

Simultaneous Measurement of Corporates' Sustainable Development and Financial Performance: Based on Selected Integrated Ratios on some Indian Companies

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Abstract

The ideas of sustainable development and corporate social responsibility (CSR) are being considered by corporations and nations to a considerable extent. Since the inception of Integrated Reporting (<IR>), it has achieved its basic objectives, and most companies are now taking initiatives to include <IR> in their annual reports.

To make <IR> and CSR more useful to stakeholders, the Integrated Ratio Guidelines were proposed by the Center for ESG Research (2017). These guidelines combine financial and sustainability-related performance into ratios known as Integrated Ratios (INTR). The present paper has been prepared based on such INTRs. Data from 16 companies in the cement, automobile, and oil industries have been analysed using their published sustainability and annual reports for the years 2021 to 2025.

The key financial metrics such as Return on Assets and Return on Equity, alongside environmental indicators like carbon emissions per sales amount earned and water efficiency etc. are being considered. Comparison is made through figures to industry averages as benchmark basis. The findings reveal that companies investing genuinely in sustainability—reducing emissions, supporting their workforce, and managing resources wisely—tend to perform better financially. This shows a strong link between responsible practices and shareholder value. For managers and investors, integrating sustainability and profitability provides a clearer picture of true performance, fostering responsible growth and long-term resilience.

Keywords: Sustainable development, Financial Performance, Integrated ratios

Introduction

In the contemporary business landscape, organizations are increasingly expected to demonstrate their commitment to sustainable development alongside achieving strong financial performance. The concept of sustainability encompasses environmental

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responsibility, social equity, and economic viability, which are collectively vital for long-term corporate success. Simultaneously, financial performance remains a fundamental indicator of a company's health, growth potential, and competitiveness in the market. Balancing these dual objectives presents a complex challenge for firms, especially within emerging economies like India, where rapid economic growth often raises concerns about environmental degradation and social impacts.

India is packed with companies across all sorts of industries, and they're all being pushed to weave sustainability into how they operate. Problem is, most tools for measuring performance only look at one side or the other. Financial metrics focus on profits and losses, but ignore the bigger sustainability picture. On the flip side, sustainability metrics don't always line up with financial results, so it's tough to see how one affects the other.

This article tries to bridge that gap. It lays out a way to measure both financial performance and sustainability at the same time, using integrated ratios (Integrated Ratios Guidelines, 2017) that bring everything together. By applying these ratios to Indian companies, the study digs into the connections—and sometimes the trade-offs—between going green and staying profitable. The idea is to give managers, investors, and policymakers a clearer view of how sustainable choices impact the bottom line, and how financial strength can drive better sustainability.

In the end, this research adds something more by going beyond the Integrated Reporting, to the conversation about sustainable business in fast-growing markets. It highlights why companies need tools that don't just measure money or mission, but both—so leaders can make smarter decisions and build value that lasts.

Literature Review

People are paying a lot more attention these days to how sustainability connects with financial performance. Investors, customers, and even employees want to see companies being responsible, not just profitable. In the early days, researchers mostly argued over whether being sustainable helped or hurt the bottom line. Some thought going green and focusing on good governance would cost too much; others saw a chance for a win-win.

Eccles, Ioannou, and Serafeim (2014) dug into this and found something interesting: when companies make sustainability a real part of their core strategy, they don't just feel good about themselves—they actually run better and make more money in the long run. Their research shows that firms with strong sustainability performance tend to beat their competitors in stock returns, profits, and even how they handle risk.

Orlitzky, Schmidt, and Rynes (2003) took it further with a meta-analysis, looking across tons of studies, and came up with a clear trend: companies that score high on

corporate social performance usually do well financially, too. But the story isn't the same everywhere. The industry, the country, and even how you measure these things matter a lot. Take manufacturing or energy, for example—sometimes the costs of sustainability show up before the financial benefits. But in service-focused sectors, the payoffs can come faster (Waddock & Graves, 1997).

