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# A Study of Financial Sustainability under ESG Approach: An Empirical Analysis of Nifty 100 Index Companies

#### Chandan Karki

Associate Professor, Motilal Nehru College, University of Delhi, New Delhi. E-mail : karki@mln.du.ac.in

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#### Keywords

Nifty 100, ESG, Sustainability, CSR, Governance, Profitability

**JEL Classification** G3, K4, M0, M4

Abstract: With Securities and Exchange Board of India (SEBI) circular dated 10 May 2021 on business responsibility and sustainability reporting disclosures of listed entities, it is inevitable to undertake a study on the determinants impacting the sustainability of the companies with emphasis on Environment, Society and Governance (ESG) approach. The objective of the paper is to analyze financial sustainability of the Nifty 100 Index Companies for the period 2014-2015 to 2019-2020 with especial focus on ESG phenomenon. The Panel data is modeled in term of regression equation. The variables modeled are capital structure, employee size, size of the business, liquidity, social responsibility, environment, governance and return on asset. The findings are out of eight variables taken into study six are significant and impacting the financial sustainability. The variables employee size, society and governance are positive significant. The variables size, liquidity and environment are negatively impacting the financial sustainability. The findings are relevant both for the corporate world and the government.

#### 1. Introduction

The financial reporting of the corporates are no longer adequately addressing stakeholders, because the financial statements alone do not contain information about the social and environmental aspects of the company's operations (Martínez-Ferrero *et al.*, 2013). Simply sustainability means doing business without adversities for the future generation. The sustainability is a wider term and connotes different concerns including environment, society, governance, stakeholders and government. The Sustainable Development Goals (SDGs) targeted by the United Nation general assembly in 2015 to be achieved by 2030 by the member countries are also emphasizing the environment, society and governance issues inter alia 17 SDGs. The sustainable finance can be expressed as the provision of the financial capital to project business that does not harm economic prosperity, environment and social justice. The different stakeholders viz creditors, suppliers, customers, investors, employees, society at large and government

require corporates to be more transparent and accountable as sustainable enterprise. The Indian laws attempting to inculcate the social and environmental responsible behavior of the business houses. ESG (Environmental, Social and Governance) is a term for a set of criteria used to screen potential investments by evaluating firm's behavior on governance parameter and its influence on the environment and society. The approach to management decision making has undergone drastically changed by focusing not only on the financial aspects of business performance but also on the social and environmental issues (Laskar and Maji, 2016). In the lineup number of initiatives are contemplated and made mandatory including mandatory setting aside 2% of profit for CSR activities and SEBI circular on Business Responsibility and Sustainability reporting by Listed Entities No. SEBI/HO/CFD/CMD-2/P/CIR/2021/562 dated 10 May 2021 mandating new disclosures on sustainability. Bondy *et al.* (2012), although opines that the sustainable policies in the developed countries. In fact it can be assisted through evolving holistic and integrated sustainability programs that targets the major industrial challenges. The present article trying to investigate financial sustainability of the Nifty 100 Index Companies for the period 2014-2015 to 2019-2020 with especial focus on ESG phenomenon.

#### 2. Rationality

The dynamic change in the developing countries including India has given rise to knowledge economy. It is affecting to a great extent the business houses which earlier focusing on tradition approach of accumulating profits over the decades to socially responsible firms which are not only accountable to its stakeholders but also to all its participants in a comprehensive intelligence. It is been widely accepted fact that it is not the only responsibility of state to care for the society, environment and good governance practice. The shift is on PPP models wherein it is the joint responsibility of the state and the Industry to strive for ESG models. The state has the onus to work for socially and environmentally friendly policies. In Indian context one study Gupta (2022) made a sincere attempt to measure growth performance of ESG themed mutual funds and reported that ESG mutual funds have beaten the market returns. The ESG themed mutual funds in fact earned higher returns than their counterparts. The study concluded that ESG investments not only accomplishing sustainability targets but also earning handsome returns. The voluntary observance of Global Reporting Initiative (GRI) based sustainability reporting by Indian corporates proves the relevance for the study of ESG approach affecting the financial sustainability. The topic always remain debatable whether ESG concerned corporate are more sustainable than their counterparts which believe in the profit theory only. Although some scholars may doubt it might impact economic growth and negatively erode the stakeholder's wealth. However the same cannot be accepted. Fox et al. (2002) reports that Environmental Tax Reforms (ETR) like initiatives were successful in the strict test of sustainability because of many reasons. The clarity and coherence of the Environmental Tax Reforms that effort towards the implementation and the contribution of the stakeholders. The paper reports that a similar concept of ETR has not achieved desired results in other countries because of the not specific clarity in the guidelines of the regulations. There are countries where we can see the impact is minimal and the firms have started looking at it in coherence. In India we are practicing successful models of CNG motor vehicles, solar and wind energies and very recent in the row are E- vehicles launched in India. The Tata group being the big conglomerate in India is the leading in this row.

