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ESG scores and stock returns during COVID-19: an empirical analysis of an emerging market

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Abstract

Purpose – The COVID-19 pandemic resulted in a dramatic downturn in the global stock markets. Investors look for safe stocks that can provide better risk-adjusted returns. Stocks with higher Environmental, Social, and Governance (ESG) scores can be good choices for investors. This study focuses on this argument by examining the relationship between ESG indicators and stock returns while considering financial and macroeconomic variables.

Design/methodology/approach – In this study, 39 non-financial firms listed in Nifty-50, for which data is available, have been included. Panel data from 2018 to 2021 is collected to examine this relationship in the presence of COVID-19. Additionally, the panel regression method is used.

Findings – The empirical findings indicate a positive relationship between ESG scores and stock returns. This relationship holds even when the control variables like Return on Assets (ROA), Gross Domestic Product (GDP), Return on Equity (ROE), age, size, leverage of the firm, inflation, and crisis period are used in the model.

Originality/value – This study contributes by examining the linkage between ESG indicators and stock return while controlling the impact of the financial and macroeconomic variables in Indian markets, which has not been undertaken so far. Moreover, this is the first study to use the ESG score data of S&P Global, which gives more weight to the material factors of a firm.

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Paper type Research paper

1. Introduction

The COVID-19 pandemic has had a widespread impact, extending beyond our daily lives and presenting unprecedented challenges across various sectors such as healthcare (Moynihan *et al.*, 2021), tourism (Suau-Sanchez *et al.*, 2020), investment (Dharani *et al.*, 2022b; Singh, 2020),

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and financial markets (Mishra *et al.*, 2020), as well as the environment, travel, and tourism (Gürlek and Kılıç, 2021). Consequently, it is one of the recent most disruptive and transformative events. Investors seek various ways to safeguard their investments in events like COVID-19. One of the contemporary ways is incorporating Environmental, Social, and Governance (ESG) factors in investment (Yadav and Saini, 2023).

ESG factors are gaining traction in the investor's lobby (Saini *et al.*, 2023a). These factors depict the sustainability of the firms in the long run. United Nations Principles of Responsible Investment global compact report (Who Cares Wins) was the first to use the term "ESG." With the breakout of the pandemic, investors have shown a great interest in the stocks, which are weighted towards ESG factors. Sood *et al.* (2023) propound that the significant influence of ESG on portfolio profitability became increasingly apparent after 2014, which coincided with the start of the second commitment period of the Kyoto Protocol and the signature of the Paris COP21 agreement.

There is a reasonable amount of literature on firms' ESG performance and financial performance, and most of the literature comes from developed nations. Scant literature accounts for a developing country (Saini *et al.*, 2023b) and the stock return performance of the firms. Developing countries are those that are growing at a fast pace as compared to underdeveloped countries. Such countries attract investment from developed nations to fetch more returns from fast growth. The socio-economic conditions of such countries are not at par with developed nations, and they play a significant role in determining the stock prices in emerging markets (Al-Tamimi *et al.*, 2011). Moreover, there is immense pressure on firms to become ESG compliant. However, the question arises of how investors would value ESG practice when multiple factors drive the whole market. Earlier research on ESG and firm performance has primarily overlooked the relevance of the socio-economic status of the nations where the firm operates. Therefore, capturing the effect of ESG performance and other significant financial and economic variables on stock returns is highly needed and hence becomes the aim of this paper, especially in the Indian context.

Despite their rapid evolution, ESG investments in India are still in a very early stage of development. Incorporating ESG factors into investment decision-making processes is increasingly important in light of India's developmental aspirations to solve social problems that continue, as well as growing environmental and climatic concerns (GOI, 2021). This is also consistent with achieving the nation's SDG objectives. According to studies, India must invest USD 0.6 trillion annually to achieve the SDGs (Impact Investor Council (IIC) and Asha Impact, 2020). The nation's emphasis on and requirement for ESG investments are amplified by the present focus on climate change and the scaling up of green energy projects. The country's worldwide promises, such as a 30% reduction in carbon emissions by 2050 and a 40% switch to non-fossil fuels by 2030, demonstrate its attention and the necessity of including ESG aspects in the investment process. The Indian government has recently actively pushed for incorporating ESG considerations into company operations through several reforms and legislation. A recent Economic Survey, which vehemently emphasized the need to simplify the finance for sustainable development (GOI, 2021) as the most recent development in this area, is readily apparent.