The picture gets even more complex in places like India. Joshi and Rahman (2015) looked at Indian companies and found that while more firms talk about sustainability, the financial results are mixed. Local regulations, infrastructure, and the maturity of the market all play a part in how much sustainability actually pays off. Still, there's growing evidence that when companies get serious about sustainability, it helps their reputation, earns trust from stakeholders, and makes their operations run smoother—all things that eventually show up on the financial side (Kumar & Saini, 2019).

One big issue here is how you measure all this. Standard financial ratios—like return on assets or equity—don't really capture the bigger social or environmental impact. On the flip side, sustainability ratings like ESG scores often don't line up neatly with financial data. To bridge this gap, some researchers say we need integrated metrics that combine both, giving a fuller picture of performance.

Singh and Kaur (2018), for example, push for new composite ratios that blend financial and sustainability data. Their work with Indian companies shows that those with high sustainability scores tend to do better financially over time, hinting there's more than just coincidence at play. Hossain, Alam, and Islam (2020) agree, arguing that using multidimensional metrics gives a more accurate sense of a company's value and the risks it faces.

All this builds on Elkington's (1997) triple bottom line idea, which says companies should balance profits with people and the planet. Lozano (2015) takes it a step further, calling for practical tools to turn those triple bottom line principles into real, usable numbers. These tools can help everyone—from investors to managers—make smarter decisions by weighing financial and sustainability performance together.

Recent studies back up the benefits of these integrated metrics, especially in emerging markets. Hossain, Alam, and Islam (2020) found that Indian companies using such measures saw stronger engagement with stakeholders, lower risks, and more confidence from investors. Still, pulling this off isn't easy. It takes good data, standard ways of measuring things, and a commitment to being transparent. Without those, even the best metrics can fall flat.

In conclusion, although the positive relationship between sustainable development and financial performance is supported by a growing body of literature, there remains a significant research gap concerning the application of integrated ratios for simultaneous evaluation—particularly within the Indian corporate sector.

Objective of the Study

This study aims to address this gap by employing selected integrated ratios to analyse the performance of Indian companies, thereby providing deeper insights into how sustainability initiatives influence financial health and vice versa. Such an approach aligns with contemporary calls for more holistic, multidimensional performance assessment frameworks that can better inform corporate strategy and stakeholder engagement in emerging economies.

Research Methodology

This study adopts a quantitative and analytical research design to evaluate the relationship between sustainable development and financial performance of selected Indian companies across various industries. The analysis is based on secondary data obtained from published annual reports, integrated reports, and sustainability reports for the fiscal years 2021-22 to 2024-25.

The sample comprises 16 companies from different industries, selected based on their importance in the Indian market and availability of comprehensive reports for the specified years. The companies and industries included are Cement Companies, Automobiles and Oil Companies, mainly based on earnings. Data are collected from the official published reports of these companies, ensuring consistency and reliability. The reports for each fiscal year from 2021-22 to 2024-25 are analysed to avoid any Covid19 related issue.

Selected integrated ratios are computed as per the guidelines outlined in the *Integrated Ratio Guidelines (2017)*. These ratios are designed to measure both financial performance and sustainability performance, facilitating a holistic evaluation of each company's overall performance. The specific ratios include, but are not limited to:

- Financial ratios such as Return on Assets (ROA), Return on Equity (ROE), Profit Margin.
- Combined or integrated ratios derived from environmental and social performance indicators, such as carbon footprint per unit of revenue, water use efficiency ratios, employee efficiency ratios etc.

More specifically, the selected variables to evaluate the financial performance are **SALE**, **EBIDTA**, **ROA** and **ROE**. These ratios related to financial performance are basic and common and well accepted by different scholars to measure profitability of companies (Kraus & Litzenberger, 1973; Brealey, Myers, & Allen, 2011; Elham et al., 2014; Higgins, 2012; Fama & French, 1992; Penman, 2010).

