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A STUDY ON MEASURING THE IMPACT OF SUSTAINABLE PRACTICES ON THE SOLVENCY POSITION OF SELECTED INDIAN COMPANIES

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ABSTRACT

This study investigates the impact of sustainability reporting on the solvency positions of selected Indian companies. For this analysing eleven years of data from ten firms, the research assesses whether comprehensive sustainability disclosures correlate with improved solvency indicators, measured by debt-equity ratios. The findings indicate that companies like Infosys and ITC consistently improved their sustainability scores while maintaining low debt-equity ratios, reflecting strong financial health. Conversely, firms such as Tech Mahindra and JSW displayed greater variability in both sustainability scores and financial leverage. Regression analysis reveals a marginally significant negative relationship between sustainability scores and debt-equity ratios, though the model explains only a small portion of the variance, suggesting the influence of other unobserved factors. These results highlight the importance of sustainability reporting for corporate accountability and stakeholder trust, while also suggesting that its direct impact on financial solvency is influenced by broader financial and industry-specific conditions.

INTRODUCTION

The global business landscape is witnessing a paradigm shift towards sustainability, driven by heightened environmental awareness, regulatory pressures, and evolving stakeholder expectations. In this context, sustainability reporting has emerged as a critical tool for companies to disclose their environmental, social, and governance (ESG) performance. This practice not only enhances transparency and accountability but also aligns corporate strategies with sustainable development goals. As the adoption of sustainability reporting becomes more widespread, understanding its impact on various aspects of financial health, particularly solvency, has become increasingly important.

Solvency, a key indicator of a company's long-term financial stability, reflects its ability to meet long-term obligations and sustain operations. Traditional financial metrics have long been used to assess solvency; however, the integration of sustainability factors introduces a new dimension to this evaluation. While prior research has explored the relationship between sustainability practices and overall financial performance, there is a paucity of studies focusing specifically on the linkage between sustainability reporting and solvency.

This research paper aims to bridge this gap by examining the impact of sustainability reporting on the solvency position of selected companies. By analyzing the sustainability reports and financial statements of these companies, the study seeks to determine whether comprehensive sustainability disclosures correlate with improved solvency indicators. The findings of this research will provide valuable insights for corporate managers, investors, and policymakers, highlighting the potential benefits of integrating sustainability into corporate reporting frameworks.

The paper is structured as follows: the next section reviews the existing literature on sustainability reporting and its financial implications, particularly solvency. This is followed by a detailed description of the methodology used in the study, including the selection of companies, data collection, and analytical techniques. The subsequent sections present the empirical results and discuss their implications, culminating in a conclusion that summarizes the key findings and suggests directions for future research.

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LITERATURE REVIEW

The increasing focus on sustainability in corporate strategies has prompted a significant amount of research exploring its impact on financial performance. This section reviews key studies that have examined various aspects of sustainability reporting and its influence on different financial metrics across diverse geographical contexts and industries.

(Wiraguna et al., 2023)conducted an in-depth analysis of the impact of sustainability accounting and environmental performance on the financial performance of manufacturing companies listed on the Indonesia Stock Exchange from 2018 to 2021. Using quantitative methods and multiple linear regression analysis, the study analyzed data from financial, annual, and sustainability reports. The findings revealed a complex relationship: the economic dimension of sustainability accounting did not directly affect financial performance, the social dimension had a positive impact, and the environmental dimension had a negative impact. Additionally, environmental performance was found to negatively and significantly affect financial performance. The study emphasized the importance of companies disclosing sustainability practices, such as waste management, to improve their image, stakeholder trust, and attract long-term investors. The financial performance was measured using the Return on Assets (ROA) ratio, while environmental performance was assessed using the Toxic Release Inventory (TRI) ratio, comparing waste treated to waste generated. Methodologically, the study ensured data reliability through classical assumption testing, supporting the validity of the regression models used.

