

# Do Sustainable Practices Enhances the Firm Performance: Evidence from Indian Energy Sector

**Dr. Mohd. Yousuf Javed**

Faculty,  
Department of Business Administration,  
Aligarh Muslim University,  
Kishanganj Centre, Bihar.

**Mohd Aqil**

MBA  
Department of Business Administration,  
Aligarh Muslim University,  
Kishanganj Centre, Bihar.

## **Abstract:**

**Purpose:** This study explores the different dimension of sustainable practices and observes its impact on the firm performance specifically in Indian Energy sector.

**Methodology:** The present study is conducted on the sample of the twelve-firm listed in BSE 100; data has been extracted from CMIE. Panel data regression has been used to check the effect of sustainable practices on firm performance.

**Findings:** In this study, it was found that investing in sustainable practices has a significant impact on firm performance, especially market-based parameter get improves.

**Implications:** The research continues to determine the overall impact of sustainable practices in energy sector and their impact on firm performance. Future research could describe the impact of sustainability on cost savings in energy sector.

## **Keywords:**

*Sustainable practices; firm performance; panel data regression; BSE 100; energy sector.*

## **1. Introduction:**

Sustainability has been considered as ultimate weapon to overcome the economic, social and environmental problems that the world is facing these days. If we talk about the proper definition of sustainability it can explained as the steps that we take to preserve the natural resources of the world for the future generation. (Khan et al., 2022)After the industrialization, corporate used to treat the organization as profit making machines but in the last decades, we have observed that organization can be used as a way to promote the

environmental concerns and social equality. Sustainability is the careful management of resources for the future or indefinite period of time. Sustainability is frequently cited as the company's long-term goal, but not everyone in management considers it to be their main objective. The Brundtland Report introduced the concept in 1987. The report had two main dimensions: people's desires for a better society and natural limitations. The concept transformed over time into three broad categories: social, environmental, and economic (Mohd Yousuf Javed, Mohammad Hasan, Azam, 2020). The pressure on the energy sector to address the environmental issues posed by conventional energy sources, such as fossil fuels, has increased in recent years. A global push for sustainable energy solutions has been sparked by factors such as climate change, resource depletion, and increased awareness of the harmful effects of carbon emissions. Governments, regulatory agencies, investors, and society at large are placing greater emphasis on the adoption of sustainable practices by the energy sector industries in order to lessen their negative environmental effects. While environmental concerns are the primary driver of sustainable practices in the energy sector, there is growing understanding that these practices can also have a significant impact on financial performance. Energy sector businesses can increase operational effectiveness, cut costs, open up new markets, and boost their overall reputation and brand value by incorporating sustainability into their operations. Improved financial performance and long-term competitiveness may result from these factors. Sustainability has become a critical consideration for businesses in all industries, including the energy sector. As the demand for energy grows, energy companies are under increasing pressure to adopt sustainable practices in order to ensure long-term viability and reduce their environmental impact.

The paper identifies and assesses the most common sustainability practices used by energy sector industries in order to improve financial performance. The energy sector is a critical contributor to global sustainability because it powers economies and supports social development. Traditional methods of energy production and consumption, on the other hand, have resulted in significant environmental, social, and economic challenges. Because of the negative impact of such practices on the environment and climate change, companies in the energy sector have been forced to shift to more sustainable methods of energy production. This paper also explores the challenges and opportunities for promoting sustainability in the energy sector industries of renewable energy, oil and gas, and electricity generation.

Adopting sustainable practices benefits not only the environment but also the financial performance of businesses (Khan et al., 2022). Cost savings, improved brand reputation, increased customer loyalty, and reduced regulatory risk can all be achieved through sustainable practices. As a result, many energy companies are incorporating sustainability into their business strategies in order to improve financial performance while reducing environmental impact. The paper examines the key drivers and barriers to sustainable energy production and consumption, providing a comprehensive analysis of the current state of sustainability practices in the energy sector. It investigates the role of policies, regulations, and technological innovations in promoting energy sector sustainability.

Overall, the purpose of this research paper is to shed light on the relationship between sustainability practices and financial performance in the energy sector. The findings of this study will be useful for energy companies looking to implement sustainable practices, improve their financial performance, and contribute to a more sustainable future.

The main objectives of this research paper is to assess and analyze the sustainable practices used by the energy sector's businesses, including those that produce renewable energy, oil and gas, and utilities & also to investigate the connection between sustainable business practices and metrics of financial performance like profitability, return on investment, and market value. This paper helps in to understand the potential risks and difficulties involved, as well as the main motivators and obstacles for implementing sustainability practices in the energy sector & also to offer analysis and suggestions on how to maximize sustainability practices in order to achieve both financial and environmental objectives for energy sector businesses, policymakers, and investors.