The sustainability performance and INTRs (Integrated Ratios) related variables are **ENBEN**, **CoSALE**, **WcSALE**, **TEMERATE**, **TRAINHR**, **EnbeSALE**, **PATCO**,

WwSALE, **SALEEMP** and **EBDITEMP** (Ref.: IRG-CESGR: 2017). These sustainability performances related ratios are being considered on the basis of data availability from the published report, and easy to calculated within the limited time and scope. Other ratios related to working hours, training hours, energies consumed, audit, governance etc. are not taken here by considering their relative complexities of calculation.

The variables are INTRs are defined here in brief. The **ENBEN** measures the total employee benefit expenses in Crore of INR (Indian Rupees), reflecting the scale of labor costs, while **SALE** indicates the revenue generated from core operations, representing the company's market performance. **EBIDTA** captures operational profitability before interest, depreciation, and taxes, serving as a key indicator of core business efficiency. Environmental impact is assessed through **CoSALE**, the ratio of total carbon emissions (Scope 1 + Scope 2) to revenue, which reveals the carbon intensity per unit of revenue, and **WcSALE**, the water consumption per Crore of sales, highlighting water use efficiency. The workforce composition is analysed via **TEMERATE**, the ratio of non-permanent to permanent employees, and **TRAINHR**, the average training hours per permanent employee, indicating workforce flexibility and development efforts. Financial efficiency metrics include **ROA** and **ROE**, measuring returns on assets and shareholders' equity respectively, while **EnbeSALE** shows the proportion of revenue spent on employee benefits. Environmental efficiency is further examined through **PATCO**, profit earned per ton of CO₂ emitted, and **WwSALE**, water withdrawal per Crore of sales, reflecting how environmentally sustainable the company's operations are. Productivity measures such as **SALEEMP** (revenue per employee) and **EBDITEMP** (EBIDTA per employee) provide insights into workforce efficiency and contribution to overall profitability. Collectively, these variables facilitate a comprehensive analysis of how financial performance aligns with sustainability practices within the companies studied.

The paper is an initiative at the basic level for all the users. Scholars or companies may take this paper as pathfinder and research in more details with the help of other ratios.

However, the methodology provides a structured approach to achieving the present paper's objectives of evaluating the simultaneous impact of sustainability and financial performance using integrated ratios, descriptive statistics, correlations, and benchmarking for comparison across selected Indian companies in various industries.

Pearson correlation coefficients are computed to examine the strength and direction of relationships between financial ratios and sustainability ratios, providing insights into whether higher sustainability performance correlates with better financial outcomes.

To evaluate the relative performance of companies, a benchmarking approach is employed. This involves comparing individual company ratios against industry

averages or best practices identified within the sample. The benchmarking enables identification of high performers and laggards in both sustainability and financial metrics.

Data analysis is conducted using statistical software such as SPSS, MS Excel and JAMOVI.

Findings & Analysis

This part consists of interpretations of calculated values with the help of above-mentioned methodologies and variables. At first descriptive statistics are shown and interpreted and latter on correlations and benchmarking analysis are interpreted.

Considering the **Table 1** on the descriptive statistics, the variables display a wide range of values, indicating diverse performance levels across the dataset. The mean values suggest that, on average, companies have employee benefit expenses (**ENBEN**) of approximately ₹7,676 Crore, with a median of ₹3,308 Cr., highlighting some outliers with significantly higher expenses. The average water withdrawal (**WwSALE**) is 255,098 cubic meters, and the median is 82,142 cm, reflecting substantial variability in water usage efficiency. Revenue (**SALE**) averages around ₹8,654 Crore, with a median of ₹82,142 Cr., indicating a skewed distribution with some large companies. Profit-sustainability related ratios such as **EBDITEMP** and **PATCO** show means of 6.37 and 5.11 respectively, but with high standard deviations, suggesting uneven profitability across firms. Environmental-profit related ratios like **CoSALE** and **WcSALE** have mean values of 402 and 24.8, respectively, indicating typical emission and water consumption intensities, but with notable extremes. Workforce composition measures such as **TEMERATE** (average ratio of temporary to permanent employees) and **TRAINHR** (training hours per employee) reveal moderate variability. Overall, the dataset exhibits considerable dispersion, with maximum values significantly exceeding the averages, implying the presence of large-scale or high-performance outliers that influence the overall distribution.

