis using binary coding (0s and 1s) is a prevalent method for measuring voluntary disclosure in research. By transforming textual data into numerical values, where '1' indicates the presence of specific information and '0' indicates its absence, researchers can quantitatively analyze disclosure practices. This approach enables comparisons across companies, industries, or time periods, aiding in identifying trends and correlations. Researchers use predefined criteria to ensure consistency and reliability in coding. Studies utilizing this method provide valuable

insights into corporate communication strategies, transparency, and their impact on stakeholders and the market, contributing to a broader understanding of voluntary disclosure practices.

The scope of the research encompasses a thorough examination of voluntary disclosure practices in India, focusing on financial, environmental, social, and governance-related data. Data collection will involve annual reports, websites, and other public sources, with a quantitative approach using disclosure indices and content analysis. A longitudinal study design will enable the analysis of disclosure trends over time, supplemented by statistical methods like trend analysis and regression analysis.

The research methodology also addresses the identified research gap, which pertains to the comparative analysis of voluntary disclosure practices across the banking industry. This gap will be addressed by analyzing how the level and types of disclosure vary across industries and the reasons behind these variations.

From the above Literature review, researcher develop following hypothesis.

### 3. Data Analysis

**Table 1:** Content analysis of cement industry

Particulars	ACC	Ambuja	Ultratech	Shree	JK Cement	Total	Average of Industry	Actual Disclosure in Praposationate Framework	Prapotionate Disclosure in Percentage of Total Framework
List of Voluntary Reporting Variables considered in research work									
General aspects of Firm:									
Organizational Structure (Including Subsidiary also) (Including Plant Location wise)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Corporate Mission, Vision and Objectives	0.50	0.33	0.00	0.50	1.00	2.33	0.78		
3. Description of Major Goals	1.00	0.83	1.00	0.67	1.00	4.50	1.50		
4. Outlook of Industry or Important aspects of Industry	1.00	0.83	1.00	0.67	0.83	4.33	1.44		
5. Competitive Environment (Barrier of Industry)	0.00	0.17	0.50	0.67	0.67	2.00	0.67		
6. Market share of selected Product (Showing 3-5 Years Market Share in a row to compare)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7. Merger and Acquisition during last 3 Years	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8. Total Assets Under Management (Including Assets of Holding company and Subsidiary Company)	1.00	1.00	1.00	1.00	1.00	5.00	1.67		
9. Listing Age of the firm	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10. Average Interest Rate on Firm's Outstanding	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total Disclosure of General Aspects of Cement Industry	3.50	3.17	3.50	10.17	3.39	17.23	3.45	5.84	16.95
Ownership Structure									
1. Ownership Concentration	1.00	1.00	1.00	0.83	0.00	3.83	1.28		
2. Government Ownership	0.33	0.00	1.00	0.00	0.00	1.33	0.44		
3. Foreign Ownership	1.00	1.00	1.00	0.00	1.00	4.00	1.33		
4. Institutional Ownership	1.00	1.00	1.00	0.50	1.00	4.50	1.50		
5. Family Ownership	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6. Number of Shares in total	1.00	1.00	1.00	1.00	1.00	5.00	1.67		