Some of the sustainability measures that Indian corporate leaders have engaged in are noteworthy. Participation of Indian businesses in the worldwide RE100 movement, which encourages businesses to go green, is one such endeavour. India's industrial power consumption accounts for more than 40% of the country's overall electricity consumption (Sarangi and Taghizadeh-Hesary, 2021); this is also very much in line with the commercial value proposition of corporate entities in India. A large number of Indian business organizations, including Infosys, Mahindra & Mahindra, Dalmia Cement, and Tata Motors, have voluntarily joined RE100 and committed to obtaining all of their energy needs from renewable sources (Mudaliar and Telang, 2020). Moreover, India has the second-largest population and a significant position in emerging markets. The irony is that among 180 countries, India ranked last in the environmental performance index 2022 (Yale, 2022). This shows the high need for a good framework of ESG from the regulatory side for the country's development in the modern world (Plastun *et al.*, 2020) and best ESG practices from the corporate lobby.

The contribution of this study is four-fold; first, it fills the gap by examining the linkage between ESG indicators and stock return in Indian markets, which has not been undertaken so far. Second, it uses the ESG score data of S&P Global, which, unlike other rating agencies, has given the ESG score based on materiality, which means more weight is given to the material factors of a firm of any industry. Third, this study accounts for macroeconomic variables' effects on the stock return, as previous studies examining ESG and firm performance have overlooked the macroeconomic variables' impacts. Fourth, this study also captures the effects of the pandemic crisis in examining the linkage between ESG indicators and stock returns.

This study finds a positive and significant relationship between the ESG indicators and the firm's stock return. This implies that complying with ESG factors pays the firm in a crisis period. Investors can reap the benefits of sustainable stocks. They can hold such stock in their portfolio for long-term performance. The government can think about more material ESG issues to make it compulsory for the firm to report in their sustainability reporting since it will ensure a better market price for the firms' stocks.

The structure of the rest of the article is as follows: Section 2 presents the theoretical and empirical literature in the field. Section 3 introduces data and methodology. Section 4 provides the empirical results, followed by a discussion in Section 5. Finally, Section 6 concludes the study.

2. Review of literature

A company's corporate social performance is a buffer against adverse market reactions and protects the company's stock (Lee, 2016). The supporters of sustainability reporting believed that boosting ESG disclosure would benefit the company and stakeholders. High levels of ESG performance aid businesses in maintaining steady earnings and less unstable stock prices (Lee, 2016). Reporting on sustainability is frequently improved due to efforts that improve internal and external decision-making, increase transparency, enforce financial stability, and enhance social sustainability (Eccles and Saltzman, 2011; Krzus, 2011). Additionally, it provides a complete view of a company's potential success by displaying financial and non-financial results (Jensen and Berg, 2012). Many recent studies have promoted the disclosure of ESG and argue that by highlighting the connections between financial and ESG, sustainable reports increase transparency. Steyn (2014) discovered that reporting on sustainability helps businesses perform better and earn more money. The ESG disclosure also improves a company's reputation and financial performance (Suresha *et al.*, 2022) and gives it a competitive advantage (Simnett *et al.*, 2009).

Several theories advocate the social responsibility of the firms, such as stakeholder theory, signalling theory, and legitimacy theory. The stakeholder idea holds that relationships between various stakeholders are related to a company's commitment to disclosing non-financial characteristics (Freeman, 1984). Businesses may successfully express their commitment to non-financial features, such as environmental sustainability, social responsibility, and ethical governance practices, by including stakeholders' viewpoints and concerns into sustainability reporting. Building long-term relationships with stakeholders and improving general social acceptance depend heavily on this connection between stakeholder expectations and ESG disclosures. According to Suchman (1995), there is an implicit social agreement between certain businesses and the society in which they operate. Companies employ transparency tactics to improve their overall societal acceptability. "A state or position obtained when an entity's value system is congruent with the value system of the larger social system to which the entity is a member" is the definition of legitimacy by Lindblom (1994). Therefore, this theory suggests that businesses interact with other businesses and agents in an open system, creating social contracts. Non-financial disclosures in business reports are one strategy for establishing credibility in this environment. Regarding this study, it can help to clarify how ESG disclosures affect stock returns by recognising how they influence perceived legitimacy and societal acceptability. The signalling concept was first put out by Spence (1973). It is primarily concerned with reducing the knowledge disparity between the two parties. When two parties have unequal access to information, and one party decides whether and how to release the information, it refers to those scenarios. Investor views and decision-making processes are influenced by a company's commitment to risk management, ethical business practices, and long-term sustainability, which is demonstrated by its ESG disclosures. This study attempts to objectively investigate the degree to which investors incorporate ESG concerns into their investing decisions and how these aspects contribute to stock return performance by analysing the signalling effect of ESG disclosures on company returns.