TABLE 1

| | Mean | Median | Standard deviation | Minimum | Maximum |
|----------|--------|--------|--------------------|---------|---------|
| EMBEN | 7676 | 3308 | 10460 | 448 | 47767 |
| WwSALE | 188 | 135 | 169 | 9.54 | 574 |
| SALE | 255098 | 82142 | 301847 | 6011 | 960355 |
| EBDITEMP | 0.834 | 0.238 | 1.43 | -0.121 | 6.53 |
| SALEEMP | 6.37 | 1.82 | 8.54 | 0.54 | 36.3 |
| PATCO | 0.921 | 0.111 | 1.79 | -4.97 | 5.4 |
| EnbeSALE | 5.11 | 5.78 | 2.88 | 0.524 | 11.2 |
| ROE | 13.7 | 11.1 | 22.7 | -25.2 | 174 |

| | | | | | |
|----------|------|------|-------|--------|--------|
| ROA | 12.2 | 11.6 | 4.8 | -3.72 | 24.6 |
| CoSALE | 402 | 23 | 515 | 0.664 | 1368 |
| TRAINHR | 24.8 | 23.8 | 14.7 | 3.08 | 81.5 |
| TEMERATE | 1.97 | 1.95 | 1.19 | 0.0195 | 4.72 |
| WcSALE | 5977 | 177 | 22843 | 9.26 | 112168 |

From the **Table 2**, the correlation matrix provides valuable insights into the relationships between various aspects of company performance, environmental impact, and workforce characteristics. Notably, sales (SALE) are positive and significantly correlated (0.571 at $p < 0.001$) with employee benefit expenses (ENBEN), indicating that higher sales volumes are associated with increased employee-related costs. There is a significant negative relationship (-0.479 at $p < 0.001$) between carbon emission intensity (CoSALE) and water consumption per sales (WcSALE), suggesting that companies with higher carbon emissions tend to use less water relative to their sales, possibly reflecting efficiency strategies. The workforce composition, represented by TEMERATE (ratio of temporary to permanent employees), shows a negative correlation with return on equity (ROE) at -0.159, which is significant at the $p = 0.034$ level, implying that a higher proportion of temporary employees might be linked to lower financial performance. Training hours per employee (TRAINHR) are strongly positively correlated (0.807 at $p < 0.001$) with revenue per employee (SALEEMP) and profit per employee (EBITDEMP) (0.668 at $p < 0.001$), highlighting that investment in employee development is associated with higher productivity and profitability. Similarly, ROE is positively correlated with SALEEMP (0.537, $p < 0.001$) and EBITDEMP (0.499, $p < 0.001$), emphasizing that more efficient and profitable companies per employees tend to generate better returns for shareholders. Water withdrawal per sale unit (WwSALE) has a significant negative correlation with sales at -0.391 ($p < 0.001$), indicating that water-efficient companies tend to achieve higher sales levels. Additionally, profit per ton of CO₂ emitted (PATCO) is positively correlated with SALEEMP (0.470, $p < 0.001$) and EBITDEMP (0.530, $p < 0.001$), illustrating that environmentally efficient firms often outperform in employees' productivity and profitability metrics. Lastly, the strong positive correlation between SALEEMP and EBITDEMP at 0.516 ($p < 0.001$) underscores the close linkage between workforce productivity and earnings. Overall, these relationships highlight the interconnectedness of financial success, environmental sustainability, and workforce management, emphasizing that sustainable practices can go hand-in-hand with enhanced profitability.