## **2. Literature Review:**

This literature review examines the relation between sustainability and financial performance in innovation in the energy sector, as well as the function of executive incentives. The conclusion shows that different energy companies and time periods have different effects of innovation investment on business performance. Furthermore, executive salary incentives, particularly in technology-focused companies, have a positive relation between innovation investment and financial sustainability, in contrast to equity incentives. This study offers a fresh viewpoint on how to balance innovation spending with corporate performance targets and create executive incentive programmes.

(Andrade et al., 2021) explored the relation between environmental performance and firm performance in energy firms is examined in this review of the literature. The advantages of green energy investments from a financial and environmental standpoint have been examined in several studies. According to the literature, greener businesses outperform their less environmentally friendly competitors. Additionally, particularly in recent years, investments in green energy outperform their non-green counterparts on the financial markets. These results imply that investing in green energy companies can yield financial returns on par with those of non-green energy companies while also fostering sustainable development.

(Adomako & Tran, 2022) explored the relation among sustainable strategy, firm competitiveness, and firm performance in energy sector. This paper proposes that firm competitiveness and market orientation moderate the affect between sustainable strategy and firm performance. The results of the study suggest that sustainable environmental strategy positively impacts firm competitiveness, and this relationship is further strengthened by market orientation. Moreover, firm competitiveness mediates the affect between sustainable strategy and firm performance.

(Gregory, 2021) examined the relationship between RE utilization and financial performance of the companies listed in fortune 500 top green companies overtime period of 2007-2013. He has used ROI, Tobin's Q and operating margins as the variables of financial performance.

(Jha & Rangarajan, 2020) explored the relationship between CSF and firm performance in an emerging market, results shows that this relationship does not change based on the company size and profitability.

(Wasara & Ganda, 2019) investigates how corporate sustainability information and ROI are related. The relationship between environmental disclosure and return on investment was studied using a multi-regression analysis. Results indicate that environmental disclosure and return on investment have a negative relationship. This study suggests implementing corporate social disclosure because it will motivate businesses to take social responsibility seriously while also producing financial benefits.

(Alshehhi et al., 2018) examined the correlation sustainable practices and firm performance has become more prominent, but consensus remains elusive. Findings suggested that 78% of publications discuss the positive correlation between sustainable practices and firm performance. Different perspectives on the relationship arise from differences in research methodology and variable measurement.

(Deb et al., 2022) explored the effects of CSR on firm performance in the Indian context. Panel regression analysis shows that CSR significantly effect profitability and stock returns. The results show that the market rewards those companies that consciously engage with stakeholders.

(Prasad et al., 2019) examined the CSR and energy intensity. The data from (BSE) 100 over six years (2009–2015) has been used and the regression results concluded that CSR does affect not energy intensity.

(Abdi et al., 2021) examined the impact of (ESG) disclosures on airline firm value and capital growth is investigated in this study. For the sample of 27 airlines from around the world between 2013 and 2019. This outcome highlights that improving both pillars raises an investigated airline's market value and financial efficiency.

(Boukattaya et al., 2021) investigated whether or not CSR investments have some impact on (CFP) or the other way around. The KLD database and Thomson ONE are used to create our data set. To evaluate Granger causality between CSR concerns and CFP, study uses panel data on companies of energy sector spanning the years 1991 and 2009. Our research shows that CSR issues have different effects on financial performance than CSR strengths, with CSR concerns having an impact on both profitability and market value. After various delays, these effects start to show up.

(Kludacz-Alessandri & Cygańska, 2021) examined that how energy sector companies' financial performance is impacted by their environmental stewardship. This study also evaluates the relationship between CSR and environmental responsibility. 75 businesses make up the sample, which was drawn from the MSCI World Energy Index between 2013 and 2017. Study used the two-stage least squares estimation. The outcome demonstrates how environmental responsibility practices enhance a company's financial growth.

Reddy, Dr. (2010) examined the impact of sustainable reports on businesses' financial growth and pinpoints, restrictions, and flaws in existing sustainability reporting constructs. For a sample of 68 listed companies, estimating abnormal returns for a 31-day event window using the event study method. Findings suggested that sustainability reporting statistically contributes to the Australian companies' abnormal returns.

(Ameer & Othman, 2011) examined that whether companies with sustainable initiatives show better firm performance than those without such practices. The findings suggested that sustainable practices lead to better financial performance and a two-way relationship between CSR practices and firm performance.