(Shareholding Pattern is different)									
7. Percentage of voting shares owned									
by Management such as Officers,									
Directors and other defined	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
individuals at year end.									
8. Percentage of Voting shares owned									
by Institutional Owner	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
9. Percentage of Voting shares by									
Government	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10. Percentage of Voting shares									
owned by Family Members of	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Promoters or Board									
Total Disclosure of Ownership									
Structure of Industry	4.33	4.00	5.00	13.33	4.44	22.60	4.52	38.30	16.95
Corporate Governance:									
1. Board's Composition in Percentage		0.00	0.00	0.00			0.00		
of Total Strength	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2. Age of Board (Collectively)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3. Family Director	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
4. Institutional Director	1.00	1.00	1.00	0.00	0.00	3.00	1.00		
5. Ethnic Diversity	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
•	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6. Percentage of Independent to the total Audit Committee	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7. Training to Brand	0.00	0.00	0.00	0.22	0.00	0.22	0.11		
	0.00		0.00	0.33		0.33	0.11		
8. Supervisory Board (if it is )	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
9. Risk Committee	1.00	0.00	1.00	1.00	1.00	4.00	1.33		
10. Audit Details	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1. External Auditor's Type	0.00	1.00	1.00	0.00	0.00	3.00	1.00		
2. External Audit Fees	1.00	1.00	1.00	1.00	1.00	2.50	0.83		
3. Internal Auditor's Function	0.50	1.00	1.00	0.50	1.00	0.00	0.00		
4. Internal Auditor Characteristics	0.00	0.00	0.00	0.00	0.33	12.50	4.17		
Total Disclosure of Corporate	2.50	4.00	5.00	12.50	4.17	21.10	1.21	25.01	22.72
Governanace	3.50	4.00	5.00	12.50	4.17	21.19	4.24	35.91	23.73
Management's Responsibility	0.00	0.00	0.00	0.00	0.00				
Management's Responsibility  1. Quantifying forecasting of Profit						2.00	1.00		
Management's Responsibility  1. Quantifying forecasting of Profit and Cash flow of the firm	0.00	0.00	0.00	0.00	0.00	3.00	1.00		
Quantifying forecasting of Profit						3.00	1.00		
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
Quantifying forecasting of Profit and Cash flow of the firm	0.00	0.00	0.00	0.00	0.00			2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility	0.00 1.00 1.00	0.00	0.00	0.00 1.00 1.00	0.00	0.00	0.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement	0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00	0.00 0.83 0.83	0.00	0.00 0.34 0.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information	0.00 1.00 1.00	0.00 1.00 1.00	0.00 1.00 1.00	0.00 1.00 1.00	0.00 0.83 0.83	0.00	0.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     1. Value Added Statement     2. Profitability as per Value Added	0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00	0.00 1.00 1.00 0.00	0.00 0.83 0.83 0.00	0.00 1.69 0.00 2.50	0.00 0.34 0.00 0.83	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     1. Value Added Statement     2. Profitability as per Value Added Statement	0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00	0.00 0.83 0.83	0.00	0.00 0.34 0.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement     Profitability as per Value Added Statement     CSR Report with evidence of	0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00	0.00 1.00 1.00 0.00	0.00 0.83 0.83 0.00	0.00 1.69 0.00 2.50	0.00 0.34 0.00 0.83	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement     Statement     CSR Report with evidence of actual beneficiaries     4. Environment Report	0.00 1.00 1.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00	0.00 1.00 1.00 0.00 0.00 1.00	0.00 1.00 1.00 0.00 0.00 0.67	0.00 0.83 0.83 0.00 0.00 1.00	0.00 1.69 0.00 2.50 3.00	0.00 0.34 0.00 0.83 1.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement     Rose Report with evidence of actual beneficiaries     A. Environment Report     Summar Resource Report	0.00 1.00 1.00 0.00 0.00 0.50 1.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00	0.00 1.00 1.00 0.00 0.00 0.67 0.50 1.00	0.00 0.83 0.83 0.00 0.00 1.00 1.00	0.00 1.69 0.00 2.50 3.00 2.00 0.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement     Statement     CSR Report with evidence of actual beneficiaries     4. Environment Report	0.00 1.00 1.00 0.00 0.00 0.50 1.00	0.00 1.00 1.00 0.00 0.00 1.00	0.00 1.00 1.00 0.00 0.00 1.00	0.00 1.00 1.00 0.00 0.00 0.67 0.50	0.00 0.83 0.83 0.00 0.00 1.00	0.00 1.69 0.00 2.50 3.00 2.00	0.00 0.34 0.00 0.83 1.00 0.67	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement     Service of Management's responsibility     Financial Information     Nalue Added Statement     Service Added Statement	0.00 1.00 1.00 0.00 0.00 0.50 1.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00	0.00 1.00 1.00 0.00 0.00 0.67 0.50 1.00	0.00 0.83 0.83 0.00 0.00 1.00 1.00	0.00 1.69 0.00 2.50 3.00 2.00 0.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement     Service of Management's responsibility     Financial Information     Service Added Statement     Service	0.00 1.00 1.00 0.00 0.00 0.50 1.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00	0.00 1.00 1.00 0.00 0.00 0.67 0.50 1.00	0.00 0.83 0.83 0.00 0.00 1.00 1.00	0.00 1.69 0.00 2.50 3.00 2.00 0.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement     Service of Management's responsibility     Financial Information     Nalue Added Statement     Service Added Statement     Aging of Receivables and Ageing	0.00 1.00 1.00 0.00 0.50 1.00 1.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00	0.00 1.00 1.00 0.00 0.00 0.67 0.50 1.00 0.00	0.00 0.83 0.83 0.00 0.00 1.00 1.00 1.00 0.00	0.00 1.69 0.00 2.50 3.00 2.00 0.00 0.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00 0.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement     Statement     CSR Report with evidence of actual beneficiaries     A. Environment Report     S. Human Resource Report     Ratios based on Cash flow statement     Aging of Receivables and Ageing of Stock of Finished Products and	0.00 1.00 1.00 0.00 0.00 0.50 1.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.00	0.00 1.00 1.00 0.00 0.67 0.50 1.00 0.50	0.00 0.83 0.83 0.00 0.00 1.00 1.00 0.00	0.00 1.69 0.00 2.50 3.00 2.00 0.00 0.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00 0.00	2.87	3.39