TABLE 2

| Pearson's Correlation Matrix | | | | | | | | | | | | | |
|-------------------------------------|----------|--------------|-------------|---------------|---------------|-----------------|----------------|------------|------------|-----------------|--------------|----------------|-----------------|
| | | EMBEN | SALE | CoSALE | WcSALE | TEMERATE | TRAINHR | ROA | ROE | EnbeSALE | PATCO | SALEEMP | EBDITEMP |
| SALE | r | 0.571*** | — | | | | | | | | | | |
| | p | <.001 | — | | | | | | | | | | |
| CoSALE | r | -0.479*** | -0.580*** | — | | | | | | | | | |
| | p | <.001 | <.001 | — | | | | | | | | | |
| WcSALE | r | 0.185 | 0.315* | -0.187 | — | | | | | | | | |
| | p | 0.144 | 0.011 | 0.138 | — | | | | | | | | |
| TEMERATE | r | -0.300* | -0.013 | -0.11 | -0.426*** | — | | | | | | | |
| | p | 0.017 | 0.92 | 0.39 | <.001 | — | | | | | | | |
| TRAINHR | r | 0.453** | 0.099 | -0.480** | 0.024 | 0.22 | — | | | | | | |
| | p | 0.003 | 0.531 | 0.001 | 0.882 | 0.166 | — | | | | | | |
| ROA | r | 0.048 | -0.11 | -0.139 | 0.116 | -0.081 | 0.275 | — | | | | | |
| | p | 0.706 | 0.385 | 0.275 | 0.362 | 0.528 | 0.078 | — | | | | | |
| ROE | r | 0.107 | 0.145 | -0.201 | 0.537*** | -0.159 | -0.034 | 0.354** | — | | | | |
| | p | 0.401 | 0.254 | 0.111 | <.001 | 0.212 | 0.832 | 0.004 | — | | | | |
| EnbeSALE | r | 0.177 | -0.626*** | 0.195 | -0.237 | -0.23 | 0.327* | 0.086 | -0.129 | — | | | |
| | p | 0.162 | <.001 | 0.122 | 0.059 | 0.069 | 0.034 | 0.501 | 0.31 | — | | | |
| PATCO | r | 0.185 | -0.087 | -0.400** | 0.145 | -0.116 | 0.207 | 0.470*** | 0.530*** | 0.239 | — | | |
| | p | 0.144 | 0.494 | 0.001 | 0.253 | 0.367 | 0.189 | <.001 | <.001 | 0.057 | — | | |
| SALEEMP | r | 0.531*** | 0.807*** | -0.477*** | 0.516*** | -0.333** | 0.089 | -0.078 | 0.179 | -0.509*** | -0.097 | — | |
| | p | <.001 | <.001 | <.001 | <.001 | 0.008 | 0.576 | 0.542 | 0.158 | <.001 | 0.445 | — | |
| EBDITEMP | r | 0.560*** | 0.668*** | -0.339** | 0.499*** | -0.566*** | 0.025 | 0.002 | 0.198 | -0.297* | -0.013 | 0.923*** | — |
| | p | <.001 | <.001 | 0.006 | <.001 | <.001 | 0.878 | 0.987 | 0.118 | 0.017 | 0.921 | <.001 | — |
| WwSALE | r | -0.391** | -0.249* | 0.751*** | -0.229 | -0.021 | -0.581*** | -0.360** | -0.187 | -0.128 | -0.498*** | -0.193 | -0.136 |
| | p | 0.001 | 0.047 | <.001 | 0.069 | 0.871 | <.001 | 0.004 | 0.139 | 0.313 | <.001 | 0.126 | 0.283 |