(Charlo et al., 2013) studies on corporate social responsibility (CSR) that have been examined concentrate on analyzing the connection between a company's performance in the financial and social spheres. The variables used to measure CSR, however, have prevented the results from being definitive. In this study, an empirical analytical method was used to look for potential differences between the financial metrics of companies that were deemed socially responsible and those that weren't. The findings demonstrate that socially conscious businesses make more money while taking on the same amount of systematic risk and are more responsive to market fluctuations, levels of leverage, and firm size.

### 3. Research Methodology:

#### 3.1. Model validated:

$$ROE = A1(SCE) + A2(SWTE) + A3(RDE) + A4(EPE) + A5(E\&U) + A6(Do)+\textcircled{C}$$

$$ROA = A1(SCE) + A2(SWTE) + A3(RDE) + A4(E\&P) + A5(E\&U) + A6(Do)+\textcircled{C}$$

$$EPS = A1(SCE) + A2(SWTE) + A3(RDE) + A4(E\&P) + A5(E\&U) + A6(Do)+\textcircled{C}$$

Source: (Javed et al., 2022)

**Table 3.2: Variables In the Dataset:**

Variables	Sub variables	Definitions
Social sustainability	Social and community Expenses	Amount incurred by the companies to uplift the society.
	Staff welfare and training expenses	The cost incurred in the training of staff for making them responsible regarding environment.
	Donations	Charity given by the corporates.
Economic sustainability	Employee utilization ratio	Optimum utilization of the employees for making the lean supply chain.
	Research and development expenses	Cost incurred by the corporates to develop a sustainable eco-system.
Environment sustainability	Environment and pollution expenses	Cost incurred by the companies to save the planet by controlling the waste.
Financial performance	Return of equity (ROE)	Accounting based parameter based on the equity.

Variables	Sub variables	Definitions
	Return of Assets (ROA)	Accounting based parameter of financial performance, it reflects the overall return of assets.
	Earnings per share (EPS)	Market based parameter of financial performance which explains the wealth of the companies and shareholders.

### 3.3. Sampling Method:

For this study, the data has been extracted from 100 BSE-listed firms for 11 years from 2012-2022. Out of the sample of 100 firms, to select the industry for study, only the Energy sector was selected. So, out of all the industries, only twelve companies were selected.

## 4. Analysis and Results:

### 4.1. Assumptions of panel data regression:

Unit root test: This outcome suggests that the time series under investigation exhibits a stable behavior and does not possess a unit root, explaining the presence of stationarity in the data. Test of multicollinearity: The value of Centered VIF is <10, which shows the data do not have multicollinearity.

Test of autocorrelation: The outcome suggests that the observed values in the time series are independent and not influenced by past values, indicating the absence of significant serial correlation in the data. After going through the assumptions of panel data regression, we check start with panel data regression.

**Table 4.2. Results Of Panel Data Regression:**

Variables	ROE(FE)	ROA (FE)	EPS (FE)
SCE	-0.001856	0.001382	-0.000266
SWTE	<b>0.000599*</b>	<b>-0.000639*</b>	5.98E-06
RDE	-0.000758	<b>0.000649*</b>	<b>0.003443*</b>
EPE	0.001778	0.000631	<b>-0.005834*</b>
EU	0.003329	-0.006507	<b>0.424773*</b>
Do	-0.000114	0.000839	0.001456
C	7.701937	7.057600	9.853544
<b>R squared</b>	0.1991	0.2680	0.3924
<b>Durban Watson</b>	1.1516	0.5330	0.8222
<b>Probability</b>	0.0410	0.0015	0.0000

**(FE: The results of Fixed Effect):**

### **Results related to ROE:**

Staff welfare and training expense is the only variable that affects the ROE significantly. R square, Durban Watson, and probability values are 0.1991, 1.51, and 0.04, respectively.

### **Results related to ROA:**

Staff welfare and training expenses and research & development expenses are only two variables of sustainability that shows significant impact on ROA with the value of -0.0006 and 0.0006; however, other variables do not show this impact on the ROA. R square, Durban Watson, and probability values are 0.2680, 0.533, and 0.001, respectively.

### **Results related to EPS:**

The research & development, environment & pollution, and employee utilization ratio significantly impact the EPS with values of coefficients 0.0034, -0.0058, and 0.424. R square, Durban Watson, and probability values are 0.3924, 0.822, and 0.000, respectively.

### **Conclusion:**

The researcher has noted a significant relationship between staff welfare and training and ROE in the energy sector, but the other sustainability variables have no significant relationship with ROE. The same is true for ROA but Research and development expenses significantly impact ROA. When results related to EPS are studied, one notes a relationship between the research and development expenses, environment and pollution expenses, and employees' utilization ratio with EPS; however, there are no significant relationships between the other sustainability variables with EPS.

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