The significance can be found from the point of view of government, investor, society and other stake holder who eyes such corporates with respect and believe that their funds are deployed in the corporates who behave responsibly towards to the environment and society. The relevance also been traced when in the very recent time many corporates found concerned for the environment and society.

### 3. Review of Literature

Every country in the world now talking of the sustainable performance of the corporate firms. The sustainability of the business performance can be measured from different perspective. The question of the hour is will we be able to optimize the performance taking together the care for the environment, society, governance and transparency? Sustainability is a phenomenon that helps to create an active society and a standard of life at the same time preserving the ecology and the environment. It demonstrates the principles that the coming generation should live in a world with the same resources; current generation is living (Clough 2006). Sodhani and Munjal (2020) finds that Sustainability report is the determinant that affect the reporting value. Verma et al. (2021) suggested that the reporting of environmental aspects is necessary especially for environmentally sensitive companies on a mandatory basis. The disclosure of CSR aspects and the performance of CSR are related connotation. Companies with significant contribution towards CSR may be more likely to have greater impact on the readability of their reporting. Hidayah et al. (2019) examines the factors that impact the sustainability of the corporate disclosure. The article finds that the variable Current Ratio (CR), Size and Audit Committee Meetings have significant effect, while the governance committee and the type of industry effect are not significant. Therefore, it concludes that Companies having bigger size of assets and significant debt capital must disclose the information in a sustainability report. The nature or environment has been the major concern that being depleted by the corporate; so from time to time it has drawn the attention of social activists, environmentalist, local residents and of course the state concerned. Hu et al. (2019) worked on whether the air pollutant emission corporate worth the yearly billions environmental input? The various industries are researched to form the opinion that to set different regulations for different industries. Darus et al. (2020) examines sensitivity of the corporate towards climate change and the impact of financial structure and corporate governance structure on the reporting of carbon information. The results of the study revealed that carbon information disclosure are the highest and that climate change risks had the lowest disclosure. Further it reported positive association of profitability with carbon disclosure while debt capital is negatively significant. The paper finds that the governance structure variable is insensitive to the disclosure of carbon information. It is equally to worth mentioning that these days the ESG approach is linked to CEO compensation or salary packages. AI-Shaer and Zaman (2019) examine relationship between board level sustainability committees and independent external assurance on the sustainability-related targets in CEO compensation contracts. The paper finds both board-level sustainability committees and sustainability reporting assurance have a significant positive association with the inclusion of sustainability terms in compensation contracts of CEOs. Whereas Francoeur et al. (2017) measures environmental sustainability trough data on actual performance, Chandan Karki

reporting procedures, policies and guidelines, and management systems. The paper reports environment sustainable firms pay their executives less remuneration and rely less on incentive-based compensation than their counterparts. D'Apolito *et al.* (2019) investigates the financial and non-financial impacts of relating the sustainability phenomenon with the executive remuneration in banks. The paper found that it (a) negatively impact economic performance, (b) negatively impact the riskiness profile, and (c) positively impact sustainability performance. Alhaj (2019) found that through effective corporate governance firms increase their profitability, effectiveness and efficiency, improve their credibility, sustainability, transparency, disclosure, reputation, competitiveness and quality in all aspects and enhance management control, risk management, financial management, oversight and relations with key stakeholders. Therefore previous studies are linking the performance and growth with the environment, society and corporate governance practices of the firms. In Indian context although legal provisions are there but it is equally area of research that leaving apart the legalities, whether ESG phenomenon impacting sustainability of the Indian corporates? It is equally interesting to investigate in which direction the resources employed on environment safety, society welfare and good governance practices impacting the financial performance of the companies.

### 4. Objectives and Hypotheses of the Study

### 4.1. Objectives of the Study

On the backdrop of the discourse on the past literature work; the financial parameters and the ESG parameters impacting the financial sustainability are taken into the ambit of the paper. The primary objective of the paper is to study the impact of ESG phenomenon on the financial sustainability of the Nifty 100 Index Companies. The secondary objective is to study the impact of the other financial parameter on the sustainability of the companies.