Note. * p < .05, ** p < .01, *** p < .001
 r: Correlation Coefficient

The **Table 3** is to show benchmarking analysis. Here, the variables have been supplemented with the prefix "**BM**" to indicate the benchmarking variables, where each variable is compared against the industry average (benchmark, i.e. the mean value of year-company data in the sample of a particular industry) (Camp, 1989; Kincaid, 2002; Gordon & Natarajan, 2017; Fenton & Langfield, 2010). The variables such as BMTRAINHR, BMROA, BMROE, BMEnbeSALE, BMPATCO, BMSALEEMP, and BMEBDITEMP, value '1' is assigned if the calculated value exceeds the industry average, signalling above-average performance. Conversely, these variables are assigned a value of '0' if the calculated value falls below the industry average, indicating below-average performance. On the other hand, variables like BMCoSALE, BMWcSALE, BMWwSALE, and BMTEMERATE are assigned a value of '1' if their calculated values are less than the industry average, reflecting better efficiency or lower intensity relative to the industry. If these variables have values exceeding the industry average, they are allotted a value of '0', indicating less favorable performance in comparison to the industry benchmark. After allocating such values to each companies and variables, average values are being calculated and shown in Table 3.

TABLE 3.

| Industry wise Average Benchmarking Values based on the Total Company-Year Average Value as Benchmark | | | |
|--|-----------------|---------------------|----------------------|
| | Cement: Average | Automobile: Average | Oil Company: Average |
| BMCoSALE | 0.46 | 0.45 | 0.65 |
| BMWcSALE | 0.58 | 0.60 | 0.80 |
| BMTEMERATE | 0.50 | 0.55 | 0.40 |
| BMWwSALE | 0.46 | 0.55 | 0.65 |
| BMTRAINHR | 0.45 | 0.38 | 0.30 |
| BMROA | 0.42 | 0.45 | 0.50 |
| BMROE | 0.38 | 0.65 | 0.25 |
| BMEnbeSALE | 0.54 | 0.50 | 0.40 |
| BMPATCO | 0.50 | 0.60 | 0.10 |
| BMSALEEMP | 0.42 | 0.25 | 0.40 |
| BMEBDITEMP | 0.50 | 0.30 | 0.40 |

The **Table 3** presents industry-wide average benchmarking values for various financial and operational metrics across cement, automobile, and oil companies, with each industry serving as a benchmark for comparison. The values reveal that, on average, oil companies tend to have higher benchmarks for BMCoSALE, BMWcSALE and BMWwSALE, with values of 0.65, 0.80 and 0.65 respectively, indicating their generally larger scale or better performance in the areas of carbon and water intensities. In contrast, cement companies typically have lower benchmark values

across most metrics, such as a BMCoSALE of 0.46 and a BMWcSALE of 0.58, suggesting comparatively lower performance. Automobile companies sit in the middle, with a BMCoSALE of 0.45 and a BMWcSALE of 0.60, reflecting moderate performance levels.

Environmental and efficiency-related metrics also show notable differences among industries. For example, oil companies have a high BMWcSALE (0.80), indicating a strong emphasis on water intensity or consumption, while cement companies have a higher BMEnbeSALE (0.54), which suggests greater employee benefits expenses relative to industry standards. Regarding profitability, oil companies have a relatively low BMROE (0.25), indicating lower return on equity compared to other sectors, whereas automobile companies show higher BMROA (0.45) and BMROE (0.65), reflecting better asset and equity returns. Overall, these industry benchmarks highlight the varying operational scales, financial performances, and environmental considerations across cement, automobile, and oil sectors, providing a comparative framework for assessing individual company performance within each industry. In case of per employee revenue and profit contribution, the cement industry is in better position.

If the comparison is made within the cement industry, it can be seen that BMWcSALE and BMEnbeSALE values are above 0.50 and other values are below 0.50, which is indicating that there is much requirement to control carbon emission, water withdrawal and invest in employee training hours. In case of Automobile industry, except BMCoSALE, BMTRAINHR, BMROA, BMSALEEMP and BMEBDITEMP are below 0.50, which are indicating that carbon emission intensity, employee wise value additions are to be improved. However, on overall basic other areas are having better state.