From a developed country's perspective, Velte (2017) shows that ESG performance has a significant and positive relationship with financial performance but not market performance. By analysing the three factors individually, the study finds that governance has more impact on financial performance. Buallay *et al.* (2020) demonstrate that the bank's ESG performance positively influences its accounting and market-based performance. Landi and Sciarelli (2019) argue that ESG performance has no impact on the abnormal returns of Italian firms. However, their study notes that the firms are interested in ESG reporting. Alareeni and Hamdan (2020) point out the positive relationship between ESG and the financial performance of companies listed in the S&P 500 index. Their research also notes that the environmental and social score has a negative relation with operational and financial performance but a positive one with market performance.

From an emerging market perspective, Wong *et al.* (2021) examine the relationship between ESG performance and the financial performance of Malaysian firms and highlight a positive relationship between the two. By using more measures of firm performance, Bodhanwala and Bodhanwala (2018) argue that a firm's sustainable performance positively affects its financial performance in India. In their analysis of Chinese listed firms, Chen and Xie (2022) show that ESG disclosure favourably affects corporate financial performance by luring ESG investors. Consistent with Velte (2017), Saygili *et al.* (2022) show the positive and substantial effect of governance-related disclosure on the financial performance of Turkish listed firms. Yilmaz's (2021) results indicate that the components of ESG score jointly have a positive relationship with the financial performance of non-financial firms of five emerging economies known as BRICS. Hence, we formulate our first hypothesis as follows:

H1. The ESG score significantly positively impacts the firm's stock return.

In addition to ESG performance, the return of the stock is driven by several factors of the firm. These variables include macroeconomy variables like the GDP (Abdo *et al.*, 2021), inflation (Fama and Schwert, 1977; Zhao, 2017), and firm-specific variables like the ROA, ROE, age, leverage, etc. (Trisnowati *et al.*, 2022). Moreover, during the crisis, investors fear losing their investments since stock returns are highly volatile during the crisis period (Erdem, 2020). The recent turmoil COVID-19 has welcomed many studies on ESG, firm performance, and financial market performance. Broadstock *et al.* (2021) point out that the higher the portfolios are inclined towards sustainability, the higher their performance will be. ESG factors kept firms safe from stock price crash risks. Although the influence of ESG is reduced in regular times, it plays a prominent role in crisis times. Firms' environmental and social performance saves them or determines higher stock returns during the pandemic than those with low sustainability performance (Abedifar *et al.*, 2022). Another study by Yoo *et al.* (2021) finds that the Environmental score has a high and positive (negative) relation with the stock return (volatility) during COVID-19. Rodionova *et al.* (2022) studied the linkage between the ESG tag and firms' stock's return performance. It advocates that, being an ESG stock, investors can reap the abnormal return from them. Another study by Chen *et al.* (2022) also concluded that US airline firms could use ESG indicators as a guard during crisis periods. The stock return volatility of better ESG firms reverts faster to equilibrium than that of those performing poorly in ESG. However, a study conducted by Nirino *et al.* (2022) shows that in periods of crisis, investors do not get any benefits from sustainability factors. A mixed result was highlighted by Feng *et al.* (2022), who found that CSR (ESG) has a positive (negative) relationship with stock returns. Based on these, we formulate our second hypothesis, which incorporates the socio-economic variables and the COVID-19 crisis:

H2. The impact of the ESG score on the stock return is significant in the presence of COVID-19, macroeconomic and financial variables.

3. Data and methodology

3.1 Data

This study covers only non-financial firms of the Nifty50 index since financial firms are subject to distinct regulations and accounting practices that complicate cross-firm comparisons. The Nifty 50, constituted by the top 50 stocks as per market capitalization, is a well-diversified index representing important economic sectors. Moreover, as of September 2023, the Nifty 50 Index accounts for around 59% of the free float market capitalization of the firms listed on the NSE. Hence, we found the Nifty50 index suitable for the study. The final sample for the study includes 39 Indian non-financial firms. This study's panel data (Balanced) comprises the annual time series from 2018 to 2022. Data for the analysis is gathered from various sources. ESG scores were retrieved from the S&P Global database; firm variables were taken from the Prowess IQ database managed by the Centre for Monitoring Indian Economy Pvt. Ltd. (CMIE), and macroeconomic variables were fetched from the RBI database on the Indian economy.

3.2 Methodology

3.2.1 Model specification. To study the relationship between ESG Score and firm-level stock return, the authors proposed the following model 1:

$$SR_{i,t} = \boldsymbol{\alpha_0} + \boldsymbol{\alpha_1} * ESGS_{i,t} + \boldsymbol{\varepsilon_{i,t}} \tag{1}$$

Here, SR represents the annual stock return, and ESGS denotes the firm's ESG score.