## 4.2. Development of Hypotheses

The hypotheses can be listed as under:

- H1: Profitability Margin is negatively associated with Capital Structure.
- H2: Profitability Margin is positively associated with firm Employee Size.
- H3: Profitability Margin is positively associated with Size of the firm.
- H4: Profitability Margin is negatively associated with liquidity.
- H5: Profitability Margin is positively associated with Society Expenditure.
- H6: Profitability Margin is negatively associated with Environment concerns
- H7: Profitability Margin is positively associated with Governance Practices
- H8: Profitability Margin is positively associated with Return on Asset.

### 5. Research Methodology

### 5.1. Sample, Time Period and Data

The sample consists of panel data of NSE-100 Index as on April 22, 2022 from prowess corporate data base as provided by Centre for monitoring Indian economy. NSE-100 Index. The sample is

selected to ensure balanced selection from all the industry groups. In order to measure higher accuracy in the model and results, those corporates for which data for modeled variables are not available have been removed; primarily banking companies. This resulted in selection of 88 companies. Among these too, very few entries were still missing for some of variables. So the panel data is an unbalanced one. The time period for panel data is financial year 2014-2015 to 2019-2020.

### 5.2. Modelling

The study involves estimating the following Panel data model.

 $PM_{it} = a + b_1CS_{it} + b_2ES_{it} + b_3Size_{it} + b_4Liq_{it} + b_5Social_{it} + b_6ENV_{it} + b_7GOV_{it} + b_7ROA_{it} + b_7ROA_{it}$ 

Where variables selected are

 $PM_{it}$  is Profit Margin of  $i_{th}$  company for "t" time period. The profit margin has been computed as Net Income/ Revenue. The profit margin count the potential of the company for future sustainability of the company. The variable is taken as dependent variable.

 $CS_{it}$  is the Capital Structure of  $i_{th}$  company for "t" time period. The capital structure is the ratio of Debt over Equity. Does source of financing impacting the sustainability of the company is to be answered by the modelling.

 $ES_{it}$  is the Employee Size of  $i_{th}$  company for "t" time period and expressed as ratio of labor cost over Net Sales. The employees are the blood of any corporate without which it cannot think of future survival. How it is impacting the financial viability is the question of enquiry.

Size<sub>it</sub> represents respective size for i<sub>th</sub> company for "t" time period. It is taken as natural log of Total Asset. It is generally believed that large the scale, higher the financial viability. Does the same postulate applies to our sample data of Nifty 100 index companies shall be answered by the testing?

 $\operatorname{Liq}_{it}$  computes the level of liquidity for  $i_{th}$  company for "t" time period. It is the ratio of current assets over current liabilities. Higher the liquidity, lower the profitability and vice versa is the theory need to be tested for the sample data.

Social<sub>it</sub> is the proxy variable. The key element of ESG phenomenon therefore measuring impact of ESG phenomenon on financial sustainability. It has been measured as the actual amount of expenditure incurred by the company for the society.

 $\text{ENV}_{it}$  is also a proxy variable which is prominent part of ESG phenomenon. It is the common interpretation that more the power and fuel used; more will be deterrent to the environment. Therefore it is inferred that there is inverse relationship between clean environment and fuel being burned into the environment.

 $\text{GOV}_{it}$  is a proxy variable for measuring impact of ESG phenomenon on the financial sustainability. The governance is measured through the size of the board.

#### 6. Analysis and Findings

#### 6.1. Descriptive Statistics

Table 1 reports descriptive statistics for dependent and independent variables over the selected time period of 2014-2015 to 2019-2020. The average profit margin reported is 47.49 whereas the minimum

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is in negative or losses. The median value for profit margin is 12 percent. The mean corporate structure is 23.78 meaning thereby that on average the corporate have 23.78 times debt capital over the equity part. The average employee cost as percentage of its revenue is 24.01. The environment variable is counted as inverse relationship to the usage of power and fuel. The average mean inverse relationship stands at 0.25 whereas the maximum is 3.04. The average board size counted is 14.56 or rounded off to 15 whereas the minimum board size is 1. The liquidity mean counted at 1.68 i.e. on average the corporate retain liquid asset to the tune of 1.68 times of their liquid liabilities. The mean size of the corporate is Rs 552118.7 million whereas the minimum size is Rs 4983.60. The contribution of corporate for the society in terms of money is found to be mean of Rs 741.86 million and minimum of Rs 0.50 million. The return on asset variable found mean value of 0.09 or 9% return i.e. on average sampled companies earn 9% return on their Total Assets. The minimum return value is negative 5.2 %. The other descriptive are also shown in the Table 1.