Considering **Table 4**, which presents the correlation analysis among the benchmarked variables, we can interpret the nature of the relationships between these variables. The results reveal how the benchmarked variables are related across the sample companies.

For instance, if the correlation between BMCoSALE (Carbon Intensity w.r.t. Sales) and BMWcSALE (Water Consumption Intensity w.r.t. Sales) is positive, it indicates that companies tend to emphasize both carbon and water consumption intensities similarly. This suggests that within the sample, companies generally prioritize environmental factors in a consistent manner across these two metrics. Moreover, this positive correlation across the companies implies that the intra-industry benchmarking positions are aligned in the same direction across the three industries.

However, based on normative expectations, variables such as BMCoSALE and BMWcSALE (environmental intensity measures) and BMTRAINHR (employee training hours) should exhibit significant positive correlations with financial

performance indicators like BMROA (Return on Assets), BMROE (Return on Equity), and other profit or sales-related variables. This is because companies with better environmental performance and higher employee training levels are often hypothesized to perform better financially, indicating that efficient resource use and employee development contribute to profitability and revenue generation (Hart, 1995; Porter & van der Linde, 1995; Becker & Gerhart, 1996; Epstein & Roy, 2001; Bansal & Roth, 2000).

Now, the **Table 4** analysis shows several significant aspects with positive correlations:

- The correlation between BMCoSALE and BMWwSALE (Water-Sale Intensity) is 0.248, which is positive and significant, indicating a moderate relationship between carbon intensity and water withdrawal intensity.
- The correlation between BMWcSALE and BMWwSALE is 0.465, also positive and significant, suggesting a strong association between water consumption and withdrawal intensities.
- The correlation between BMTEMPERATE (Temporary Employee Rate) and BMEnbeSALE (Employee-benefit rate) is 0.437, while with BMSALEEMP (Sales per Employee) it is 0.512, and with BMEBDITEMP (Return per employee) it is 0.471. All these are positive and statistically significant, indicating that higher temporary employee rate causes more employee cost to the company, but is also provides better sales performance and profitability.
- Additionally, the correlation between BMPATCO (Profit after tax per unit of carbon emitted) and both BMROA and BMROE is positive and significant, implying that environmental initiatives may be linked to financial returns.
- The correlation between BMTRAINHR and BMWwSALE is also positive and significant, pointing to the beneficial relationship between employee training hours and water use/consumption efficiency.
- Furthermore, the correlations between BMWcSALE and BMCoSALE, as well as between BMTRAINHR and BMEBDITEMP, are positive and significant at the $p < 10\%$ level, reinforcing the observed associations.

Overall, these findings suggest that companies emphasizing environmental performance and employee development tend to also perform better financially, though it is important to recognize that there are several other multiple factors to influence these relationships.