To see the impact of ESG score along with other variables, the authors augmented the above model and specified the following model 2:

$$\begin{aligned} \mathrm{SR}_{i,t} = {} & \boldsymbol{\alpha_0} + \boldsymbol{\alpha_1} * \mathrm{ESGS}_{i,t} + \boldsymbol{\alpha_2} * \mathrm{ROA}_{i,t} + \boldsymbol{\alpha_3} * \mathrm{ROE}_{i,t} + \boldsymbol{\alpha_4} * \mathrm{AGE}_{i,t} + \boldsymbol{\alpha_5} * \mathrm{SIZE}_{i,t} \\ & + \boldsymbol{\alpha_6} * \mathrm{LEV}_{i,t} + \boldsymbol{\alpha_7} * \mathrm{GDP}_t + \boldsymbol{\alpha_8} * \mathrm{INF}_t + \boldsymbol{\alpha_9} * \mathrm{D}_t + \boldsymbol{\varepsilon_{i,t}} \end{aligned} \tag{2}$$

Here, SR represents the annual stock return, ESGS denotes the ESG score of the firm, ROA is the return on assets, ROE is the return on equity, AGE means the age of the firm, SIZE represents the size of the firm, LEV stands for the leverage, GDP represents the gross domestic product, INF represents Inflation, D stands for the dummy variable used for the pandemic periods. All these variables are explained below in detail.

3.2.1.1 Definition of variables. *3.2.1.1.1 . Dependent variable.* Stock return: Stock return is computed using the following formula:

$$SR_t = LN(P_t/P_{t-1})$$

here SR_t is the return of stock at time t; P_t is the closing price at time t; P_{t-1} is the closing price at time t-1.

3.2.1.1.2 . Independent variables. ESG Score: The ESG score for 2017–2021 (annual frequency) has been collected from S&P Global. ESG score ratings vary from 0 to 100, with 100 denoting excellent ESG performance and 0 denoting poor ESG performance.

ROA: Return on assets is computed using the following formula:

$$ROA = \frac{Net\ Profits}{Total\ Assets}$$

ROE: Return on equity is computed using the following formula:

$$ROE = \frac{Net\ Profits}{Total\ Equity}$$

Age: Age represents the time between the sample year and the incorporation year of the firm.

Size: The firm's size is calculated by the natural logarithm of the firm's total assets at the end of the fiscal year.

Leverage: This is calculated as total long-term debts divided by the total assets at the end of the year.

GDP: Gross domestic product data is collected from the RBI database for the Indian economy.

Inflation: Inflation data for the Indian economy is also collected from the RBI database.

3.2.2 Estimation approach. The study employed panel data estimators due to the varied features of data, such as the number of firms and years. It is common practice to use pooled ordinary least squares (POLS) and fixed and random effect models; each model provides a different set of assumptions about the intercept, slope, and error components (Baltagi, 2008). We first applied POLS; however, POLS does not consider endogeneity and unobserved time-invariant effects, which leads to inconsistent results (Batra *et al.*, 2024). The unobserved time-invariant effects can be minimized using instrumental variables or estimation methods like fixed and random effects (Singh *et al.*, 2023). We, therefore, used the Lagrange Multiplier test (Breusch and Pagan, 1980) and the Hausman test (Hausman and Taylor, 1981) to choose the best-fit regression model. The Breuschand Pagan test determines the best model between POLS and random effect while choosing between fixed or random effects is evaluated by the Hausman test. To address the endogeneity problem and robustness, this study also considered GMM (Generalized method of moments). Literature emphasized two types of GMM – difference GMM propounded by (Arellano and Bond, 1991) and system GMM advocated by (Blundell and Bond, 1998). However, the difference is that the GMM technique has weak instruments and finite sample bias (Blundell and Bond, 1998), which makes it unsuitable for highly persistent data (Altaf and Shah, 2018). The system GMM estimator may cover all these issues. Therefore, this study is robust through a system GMM technique.

4. Results and analysis

4.1 Descriptive statistics

Panel A of Table 1 summarizes the descriptive statistics of the variables considered for the study. On average, our sample firms' ESG score is 41.85. The mean score indicates that the companies have satisfactory ESG performance and that there is still room to work on the ESG for Indian non-financial firms. The ESG score is hovering around the median. The minimum value of the ESG score is nine, and the maximum value is 85, indicating a significant variability in the ESG score of Indian non-financial firms. The stock return's mean and standard deviation values are 0.1224 and 0.4, respectively.