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Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement     Statement     CSR Report with evidence of actual beneficiaries     A. Environment Report     S. Human Resource Report     Ratios based on Cash flow statement     Aging of Receivables and Ageing of Stock of Finished Products and Raw Materials     Average Production Cycle time in	0.00 1.00 1.00 0.00 0.00 0.50 1.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.00	0.00 1.00 1.00 0.00 0.67 0.50 1.00 0.50	0.00 0.83 0.83 0.00 0.00 1.00 1.00 0.00	0.00 1.69 0.00 2.50 3.00 2.00 0.00 0.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00 0.00	2.87	3.39
1. Quantifying forecasting of Profit and Cash flow of the firm  2. Risk Management's discussion  Total Disclosure of Management's responsibility  Financial Information  1. Value Added Statement  2. Profitability as per Value Added Statement  3. CSR Report with evidence of actual beneficiaries  4. Environment Report  5. Human Resource Report  6. Ratios based on Cash flow statement  7. Aging of Receivables and Ageing of Stock of Finished Products and Raw Materials  8. Average Production Cycle time in Days.	0.00 1.00 1.00 0.00 0.50 1.00 1.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.00	0.00 1.00 1.00 0.00 0.67 0.50 1.00 0.50 0.00	0.00 0.83 0.83 0.00 0.00 1.00 1.00 0.00 1.00	0.00 1.69 0.00 2.50 3.00 2.00 0.00 0.00 0.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00 0.00 0.00	2.87	3.39
Quantifying forecasting of Profit and Cash flow of the firm     Risk Management's discussion     Total Disclosure of Management's responsibility     Financial Information     Nalue Added Statement     Service of Management's responsibility     Financial Information     Nalue Added Statement     Service A	0.00 1.00 1.00 0.00 0.50 1.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 0.67 0.50 1.00 0.00 0.50 0.00	0.00 0.83 0.83 0.00 0.00 1.00 1.00 0.00 1.00 0.00	0.00 1.69 0.00 2.50 3.00 2.00 0.00 0.00 0.50 0.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00 0.00 0.00	2.87	3.39
1. Quantifying forecasting of Profit and Cash flow of the firm  2. Risk Management's discussion  Total Disclosure of Management's responsibility  Financial Information  1. Value Added Statement  2. Profitability as per Value Added Statement  3. CSR Report with evidence of actual beneficiaries  4. Environment Report  5. Human Resource Report  6. Ratios based on Cash flow statement  7. Aging of Receivables and Ageing of Stock of Finished Products and Raw Materials  8. Average Production Cycle time in Days.  9. Effect of Inflation on Profits  10. Inflation Adjusted Statement	0.00 1.00 1.00 0.00 0.50 1.00 0.00 0.00 0.00 0.50 0.00	0.00 1.00 1.00 0.00 0.00 1.00 0.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 0.67 0.50 1.00 0.50 0.00 0.00	0.00 0.83 0.83 0.00 0.00 1.00 1.00 1.00 0.00 0.00 0.00	0.00 1.69 0.00 2.50 3.00 2.00 0.00 0.00 0.50 0.00 3.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00 0.00 0.00 0.17 0.00 1.00	2.87	3.39
1. Quantifying forecasting of Profit and Cash flow of the firm  2. Risk Management's discussion  Total Disclosure of Management's responsibility  Financial Information  1. Value Added Statement  2. Profitability as per Value Added Statement  3. CSR Report with evidence of actual beneficiaries  4. Environment Report  5. Human Resource Report  6. Ratios based on Cash flow statement  7. Aging of Receivables and Ageing of Stock of Finished Products and Raw Materials  8. Average Production Cycle time in Days.  9. Effect of Inflation on Profits  10. Inflation Adjusted Statement  11. Dividend Payout policy  12. Stock Market Information	0.00 1.00 1.00 0.00 0.50 1.00 0.00 0.00 0.00 0.50 0.00 1.00 1.00	0.00 1.00 0.00 0.00 1.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.00 0.00 0.00 0.00 1.00 1.00	0.00 1.00 1.00 0.00 0.00 0.67 0.50 1.00 0.50 0.00 0.00 0.00 0.50	0.00 0.83 0.83 0.00 0.00 1.00 1.00 1.00 0.00 0.00 0.0	0.00 1.69 0.00 2.50 3.00 2.00 0.00 0.00 0.50 0.00 3.00 3.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00 0.00 0.17 0.00 1.00 1.00	2.87	3.39
1. Quantifying forecasting of Profit and Cash flow of the firm  2. Risk Management's discussion  Total Disclosure of Management's responsibility  Financial Information  1. Value Added Statement  2. Profitability as per Value Added Statement  3. CSR Report with evidence of actual beneficiaries  4. Environment Report  5. Human Resource Report  6. Ratios based on Cash flow statement  7. Aging of Receivables and Ageing of Stock of Finished Products and Raw Materials  8. Average Production Cycle time in Days.  9. Effect of Inflation on Profits  10. Inflation Adjusted Statement  11. Dividend Payout policy  12. Stock Market Information  13. Notice from Stock Market if Any	0.00 1.00 1.00 0.00 0.50 1.00 0.00 0.00 0.50 0.00 1.00 1.00 0.00	0.00 1.00 0.00 0.00 1.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.00 0.00 0.00 1.00 0.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.67 0.50 1.00 0.50 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.83 0.83 0.00 0.00 1.00 1.00 0.00 0.00 0.00 0.0	0.00 1.69 0.00 2.50 3.00 0.00 0.00 0.00 0.50 0.00 3.00 3.00 0.00 0.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00 0.00 0.17 0.00 1.00 1.00 0.00	2.87	3.39
1. Quantifying forecasting of Profit and Cash flow of the firm  2. Risk Management's discussion  Total Disclosure of Management's responsibility  Financial Information  1. Value Added Statement  2. Profitability as per Value Added Statement  3. CSR Report with evidence of actual beneficiaries  4. Environment Report  5. Human Resource Report  6. Ratios based on Cash flow statement  7. Aging of Receivables and Ageing of Stock of Finished Products and Raw Materials  8. Average Production Cycle time in Days.  9. Effect of Inflation on Profits  10. Inflation Adjusted Statement  11. Dividend Payout policy  12. Stock Market Information	0.00 1.00 1.00 0.00 0.50 1.00 0.00 0.00 0.00 0.50 0.00 1.00 1.00	0.00 1.00 0.00 0.00 1.00 0.00 0.00 0.00	0.00 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.00 0.00 0.00 0.00 1.00 1.00	0.00 1.00 1.00 0.00 0.67 0.50 1.00 0.50 0.00 0.50 0.00 0.00 0.50	0.00 0.83 0.83 0.00 0.00 1.00 1.00 1.00 0.00 0.00 0.0	0.00 1.69 0.00 2.50 3.00 2.00 0.00 0.00 0.50 0.00 3.00 3.00 0.00	0.00 0.34 0.00 0.83 1.00 0.67 0.00 0.00 0.17 0.00 1.00 1.00 0.00	2.87	3.39