Aiyesan and Olutola (2023) (Sciences & State, 2022) explored the impact of sustainability reporting on the financial performance of listed manufacturing firms in Nigeria from 2010 to 2020. Their research underscored the positive influence of sustainability practices on financial outcomes, providing empirical evidence specific to the Nigerian context. By analyzing factors such as dividend policy, community cost, research and development, employee cost, and return on assets, the study revealed a significant positive relationship between dividend policy, employee relations, research and development, and financial performance. The findings highlighted the need for regulatory authorities to encourage more sustainability reporting among manufacturing firms in Nigeria to drive positive financial outcomes and effectively address environmental concerns.

(Gutiérrez-Ponce & Wibowo, 2023) examined the relationship between sustainability activities and financial performance in Indonesian banking companies from 2010 to 2020, utilizing ESG data from Thomson Reuters. The study investigated the impact of environmental, social, and governance (ESG) performance on key financial metrics such as Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q (TQ). The findings indicated an overall negative relationship, with varying effects from each ESG pillar: the social pillar positively affected ROA and ROE, while governance negatively impacted TQ. This research contributed to the understanding of ESG reporting's quality and its implications for stakeholders, policymakers, academics, and assurance providers, emphasizing the evolving landscape of sustainability and corporate social responsibility (CSR) in different organizational and cultural environments.

(Alam & Tariq, 2023) focused on corporate sustainability practices in Pakistan, using the Global Reporting Initiative (GRI) guidelines to assess the level and quality of disclosure. Their study found that companies in Pakistan exhibited an average level of disclosure (47%) and a quality of disclosure (27%), indicating significant room for improvement. Employing a generalized method of moments (GMM) estimation, the study established a positive correlation between corporate sustainability scores and both accounting and market-based financial performance, supporting the stakeholder theory. This research offered valuable insights for policymakers regarding the need for enhanced sustainability regulations at the corporate level.

(Amrigan et al., 2023) investigated the impact of sustainability report disclosure compliance on financial performance, specifically using the Tobin's Q ratio as a measure. The study found that economic disclosure had a negative and significant effect, environmental disclosure had a negative but not significant effect, and social disclosure had a positive and significant effect on financial performance. The research methodology involved panel data regression analysis, considering factors such as firm leverage and size. The findings indicated that high levels of leverage negatively impacted financial performance, while firm size had a positive but not significant influence.

(Kılıç et al., 2022) explored the relationship between sustainability performance and financial performance in companies listed on the KOSPI 100 index in South Korea and the BIST 100 index in Turkey. Using factors such as Return on Equity (ROE), Return on Assets (ROA), Return on Sales (ROS), and Market Value to Book Value (MV/BV), the study employed panel regression analysis and Generalized Method of Moments (GMM) to assess the impact of past financial performance on current values. The research revealed significant differences between

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the two countries and discussed the theoretical implications of stakeholder, agency, and legitimacy theories, providing insights for policymakers and practitioners to enhance sustainability and corporate responsibility.

(Permata Dewi et al., 2023) analyzed the impact of financial performance and corporate governance on the extent of disclosure in sustainability reporting among companies registered on the Asia Sustainability Reporting Rating (ASRRAT) from 2018 to 2021. Using a quantitative approach with multiple linear regression tests, the study examined determinants such as company size, profitability, leverage, liquidity, board of directors, and audit committee. The findings suggested that higher profitability, as measured by ROA, led to increased stakeholder support and influenced sustainability reporting practices, contributing to the existing empirical evidence in this area.

(Tristanto et al., 2023) investigated the relationship between sustainability performance and corporate performance in the Indonesian banking sector from 2018 to 2021, focusing on how leverage, moderated by managerial and institutional ownership, influenced this relationship. The study found that leverage mediated the impact of sustainability performance on corporate performance, with managerial and institutional ownership playing moderating roles. This research highlighted the importance of corporate governance in enhancing company performance, particularly in the banking sector.

(Yolanda et al., 2022) explored the relationship between corporate governance, sustainability reporting, financial performance, and market performance in non-financial companies listed on the Indonesia Stock Exchange from 2017 to 2019. Based on stakeholder theory, the study highlighted the positive and significant impact of sustainability report disclosure and corporate governance mechanisms on financial performance. The findings suggested that financial performance positively influenced market performance, with good corporate governance mechanisms affecting market performance through financial performance mediation.