Panel A: descriptive statistics

Variable	Observation	Mean	SD	Min	Max
SR	195	0.1224	0.4	−0.8971	1.4464
ESGS	195	41.8513	22.6154	9	85
ROA	195	0.1130	0.1094	−0.1169	0.7624
ROE	195	0.1864	0.1957	−0.3964	1.0418
AGE	195	51.6923	24.0705	17	114
SIZE	195	13.04	1.2302	10.51	16.08
LEV	195	0.3771	0.5414	0	2.48
GDP	195	3.8678	5.501	−6.596	8.947
INF	195	141.29	8.783	130.3	155.28

Panel B: correlation matrix

Variables	SR	ESGS	ROA	ROE	AGE	SIZE	LEV	GDP	INF
SR	1.000								
ESGS	0.147	1.000							
ROA	−0.072	−0.206	1.000						
ROE	−0.093	−0.275	0.8	1.000					
AGE	−0.028	0.065	0.02	−0.029	1.000				
SIZE	−0.0441	0.290	−0.410	−0.361	0.0089	1.000			
LEV	0.0314	0.017	−0.476	−0.322	−0.246	0.5363	1.000		
GDP	0.4356	0.012	−0.0048	−0.0008	0.0133	0.0226	0.0541	1.000	
INF	0.260	0.189	−0.072	−0.0396	0.058	0.1200	0.069	−0.1215	1.000

Panel C: regression results for model 1

	POLS		Fixed effect		Random effect	
SR	Coefficient	Prob.	Coefficient	Coefficient	Prob.	Coefficient
C	0.0135	0.8216	−0.1749	0.111	0.0135	0.821
ESGS	0.0026**	0.0402	0.007***	0.005	0.002**	0.039
Number of observations	195		195		195	
R-squared	0.021		0.043		0.049	
F-stat/Wald chi-square test	4.27		8.02		4.27	
Prob (F-statistic)	0.0402		0.005		0.038	

Panel D: regression results for model 2

	POLS		Fixed effect		Random effect	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Constant	−4.490***	0.000	24.22***	0.000	−4.452***	0.000
ESGS	0.00227**	0.028	0.00224**	0.0261	0.0023**	0.025
ROA	0.1018	0.821	0.848	0.401	0.1634	0.728
ROE	−0.228	0.337	−1.234***	0.002	−0.2713	0.270
AGE	−0.0007	0.415	−0.6785***	0.000	−0.0007	0.449
SIZE	−0.0517**	0.020	−0.6915***	0.000	−0.0549**	0.018
LEV	0.0265*	0.0621	0.0339	0.831	0.032	0.563
GDP	0.0514***	0.000	0.0622***	0.000	0.051***	0.000
INF	0.0418***	0.000	0.1452***	0.000	0.041***	0.000
D	−0.760***	0.000	−0.441***	0.000	−0.759***	0.000

Table 1.
Empirical results

(continued)

Panel D: regression results for model 2	POLS		Fixed effect		Random effect	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Number of observations	195		195		195	
R-squared	0.489		0.64		0.54	
F-stat/Wald chi-square test	19.74		29.95		182.19	
Prob (F-statistic)	0.000		0.000		0.000	

Panel E: regression results: two-step system GMM

SR	Coefficient	p-value
L.SR	−0.099	0.186
ESGS	0.003**	0.025
ROA	0.156	0.928
ROE	−1.433**	0.021
AGE	−0.041*	0.056
SIZE	−0.897***	0.000
LEV	0.026	0.925
GDP	0.0486***	0.000
INF	0.0542***	0.000
D	−0.721***	0.000
Constant	2.910	0.139
Group/instrument	39/18	
Arellano-Bond		
AR (1) test	−3.208	
Probability	0.0013	
AR (2) test	0.512	
Probability	0.60	
Sargan test	9.477	
Probability	0.22	

Note(s): *, ** and *** denote significant at 10%, 5 and 1%, respectively
Source(s): Author's Own Calculation

Table 1.

4.2 Correlation matrix

Panel B of Table 1 shows the results of the correlation among variables. A non-financial company's stock returns rise in tandem with an increase in its ESG score. ROA, ROE, AGE, and SIZE have a negative association with stock return. Moreover, the firm's leverage is positively correlated with the stock return. Regarding macroeconomic indicators, results indicate that the stock return of non-financial firms is favourably associated with India's GDP and inflation.

Additionally, multicollinearity is not present because none of the correlation coefficient values among the explanatory variables is higher than 0.8. According to Hadi and Chatterjee (2015), multicollinearity is evident when the Variance Inflation Factor (VIF) value is more than 10. In our case, all VIF values are low, with a mean of 2.30, indicating the absence of multicollinearity.

4.3 Main results

The study shows the results of both models using POLS, fixed, and random effects estimators. To obtain the best regression results among the POLS, Fixed, and random effects estimators, we used the Lagrange Multiplier test and the Hausman test. In both models, the p-value of the Lagrange Multiplier test is greater than 5%, indicating that the fixed effect is appropriate. Similarly, the Hausman test suggests the p-value is less than 0.05; therefore, the fixed-effect estimator is more suitable.

First, we look at the impact of ESG score on stock return. The results presented in Panel C of Table 1 show that the coefficient on ESG score in all estimators (POLS, fixed, and random) significantly positively affects the stock return of the non-financial companies being examined). It explains that investors look at the ESG scores of firms while making their investment decisions.