Tuble il Descriptive statistics									
	CS	EMP Size	ENV	GOV	LIQ	Size	Social	PM	ROA
Mean	23.78	24.01	0.25	14.56	1.68	552118.7	741.86	47.49	0.09
Median	11.95	0.068	0.0007	14.00	1.46	189916.0	267.95	0.12	0.08
Maximum	371.78	2236.83	3.04	26.00	7.82	9721190	9087.10	4090.17	0.77
Minimum	0.00	0.0098	6.36	1.00	0.00	4983.60	0.50	-1.2	-0.52
Std. Dev.	40.34	191.60	0.76	3.66	1.09	988845.3	1272.74	384.85	0.10
Skewness	4.77	9.50	2.72	0.28	1.84	4.39	3.47	9.41	1.56
Kurtosis	33.47	97.50	8.63	4.04	8.63	30.20	17.13	93.57	16.80
Jarque-Bera	18611.33	169585.1	1121.78	25.81	826.86	14913.18	4526.09	156188.5	3655.25
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

#### Table 1: Descriptive Statistics

Source: Author's Own Compilation

### 6.2. Panel Unit Root Test

The null hypothesis  $(H_0)$  is that the variable has unit root. Using PP - Fisher Chi-square unit root test, all panel data series found to be stationery at second level and consequently any further analysis is undertaken at the second level of the respective variable. The result of unit root test are shown in Table 2.

### 6.3. Auto Correleation Test

Serial Correleation (LM) test best judged for macro panel data with long time series for instance over 20 years. Serial correlation causes the standard error of coefficients to be smaller than they actually are and higher R Squared (Baltagi 2021). The Durbin Watson is relied to check for auto correlation problem.

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Stationarity Test for Panel Data: PP - Fisher Chi-square unit root test				
Variable	statistic	Prob.		
PM	470.486	0		
CS	460.541	0		
LIQ	426.378	0		
SIZE	511.727	0		
EMP SIZE	393.650	0		
ENV	324.006	0		
SOCIAL	417.440	0		
GOV	417.256	0		
ROA	816.526	0		

### Table 2: Panel Unit Root Test

Source: Author's Own Compilation

## 6.4. Multicollinearity

Correleation test result are shown in Table 3. As low degree of correlation is found among independent variables as shown in Table 3, therefore the variables are fit for the modelling.

Table 5. Concleation Matrix								
	CS	EMP Size	LIQ	Size	ROA	ENV	GOV	Social
CS	1.00	0.09	-0.11	0.04	-0.16	-0.009	-0.029	-0.05
EMP SIZE	0.09	1.00	-0.08	0.01	-0.05	-0.2	-0.024	-0.02
LIQ	-0.11	-0.08	1.00	-0.12	0.22	0.12	-0.038	0.07
SIZE	0.04	0.01	-0.12	1.00	-0.21	0.08	0.182	0.06
ROA	-0.16	-0.05	0.22	-0.21	1.00	0.08	0.057	0.01
ENV	-0.009	-0.2	0.12	0.082	0.088	1.00	0.121	0.13
GOV	-0.02	-0.02	-0.03	0.18	0.05	0.12	1.00	0.26
SOCIAL	-0.05	-0.02	0.07	0.06	0.01	0.13	0.263	1.00

### Table 3: Correleation Matrix

Source: Author's Own Compilation

## 6.5. Hausman Test: Fixed Effect Model Vs Random Effects Model

The Hausman test is performed over the panel data to determine the applicability of random effects model. The null hypothesis is preferred model is random effect model vis a vis alternate the fixed effect model. It determines whether the unique error  $(\mu_i)$  are correlated with the regressor. The test results are shown in Table 4.

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Table 4	: Hausman Test for Appropriat	e Panel Data	
Correlated Random Effects - Hauss	man Test		
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.671529	8	0.4662

Source: Author's Own Compilation

As the P-value is 0.4662 we accept null hypothesis. Therefore the result suggest that the random effect model is most appropriate among the fixed effect, random effect and simple pooled cross section time series models.

### 7. Empirical Result and Analysis

The table 5 reports the empirical result found for the impact of selected variables on the financial sustainability of the panel data of Nifty 100 index companies. We applied panel regression on the model and found the result.