Collectively, these studies underscore the complex and multifaceted relationship between sustainability reporting and financial performance. They highlight the importance of sustainability practices in enhancing corporate image, stakeholder trust, and long-term profitability, while also revealing variations across different contexts and industries. This body of literature provides a foundation for further exploration of how sustainability reporting impacts solvency, the focus of the present study.

Research Methodology

This study aimed at exploring the impact of sustainability reporting practices on solvency position of selected Indian companies. To meet this objective causal research design has been used and sample of 10 companies are selected with convenient sampling method based on availability of data. The data has been collected for 10 companies for eleven years from 2012 to 2023 from Prowess IQ and financial statements of selected companies. The collected data has been analysed using descriptive statistics and Panel regression analysis in Microsoft Excel and Stata Software.

Data Analysis

Table 1: Total Sustainability Disclosure Score of Selected Companies

	Infosys	ITC	Nestle	TCS	NTPC	Ultratech Cement	Tech Mahindra	JSW	IOC	GAIL
2012-13	124	102	93	130	194	74	96	86	144	141
2013-14	120	154	86	131	194	74	98	68	180	142
2014-15	120	156	86	144	190	74	98	60	182	144
2015-16	124	158	84	139	190	78	84	60	182	162
2016-17	154	158	96	92	190	78	64	76	180	168
2017-18	152	166	92	96	170	108	68	72	196	190
2018-19	178	166	98	102	202	130	134	74	206	194
2019-20	180	166	136	118	182	136	138	118	194	200
2020-21	184	182	146	128	182	166	172	142	194	202
2021-22	206	206	192	142	158	168	178	150	208	202
2022-23	210	230	184	162	202	140	226	196	212	226
Mean	159.27	167.64	117.55	125.82	186.73	111.45	123.27	100.18	188.91	179.18
SD	32.76	30.73	38.53	20.86	12.63	36.17	48.98	42.92	18.00	27.80
CV	0.21	0.18	0.33	0.17	0.07	0.32	0.40	0.43	0.10	0.16

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The table on Total Sustainability Disclosure Scores of selected companies from 2012-13 to 2022-23 offers a comprehensive overview of how these organizations integrate environmental, social, and governance (ESG) factors into their reporting. This comparative analysis reveals distinct trends and performance levels across the companies over the decade.

Infosys and ITC consistently maintained competitive total sustainability scores throughout the period. Infosys started at 124 in 2012-13 and steadily increased to 210 by 2022-23, showcasing strong commitment and improvement in overall sustainability disclosure. Similarly, ITC started strong at 102 and also showed steady growth, reaching 230 by 2022-23, highlighting robust sustainability practices.

Nestle and TCS started with relatively high initial scores but exhibited different trajectories. Nestle showed variations over time, while TCS maintained a steady upward trend, indicating differing approaches in sustainability reporting and management.

NTPC, Ultratech Cement, and Tech Mahindra began with lower scores but demonstrated notable improvements. NTPC and Ultratech Cement steadily increased their scores, reflecting enhanced integration of sustainability factors, whereas Tech Mahindra showed variability in their scores, potentially due to fluctuations in reporting methodologies or focus areas.

JSW, IOC, and GAIL displayed diverse patterns in their sustainability disclosure scores. JSW and IOC started lower but made significant strides over time, whereas GAIL consistently reported high scores, highlighting their strong commitment to comprehensive sustainability practices.

Analyzing the mean scores provides insights into overall performance. Companies like IOC and GAIL reported high mean scores (188.91 and 179.18 respectively), underscoring their consistent efforts in sustainability disclosure. Conversely, companies such as Tech Mahindra and Ultratech Cement had lower mean scores, suggesting potential areas for improvement in their sustainability reporting practices.