We consider additional variables to see the impact of ESG scores in the presence of other variables. Panel D of Table 1 shows the estimators' results by taking the stock return as a dependent variable and firm variables (ROA, ROE, age, size, and leverage of the firm), macroeconomic variables (GDP and inflation index), and crisis as an independent variable along with ESG score. Similar to the above results, the findings in Panel D of Table 1 show that the ESG score significantly positively impacts the stock return in all estimators. Moreover, the results show that the ROE, age, size, and crisis period all have a negative impact on stock return. ROA, LEV, GDP, and inflation influence stock return positively, while the former is insignificant, and the latter (GDP and inflation index) are significant at a one percent level.

The positive impact of GDP on stock return shows that the rising income due to increased GDP encourages people to make stock market investments. ROA (operational measures) measures the profits earned on each rupee invested in assets. A higher ROA indicates the efficiency and productivity of a company in managing its assets to generate profits. ROE (financial measure) measures the profit earned on a shareholder's investment. Overall, we find a positive impact of operational measures and a negative impact of a financial performance measure on stock return. The positive effect of leverage shows investors' preference for value maximization based on the additional leverage. Reduced purchasing power due to increased inflation prompts investors to invest in value stocks, leading to high returns for such stocks. Furthermore, COVID-19 has brought turbulence in the stock markets worldwide. The COVID-19 pandemic has created uncertainty and fear in investors' minds, leading to a fall in stock prices.

4.4 Robustness checks: alternative estimation method- GMM (generalized method of moments)

The two-step system GMM approach suggested by (Arellano and Bover, 1995; Blundell and Bond, 1998) is applied for the robustness of our findings. The system GMM approach uses lagged values of explanatory variables as instruments for the equation in levels, and the estimates are robust to unobserved heterogeneity, simultaneity, and dynamic endogeneity (Batra *et al.*, 2023; Yarram and Adapa, 2023). The results indicate that a company's ESG score and ROA of a company positively impact a company's stock return, as documented in Panel E of Table 1. Macroeconomic indicators (GDP and inflation) also positively affect the stock returns of non-financial firms. However, stock return is impacted negatively by the ROE, age, and firm size. We employed the Arellano and Bond test (Arellano and Bond, 1991) to check serial correlation. To confirm that our model is free from serial correlation problems, the criteria are that AR(1) should be significant while AR(2) should be insignificant. Our results affirmed this (Panel E Table 1). The Sargan test evaluates the instruments' validity and looks for over-identification restrictions in the GMM estimation. The p-value of the Sargan test is insignificant, indicating that our model is valid and free from over-identified problems.

5. Discussion

The main objective of this study was to examine the relationship between ESG scores and stock returns of non-financial firms in India. Consistent with Ye *et al.* (2022) and Rodionova *et al.* (2022), this study's findings indicate a positive association between a firm's ESG score and its stock return. This suggests that investors consider firms' ESG performance when making investment decisions. A company's ESG performance can positively impact its stock returns through various channels; first, they are better equipped to manage risks such as environmental and social risks, which can lead to reduced operational costs and litigation costs. Second, they tend to have a better reputation among consumers, employees, and investors, leading to increased brand loyalty, improved employee morale, and greater investor confidence. Third, such firms tend to be more energy-efficient and resource-efficient, which can lead to cost savings. Fourth, firms with good ESG performance may have better access to capital from socially responsible investors and lower borrowing costs. In addition, their sustainable business model and better management quality also lead to better performance and higher stock returns. Furthermore, this paper also highlights that the materiality of the ESG factors captured by the ESG scoring methodology of S&P Global is an important driver for stock return. Hence, incorporating and addressing the real ESG issues for a sector is highly important since this will impact the investor's investment decisions.

Furthermore, consistent with Trisnowati *et al.* (2022) and Abdo *et al.* (2021), the study found that other firm-level variables such as Return on Assets (ROA), Leverage and Gross Domestic Product (GDP) had a positive impact on stock returns. However, Return on Equity (ROE), age, firm size, and crisis period had a negative effect. The positive relationship between GDP and stock returns can be attributed to rising income because increased GDP encourages people to invest in stock markets. In other words, a rise in the GDP leads to an increase in production, which raises the population's income level. However, the inflation level would also increase, and to get the maximum benefit from the increased income, people are tempted to invest in stock markets; hence, they choose to employ their funds in assets other than bank accounts. A higher ROA indicates a company's sound financial performance, efficiency, and growth prospects. Therefore, a company generating more profits per unit of assets, showing efficiency in utilizing its assets to generate profits, and having a growth prospectus from existing assets can lead to higher stock returns. However, a negative impact of ROE suggests that a financial measure of performance has a negative effect on stock returns (Narayan and Reddy, 2018). A high ROE may indicate that a company is using a significant amount of leverage or the firm is trading on equity, which in turn attracts more investors to fetch high returns on equity and more value to the firm; however, on the flip side, higher trading on equity leads, to high risk of financial distress. If a company becomes heavily leveraged and faces economic downturns or rising interest rates, it may struggle to meet its debt obligations, leading to lower stock returns. This may lead to investors becoming less willing to invest in the company, resulting in decreased stock returns.