Variable	Coefficients	Std. Error	t-Statistics	Prob.
С	1.39	7.34	0.19	0.84
CS	-0.19	0.212	-0.89	0.37
Emp Size	2.55	0.29	8.54	0
SIZE	-15.29	9.26	-1.65	0.09
LIQ	-8.77	3.17	-2.7	0.00
SOCIAL	10.70	4.27	2.50	0.01
ENV	-27.02	13.97	-1.93	0.05
GOV	55.12	25.97	2.12	0.03
ROA	-12.19	27.22	-0.44	0.65
R-Square		0.92		
Prob (F-Statistic)		0.00		

### Table 5: Empirical Result

Source: Author's Own Compilation

As we can witness through the result we have eight independent variables into the model. The R-square value is high as 92 %. It means 92 % proportion of variance in the profit sustainability can be

explained by the model or the independent variable fitted into the model. The Prob (F-statistic) is found "0" and overall significance of the regression. The variable corporate structure is found to be insignificant. That is source of financing viz debt capital or equity capital does not have any impact on the financial sustainability for the nifty 100 index company for the selected period. The variable employee size have impact on the profitability. The variables comes to positive significant as P-value less than 0.05. The coefficient is 2.55. It determines that 1 % increase in the employee cost would result in 2.55 % increase in the financial sustainability. The variable size of the company is also negatively significant at 10 % level. What comes out of the results is that for selected Nifty 100 companies 1 % increase in size would result in negative 15.29 % change in the profitability margin and vice versa. The variable liquidity is negatively significant to the financial sustainability. It reports that 1% increase in liquid assets of the company would result in fall of 8.8 % in financial sustainability. The variable social positively determines the profitability. This is what the corporate social responsibility phenomenon advocates. The coefficient calculated is 10.70. That indicates 1 % increase in the amount spent by the corporates for the society would bring 10.70 % increase in the profitability returns. The variable environment also determines the profitability sustainability. In our testing it is negatively impacting the profitability. It is significant at 6% level of significance. The 1% increase in the environment safety measures would result in 27% decrease in the profitability margins. The next variable governance which is eyed as transparency and accountability factor in the decisions and working of the corporates. The variable governance is positively significant. The coefficient is reported as 55.12 which indicates that 1% increase in the good governance parameters it would result in 55.12% increase in the sustainability of the company. The last variable ROA i.e return on assets is being reported as insignificant.

### 8. Summary and Conclusion

We have tried to attempt to gauge the financial sustainability and the variables determining the financial sustainability with especial emphasis on the ESG phenomenon. The SEBI circular dated 10, May 2021 mandating new disclosures on sustainability for top 1000 listed entities with effect from Financial Year 2023 is worth mentioning. The circular introduced format for Business Responsibility and Sustainability report (BRSR). It will require details on water and energy, green houses and air pollutions emissions, waste generated and their respective disposal etc. We have incorporated eight independent variables into the model. The first element of ESG phenomenon is environment which is taken as variable into the model and reported negative significant to the financial sustainability. The variable Social which is discharging the obligation towards the society as a return is generally presumed that in the long run the corporate have favorable impact on their profitability and assets. In our results also it is reporting positive significant. Therefore we can conclude that the mandatory provision in the Company Act 2013 to set aside 2% out of the profits for the betterment of society is in fact repaying the corporate in terms of their increased profitability. The third parameter of ESG phenomenon is governance. The governance is also positive significant in our model and can be inferred that higher the transparency in the governance the more is the profitability. The board decisions have been questioned with suspicion especially in the recent liquidation process of the company like Diwan Housing Finance Ltd. (DHFL), Future Retrail Ltd under Insolvency and Bankruptcy Code 2016. The variable capital structure does not determine the profitability margin. It is irrelevant which source of finance is taken to fund the operations of the company. The employee size is positive significant. The interpretation would be the higher and skillful work force, the positive impact on the financials of the company. The variable size negatively impacting the financial sustainability. It appears that it becomes difficult to maintain the higher returns at the large scale of operations. The liquidity reports there should be trade-off between the level of liquidity and risk associated with the funds. Higher liquidity reporting falling margins. The variable ROA is insignificant as far as impact on Profit Margin (PM) are concerned for the Nifty 100 index data base for the selected period.

#### 9. Recommendation

The findings are relevant both for the corporate world and the government. The variables environment, society and governance are impacting the sustainability of the business corporate. It is advisable, therefore in the long run the companies have to give ESG approach the due weightage in their decision making process. The other financial variables impacting should also be the focus areas of the key management of the companies. It is suggested that the public and private sector should venture to identify all the potential challenges that may be faced during the implementation of ESG sustainability phenomenon with the regulatory mechanism from the state side.

#### 10. Limitations

The results are valid for the selected Nifty 100 Index companies and it may vary to the large sample data. There are few companies who are following Global Reporting Initiative (GRI) standard in India, therefore we could not build a model gauging sustainability phenomenon taking GRI standards into the Indian corporates data base.

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