and Volume of share traded.									
Total Disclosure of Financial Informationa	6.00	5.00	6.00	17.00	5.67	9.60	1.92	3.26	25.42
Social and Environmental Aspects:									
Health and Safety Precautions taken by firm	1.00	1.00	1.00	1.00	1.00	3.00	1.00		
2. Energy Conservation	1.00	1.00	1.00	1.00	1.00	1.00	0.33		
3. Adoption of Environment technology	1.00	0.00	0.00	0.00	0.00	2.00	0.67		
4. Trailing for Environment Protection	1.00	0.00	1.00	1.00	0.00	1.00	0.33		
5. Student Employment	0.00	0.00	1.00	0.00	0.00	0.50	0.17		
6. Employee diversity in the organization	0.00	0.50	0.00	0.00	1.00	0.00	0.00		
7. Product Responsibility and Sagetly	0.00	0.00	0.00	0.50	0.00	8.83	2.94		
8. Sustainable Development of Goal	1.00	3.50	4.33	1.00	1.00	19.33	6.44		
Total Disclosure of Social and Environmental Aspects	5.00	6.00	8.33	19.33	6.44	10.92	13.56		
Overall Disclosure Index	23.33	20.67	24.83	19.83	23.67	112.33	66.91	113.41	13.56

The analysis of the data for the cement industry reveals interesting insights into the disclosure practices of major companies such as ACC, Ambuja, UltraTech, Shree Cement, and JK Cement. When examining the general aspects of the firms, Shree Cement stands out with a significantly higher disclosure score of 10.17, indicating a detailed disclosure of organizational structure, corporate mission, goals, industry outlook, and competitive environment. In contrast, Ambuja has the lowest score in this category at 3.17, suggesting a relatively lower level of detail in their disclosures.