The standard deviation (SD) and coefficient of variation (CV) metrics indicate the variability and consistency in sustainability disclosure scores across companies. Lower SDs and CVs, observed in companies like Nestle and TCS, suggest more stable reporting practices. Higher SDs and CVs, seen in Tech Mahindra and JSW, imply greater variability in their annual sustainability disclosures, which could reflect changing priorities or methodologies over time.

In conclusion, the table illustrates diverse approaches to sustainability reporting among the selected companies. While some have shown steady improvement and robust efforts in integrating ESG factors into their disclosures, others have experienced fluctuations or maintained moderate scores. This comparative interpretation underscores the importance of transparent and consistent reporting in sustainability, which not only enhances corporate accountability but also strengthens stakeholder trust and supports long-term value creation. Companies with higher and stable total sustainability scores are well-positioned to navigate evolving ESG expectations and demonstrate their commitment to sustainable business practices effectively.

Table 2: Solvency Position (Debt Equity Ratio) of Selected Companies

	Infosys	ITC	Nestle	TCS	NTPC	Ultratech Cement	Tech Mahindra	JSW	IOC	GAIL
2012-13	0	0.003	0.584	0.008	0.724	0.355	0.34	0.93	1.323	0.374
2013-14	0	0.003	0.533	0.003	0.783	0.304	0.04	1.19	1.309	0.379
2014-15	0	0.002	0.007	0.006	1.06	0.393	0	1.17	0.815	0.328
2015-16	0	0.001	0.007	0.003	1.033	0.381	0.02	1.82	0.709	0.23
2016-17	0	0.001	0.01	0.003	1.113	0.261	0.02	1.64	0.677	0.133
2017-18	0	0	0.011	0.003	1.198	0.672	0.01	1.33	0.638	0.052
2018-19	0	0	0.01	0	1.334	0.62	0	1.28	0.941	0.023
2019-20	0.051	0.005	0.099	0.083	1.473	0.501	0.02	1.45	1.343	0.136
2020-21	0.054	0.006	0.073	0.08	1.472	0.422	0.02	1.2	1.031	0.151
2021-22	0.055	0.005	0.137	0.076	1.446	0.219	0.02	0.88	1.056	0.15
2022-23	0.063	0.005	0.111	0.076	1.343	0.183	0.02	0.94	1.198	0.306
Mean	0.02	0.00	0.14	0.03	1.18	0.39	0.05	1.26	1.00	0.21
SD	0.03	0.00	0.20	0.04	0.25	0.15	0.09	0.28	0.26	0.12
CV	1.33	0.74	1.40	1.17	0.21	0.38	2.02	0.22	0.25	0.58

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Table 23 presents the debt equity ratios for ten selected companies across the years from 2012-13 to 2022-23, providing insights into their solvency positions and financial leverage. The debt equity ratio measures the proportion of a company's debt relative to its shareholders' equity, indicating its ability to repay debts and manage financial obligations.

Companies like Infosys and ITC consistently maintain very low or zero debt equity ratios, reflecting their strong financial health and minimal reliance on debt financing. Nestle also maintains a relatively low ratio, indicative of conservative financial management practices.

Sectors such as utilities (NTPC), cement (Ultratech Cement), and energy (IOC, GAIL) typically show higher debt equity ratios due to the capital-intensive nature of their operations. This suggests greater reliance on debt to finance operations and investments.

The table illustrates trends in debt equity ratios over the years, reflecting changes in financial strategies and economic conditions. For example, there is a noticeable decrease in ratios for companies like Tech Mahindra and JSW, indicating efforts to reduce leverage or manage debt more effectively.

The mean debt equity ratios provide an average benchmark, with standard deviation (SD) and coefficient of variation (CV) showing the variability around these averages. Companies like Ultratech Cement and Tech Mahindra demonstrate higher variability in their ratios, potentially influenced by industry-specific factors and economic cycles.

The upward trend in ratios for companies like Infosys and ITC in recent years suggests increased reliance on debt, possibly for expansion or strategic investments. Conversely, fluctuations in ratios for NTPC and GAIL indicate varying approaches to capital structure management amidst changing market conditions.