Additionally, the paper found that inflation positively impacted stock returns, which can be attributed to the fact that reduced purchasing power due to increased inflation prompts investors to invest in value stocks, leading to high returns for such stocks. Fama and Schwert (1977), Zhao (2017) also found stocks to be a good hedge against inflation. Several other reasons can also be noteworthy to understand this positive relationship; firstly, inflation can increase nominal stock returns, as stock prices tend to increase with inflation. When the general price level rises, companies can increase prices to maintain their profit margins, leading to higher earnings and, ultimately, higher stock returns. Secondly, inflation can also decrease real interest rates, making stocks more attractive relative to bonds. When real interest rates are low, investors may be more likely to invest in stocks, which can lead to higher stock returns.

The negative impact of crisis periods such as the COVID-19 pandemic on stock returns supported by Dharani *et al.* (2022a) and Mishra *et al.* (2020) can be attributed to the sharp decline in economic activity due to lockdowns, travel restrictions, and other measures to contain the spread of the virus. This has led to a decrease in corporate earnings, which has resulted in a decline in stock prices. Secondly, the pandemic has created significant uncertainty and fear among investors, which has led to increased volatility in stock markets. This has resulted in a decline in stock prices as investors have become more risk-averse.

Nevertheless, the study found that the average ESG score for Indian non-financial firms is 41.85. This shows room for improvement in their ESG performance. To enhance their ESG performance, firms can consider incorporating material ESG factors – those that significantly impact financial performance and long-term sustainability. One approach is to conduct a thorough materiality analysis to identify critical ESG issues relevant to the company and stakeholders. This helps prioritize ESG efforts and focus on essential business concerns. Additionally, integrating ESG considerations into strategic decision-making, such as risk management, target setting, and regular progress monitoring, can improve ESG performance.

Results show that ESG status has a signalling effect on stock returns overall, adding to the literature based on signalling ideas. Companies with good ESG practices that emphasize stakeholder interests have higher stock prices. Through this viewpoint, our analysis supports stakeholder theory. Additionally, the legitimacy hypothesis lends credence to the idea that a company's ESG status is recognized by society in terms of stock returns.

6. Conclusion and implications

Companies now place a greater emphasis on ESG initiatives to rebuild their market reputation by acting socially responsibly. High levels of ESG performance aid businesses in maintaining steady earnings and less unstable stock prices (Lee, 2016). However, the shareholders do not always welcome increased expenditures in environmental and social standards due to the additional expenses involved. Investors may penalize a company by withdrawing their investment funds from the stock market, which may result in a rapid decrease in the value of the shares and the firm's earnings. As a result, this study aims to investigate how ESG factors affect the stock return performance of non-financial enterprises.

The data for the different variables were retrieved from multiple sources, such as the S&P global database, which was used for ESG scores, and closing stock prices and firm-level variables' data were extracted from the Prowess IQ database. This study used the pooled and panel regression model, and for robustness, it adopted the GMM.

The study finds that ESG scores significantly impact stock returns. The impact holds even when other macroeconomic variables and firm performance variables are captured in the model. It is interesting to note that the results reflect the significance of the ESG indicator more than the financial or operational performance variables. Another significant finding of the study is that while accounting for the COVID-19 crisis, it shows the negative effect of the pandemic on stock returns. However, in the overall model, ESG indicators still positively and significantly impact stock returns. Interestingly, the results reflect the significance of ESG indicators more than the financial or operational performance variables. The findings suggest that investors consider firms' ESG scores while making investment decisions.

This study has significant theoretical ramifications, especially in stakeholder, legitimacy, and signalling theory. A significant contribution to the literature on signalling theory has been made by the positive association that has been shown between ESG ratings and stock returns. This study supports the idea that ESG efforts may be reliable indicators of a company's overall health and future prospects, impacting investor views and ensuing market behaviours by showing that companies with strong ESG practices are rewarded with increased stock returns. Furthermore, the research places itself within the context of stakeholder theory, given that the fundamental basis of ESG practices is an innate dedication to attending to the interests of many stakeholders. The relationship that has been shown between stock returns and ESG scores is positive, which supports the notion that stakeholder-oriented company practices have a favourable impact on financial results. Additionally, the study has connections to legitimacy theory because it falls under the purview of organizational legitimacy, given that good ESG practices are rewarded with stock gains. According to the research, businesses that follow ESG guidelines demonstrate their expertise and conform to social norms, enhancing their legitimacy and, as a result, improving their financial success. In conclusion, this work adds to the body of knowledge in signalling theory, legitimacy theory, and stakeholder theory in that order.