Regarding ownership structure, Shree Cement again leads with a score of 13.33, reflecting detailed information on ownership concentration, government ownership, foreign ownership, and institutional ownership. UltraTech follows closely with a score of 5.00, indicating a strong disclosure practice in this area. Ambuja, on the other hand, has the lowest score in this category at 4.00, indicating a relatively weaker disclosure compared to other companies.

In terms of corporate governance disclosure, Shree Cement maintains a strong position with a score of 12.50, indicating detailed disclosures related to board composition, institutional directors, risk committees, and external audit. UltraTech also performs well in this category with a score of 5.00. However, Ambuja again lags behind with a score of 4.00, indicating a need for improvement in corporate governance disclosures.

When it comes to management's responsibility disclosures, all companies have similar scores, ranging from 0.83 to 1.00, suggesting a consistent level of disclosure across the board.

In financial information disclosure, Shree Cement leads with a score of 17.00, indicating detailed disclosures related to profit forecasting, risk management, CSR activities, and dividend payout policies. UltraTech also performs well in this category with a score of 6.00. Ambuja, however, has the lowest score in this category at 5.00, indicating a relatively lower level of disclosure compared to other companies.

In the social and environmental aspects category, Shree Cement again leads with a score of 19.33, indicating detailed disclosures related to health and safety, energy conservation, environment technology adoption, and sustainable development goals. UltraTech follows closely with a score of 8.33. Ambuja, however, has the lowest score in this category at 5.00, indicating a relatively weaker disclosure compared to other companies.

Overall, the analysis shows that while Shree Cement excels in disclosures related to general aspects, ownership structure, and social and environmental aspects, it lags behind in corporate governance and financial information. UltraTech performs consistently well across all categories, while Ambuja shows room for improvement, particularly in corporate governance, financial information, and social and environmental aspects disclosures.

#### **ANOVA Test**

 $H_0$ : There is no difference between the VD among the companies of Cement Industry.

 $H_1$ : There is difference between the VD among the companies of Cement Industry.

Summary Count Sum Average Variance Groups Column 1 3 70 23.3333333 1.0833333 Column 2 3 62 20.6666667 1.0833333 3 74.5 Column 3 24.8333333 0.3333333 Column 4 3 59.5 19.8333333 3.5833333 Column 5 3 71 1.0833333 23.6666667 **ANOVA** Source of Variation SS df MS P-value F crit Between Groups 53.9 4 13.475 9.4011628 0.0020246 3.4780497 Within Groups 14.333333 10 1.43333333 Total 68.233333 14

**Table 2:** ANOVA Single Factor

The provided data is for a single-factor ANOVA analysis, comparing the average scores of five different groups (Columns 1 to 5). The analysis aims to determine if there are statistically significant differences between the means of these groups. From the summary table, we can see that each group has three data points, and the total sum of scores and averages vary slightly between the groups. The variance within each group is also provided, which gives an indication of the spread of data within each group. The ANOVA table shows the sources of variation, degrees of freedom (df), sum of squares (SS), mean squares (MS), Fvalue, and p-value. The "Between Groups" row indicates the variation between the group means, while the "Within Groups" row indicates the variation within each group. The F-value of 9.4011628 suggests that there is a significant difference between the group means. This is further supported by the p-value of 0.0020246, which is less than the typical significance level of 0.05. Therefore, we reject the null hypothesis, which states that there are no significant differences between the group means. In conclusion, the data suggests that there are significant differences in the average scores between the five groups.