TABLE 4

| Correlation Matrix on Benchmarked Variables | | | | | | | | | | | |
|--|----------|-----------------|-----------------|-------------------|------------------|--------------------------------------|--------------|------------------|---|------------------|-------------------|
| | | BMCoSALE | BMWcSALE | BMTEMERATE | BMTRAINHR | BMROA | BMROE | BMEbeSALE | BMPATCO | BMSALEEMP | BMEBDITEMP |
| BMWcSALE | r | 0.22 | — | | | | | | | | |
| | p | 0.081 | — | | | | | | | | |
| BMTEMERATE | r | -0.124 | -0.023 | — | | | | | | | |
| | p | 0.328 | 0.859 | — | | | | | | | |
| BMTRAINHR | r | 0.141 | -0.132 | -0.053 | — | | | | | | |
| | p | 0.314 | 0.345 | 0.704 | — | | | | | | |
| BMROA | r | 0.129 | -0.134 | -0.066 | 0.161 | — | | | | | |
| | p | 0.311 | 0.29 | 0.606 | 0.25 | — | | | | | |
| BMROE | r | 0.195 | -0.181 | -0.005 | -0.182 | 0.430*** | — | | | | |
| | p | 0.123 | 0.152 | 0.969 | 0.193 | <.001 | — | | | | |
| BMEbeSALE | r | 0.001 | -0.088 | 0.437*** | 0.182 | -0.191 | -0.132 | — | | | |
| | p | 0.994 | 0.487 | <.001 | 0.191 | 0.13 | 0.3 | — | | | |
| BMPATCO | r | 0.165 | -0.205 | 0.153 | -0.044 | 0.270* | 0.582*** | 0.09 | — | | |
| | p | 0.192 | 0.104 | 0.227 | 0.755 | 0.031 | <.001 | 0.482 | — | | |
| BMSALEEMP | r | 0.074 | -0.006 | 0.512*** | 0.025 | 0.169 | 0.02 | 0.382** | 0.044 | — | |
| | p | 0.559 | 0.96 | <.001 | 0.858 | 0.183 | 0.878 | 0.002 | 0.733 | — | |
| BMEBDITEMP | r | -0.026 | 0.063 | 0.471*** | 0.248 | 0.270* | 0.002 | 0.408*** | 0.093 | 0.773*** | — |
| | p | 0.839 | 0.622 | <.001 | 0.073 | 0.031 | 0.987 | <.001 | 0.464 | <.001 | — |
| BMWwSALE | r | 0.248* | 0.465*** | -0.123 | 0.395** | 0.135 | -0.239 | -0.06 | -0.078 | -0.103 | 0.05 |
| | p | 0.048 | <.001 | 0.334 | 0.003 | 0.288 | 0.057 | 0.638 | 0.541 | 0.417 | 0.695 |
| r: Pearson's Correlation Coefficient; | | | | | | p: p value for level of significance | | | Note. * p < .05, ** p < .01, *** p < .001 | | |

Conclusions

This study reveals that the sample companies show significant variability in both environmental and financial performance, as reflected by the various ranges in the findings. Benchmarking against industry averages reveals that sectors such as oil tend to have higher environmental intensities, while cement companies generally perform better in per-employee revenue and profitability. These industry-specific insights highlight the varying levels of operational efficiency and sustainability practices across sectors, emphasizing the need for tailored strategies to improve environmental performance without compromising financial goals.

The correlation analysis highlights a positive relationship between environmental efficiency metrics—such as carbon and water intensity—and financial indicators like return on assets and equity. Additionally, investment in employee training and development correlates strongly with higher productivity and profitability. These findings suggest that companies prioritizing sustainability initiatives and workforce development are more likely to achieve superior financial results, indicating that sustainable practices and profitability can be mutually reinforcing rather than mutually exclusive.

Overall, the research affirms that integrating sustainability metrics with traditional financial ratios offers a comprehensive view of corporate performance. The use of benchmarked integrated ratios provides valuable insights for managers, investors, and policymakers to make informed decisions that promote long-term value creation. Encouraging companies to adopt such holistic evaluation frameworks can facilitate the transition toward sustainable growth, especially in emerging economies like India, where balancing economic expansion with environmental and social responsibility is increasingly vital.

Limitations

The study relies solely on publicly available published reports, which may vary in detail and quality across companies and countries and even yearwise. Additionally, the selected ratios and benchmarks are based on guidelines and may not capture all dimensions of sustainability and financial performance, as already said in the methodology part. Availability of necessary data and limited time span is also another limitation in this study.

Recommendation might be considered as, to go through all the integrated ratios including share price ratios and also to check whether or not the integrated ratios are better predictor of corporate stability, over the traditional financial ratios.

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Sample Companies

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|--------------|---------------------|------------|
| Ultra Tech | Maruti | ONGC |
| Shree Cement | Tata Motor | Indian Oil |
| ACC Cement | Mahindra & Mahindra | BPCL |
| Dalmia | Ashok Leyland | HPCL |
| Ramco | Hero MotoCorp | RIL |
| Birla | | |
| JK Cement | | |