In conclusion, Table 23 offers a comprehensive view of how selected companies manage their debt relative to equity over time. It serves as a valuable tool for stakeholders to assess solvency risk, financial stability, and strategic financial management decisions. Understanding these ratios helps stakeholders make informed decisions regarding investment, risk assessment, and financial planning based on observed trends and patterns in debt equity ratios.

Total Sustainability Disclosure

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Fixed-effects (within) regression               Number of obs      =       110
Group variable: Company                         Number of groups   =        10

R-sq:  within  = 0.0369                         Obs per group: min =        11
       between = 0.0188                                        avg =      11.0
       overall = 0.0020                                        max =        11

                                                F(1,99)            =      3.79
corr(u_i, Xb)  = -0.1406                        Prob > F           =    0.0543
```

DER	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
TSDS	-.0010077	.0005174	-1.95	0.054	-.0020344	.0000189
_cons	.5753907	.0774211	7.43	0.000	.4217705	.7290109
sigma_u	.51851014					
sigma_e	.17785647					
rho	.89472736	(fraction of variance due to u_i)				

F test that all u_i=0: F(9, 99) = 91.64 Prob > F = 0.0000

No.	Hypotheses	p-value	Accepted / Rejected
H_{015}	There is no significant impact of Total Sustainability Disclosure Score on Solvency Position.	0.054	Accepted

The fixed-effects regression analysis with 110 observations grouped across 10 companies provides insights into the relationship between Total Sustainability Disclosure Score (TSDS) and the dependent variable, likely a financial ratio such as Debt Equity Ratio (DER). The within R-squared value of 0.0369 indicates that 3.69% of

the variation in the dependent variable is explained by changes within each company over time, while the between R-squared of 0.0188 suggests an additional 1.88% attributed to differences between companies. The overall R-squared of 0.0020 signifies that the model explains a very small portion of the total variance in the financial ratio, suggesting that other unobserved factors not captured by the model may play significant roles.

The F-statistic ($F(1,99) = 3.79$, $p = 0.0543$) indicates that the model is marginally significant at the 0.10 level, suggesting a potential relationship between TSDS and DER that warrants further investigation. The negative correlation (corr(u_i, Xb) = -0.1406) between the error terms and predicted values suggests a potential need for model refinement or consideration of additional variables to improve explanatory power.

Examining the coefficients, the coefficient for TSDS is -0.0010077 ($p = 0.054$), indicating a negative association between Total Sustainability Disclosure Score and Debt Equity Ratio, although the statistical significance is borderline. The intercept (_cons) of 0.5753907 ($p = 0.000$) represents the baseline value of the financial ratio across companies after accounting for TSDS, indicating a significant inherent level of financial structure independent of sustainability disclosures.

The standard deviations (sigma_u = 0.51851014, sigma_e = 0.17785647) and the fraction of variance due to company-specific effects (rho = 0.89472736) underscore the substantial impact of individual company characteristics on DER that are not explained by the model.

In conclusion, while the analysis suggests a potential negative relationship between Total Sustainability Disclosure Score and Debt Equity Ratio, the overall explanatory power of the model is limited. This indicates that factors beyond sustainability disclosures, such as industry-specific conditions or other financial practices, may also influence the financial structure of companies. Future research could explore additional variables or employ alternative methodologies to further elucidate the complex interactions between sustainability reporting and financial ratios within corporate environments.

CONCLUSION

This study explored the impact of sustainability reporting on the solvency positions of selected Indian companies, analyzing data from 10 firms over a decade. While companies like Infosys and ITC showed consistent improvements in sustainability scores and maintained low debt-equity ratios, indicating strong financial health, others like Tech Mahindra and JSW exhibited greater variability in both sustainability scores and financial leverage. The regression analysis suggested a marginally significant negative relationship between sustainability disclosure scores and debt-equity ratios, but the model explained only a small portion of the variance, highlighting the influence of other unobserved factors. Overall, the findings underscore the importance of sustainability reporting for corporate accountability and stakeholder trust, yet indicate that its direct impact on financial solvency is moderated by broader financial and industry-specific conditions.

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