### 5. Findings

Based on the content analysis of the cement industry, the following findings can be derived:

- Organizational Structure: The disclosure of organizational structure varies among companies, with some providing detailed information and others providing none. This could indicate differing levels of transparency and communication practices within the industry.
- Corporate Mission, Vision, and Objectives: Most companies disclose their corporate mission, vision, and objectives, showing a commitment to transparency and stakeholder communication.
- Description of Major Goals: Companies generally provide a description of their major goals, indicating a focus on strategic planning and goal setting.
- Outlook of Industry or Important Aspects of Industry: Companies tend to provide information on the outlook of the industry or important aspects, suggesting an awareness of external factors affecting their business.
- Competitive Environment: There is a mixed level of

disclosure regarding the competitive environment, with some companies providing more information than others.

- Ownership Structure: Companies disclose information on ownership concentration, government ownership, foreign ownership, and institutional ownership, indicating a level of transparency in ownership structure.
- Corporate Governance: Disclosure of corporate governance practices varies, with some companies providing more detailed information on board composition, audit details, and risk management than others.
- Management's Responsibility: There is limited disclosure of management's responsibility, particularly in quantifying forecasting of profit and cash flow.
- **Financial Information:** Companies generally provide comprehensive financial information, including profitability, CSR reports, environment reports, and dividend payout policies.
- Social and Environmental Aspects: There is a strong emphasis on social and environmental aspects, with companies disclosing information on health and safety precautions, energy conservation, and sustainable development goals.

Overall, the cement industry shows a moderate level of disclosure across various aspects, with room for improvement in areas such as management's responsibility and corporate governance. The findings suggest that companies in the industry prioritize financial transparency and social/environmental responsibility, but there are opportunities to enhance disclosure in other areas to improve overall transparency and stakeholder communication.

The findings from the ANOVA test indicate that there is a significant difference between the means of the five groups (Columns 1 to 5). The F-value of 9.4011628 and the p-value of 0.0020246 suggest that this difference is statistically significant at the 0.05 significance level.

This means that at least one of the groups has a different mean score compared to the others. However, the ANOVA test does not tell us which specific groups are different from each other. For that, further post-hoc tests, such as Tukey's HSD, would be needed to determine the specific group differences.

### 6. Conclusion

The analysis of the cement industry's disclosure practices reveals a mixed landscape, with companies showing varying levels of transparency and communication across different aspects. Shree Cement emerges as a leader, demonstrating comprehensive disclosures in areas such as organizational structure, ownership, and social and environmental aspects. UltraTech also stands out for its strong disclosure practices. However, Ambuja lags behind, particularly in corporate governance, financial information, and social and environmental aspects disclosures, indicating areas for improvement. The ANOVA test confirms significant differences between the mean scores of the five groups, highlighting the distinct disclosure practices among companies. Overall, the cement industry demonstrates a moderate level of disclosure, emphasizing financial transparency and social/environmental responsibility. Enhancing disclosure practices, especially in areas of management's responsibility and corporate governance, can help companies build trust and improve their competitive position.

### 7. Managerial Implication

The analysis of the cement industry's disclosure practices carries several key managerial implications for companies in the sector. Firstly, understanding the varying levels of disclosure among competitors can help companies benchmark their own practices and identify areas for improvement. Companies with lower disclosure levels, such as Ambuja, can learn from leaders like Shree Cement and UltraTech to enhance their transparency and communication practices.

Secondly, focusing on areas of weakness, such as corporate governance, financial information, and social and environmental aspects disclosures, can help companies build trust with stakeholders. Improved disclosure in these areas can enhance reputation and stakeholder confidence, leading to potential competitive advantages.

Thirdly, the significant differences in disclosure practices among companies underscore the importance of tailoring disclosure strategies to meet stakeholder expectations. Understanding the specific information needs of investors, regulators, and other stakeholders can help companies prioritize their disclosure efforts and allocate resources effectively.

Lastly, the findings highlight the importance of continuous monitoring and evaluation of disclosure practices. Regular assessments can help companies track their progress, identify emerging trends, and adapt their disclosure strategies to meet evolving stakeholder demands. By adopting a proactive approach to disclosure, companies can enhance transparency, build trust, and ultimately, improve their overall competitiveness in the market.

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