The study's practical implications provide enterprises, governments, and investors with concrete methods to improve their ESG policies and decision-making procedures. Creating thorough ESG plans that are completely integrated into a company's primary business goals is crucial. Setting quantifiable ESG targets, creating strong risk management frameworks that consider ESG considerations, and actively interacting with stakeholders to comprehend and resolve their unique ESG problems are all necessary to achieve this. Businesses may also use innovation and technology to enhance their ESG performance. For example, they might invest in digital tools and sustainable technologies to monitor and report ESG measures more effectively.

Policymakers must foster an atmosphere that encourages ESG reporting and compliance. Their main objective should be to create and implement precise legislative frameworks that require ESG disclosures and standards across all sectors of the economy. Furthermore, promoting accurate, consistent, and transparent ESG reporting is crucial by offering resources and capacity-building activities. To achieve harmonisation of ESG reporting standards and procedures, data accessibility, and quality assurance, cooperation with industry experts, standard-setting agencies, and international organisations may be necessary.

A systematic method is necessary for investors to include ESG considerations in their investing decision-making processes. To assess investment prospects according to environmental impact, social responsibility, and governance standards, investors might create customised ESG criteria and benchmarks. Reducing risks and enhancing the long-term performance of investments entails carrying out comprehensive ESG risk assessments and implementing the results into portfolio management techniques. Additionally, through proxy voting, shareholder lobbying, and joint efforts with industry groups and regulators to advance responsible investment practices, investors may actively interact with firms on ESG problems.

Although this analysis sheds light on the link between stock returns and ESG factors during the COVID-19 pandemic, several limitations should be taken into account. First, the selection of 39 non-financial companies from the Nifty-50 index and the study's period of 2018–2021 may have limited the findings' generalizability. Further research over longer timeframes and larger sample sizes is necessary to improve robustness. Larger, more varied samples and sophisticated econometric methods, including instrumental variable approaches, might further help mitigate possible sample selection bias and endogeneity problems. Furthermore, using third-party databases to obtain ESG scores raises questions regarding measurement consistency and disclosure quality, indicating the necessity of conducting sensitivity assessments using other rating systems.

Future research avenues include sector-specific studies to gain insight into industry-specific subtleties and longitudinal analyses to monitor the changing relationship between ESG factors and stock returns over time. Qualitative approaches like case studies and interviews, which might be used in conjunction with quantitative analysis, may also help gain an in-depth understanding of underlying mechanisms and investor perceptions. Finally, comparative research across international markets would help shape best practices in regulatory frameworks, investment strategies, and ESG reporting by providing insights into cross-national differences in ESG integration.

References

Abdo, K.K., Al-Qudah, H.A.M., Al-Qudah, L.A. and Al Qudah, M. Z. (2021), "The effect of economic variables (workers 'diaries abroad, bank deposits, gross domestic product, and inflation) on stock returns in the Amman Financial Market from 2005/2018", *Journal of Sustainable Finance and Investment*, Vol. 13 No. 1, pp. 59-72, doi: 10.1080/20430795.2021.1883384.

Abedifar, P., Bouslah, K., Neumann, C. and Tarazi, A. (2022), "Resilience of environmental and social stocks under stress: lessons from the COVID-19 pandemic", *Financial Markets, Institutions and Instruments*, Vol. 32 No. 2, pp. 23-50, doi: 10.1111/FMII.12166.

Al-Tamimi, H.A.H., Alwan, A.A. and Rahman, A.A.A. (2011), "Factors affecting stock prices in the UAE financial markets", *Journal of Transnational Management*, Vol. 16 No. 1, pp. 3-19, doi: 10.1080/15475778.2011.549441.

Alareeni, B.A. and Hamdan, A. (2020), "ESG impact on performance of US S&P 500-listed firms", *Corporate Governance (Bingley)*, Vol. 20 No. 7, pp. 1409-1428, doi: 10.1108/CG-06-2020-0258.

Altaf, N. and Shah, F.A. (2018), "Ownership concentration and firm performance in Indian firms: does investor protection quality matter?", *Journal of Indian Business Research*, Vol. 10 No. 1, pp. 33-52, doi: 10.1108/JIBR-01-2017-0009/FULL/XML.

Arellano, M. and Bond, S. (1991), "Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations", *The Review of Economic Studies*, Vol. 58 No. 2, pp. 277-297, doi: 10.2307/2297968.

Arellano, M. and Bover, O. (1995), "Another look at the instrumental variable estimation of error-components models", *Journal of Econometrics*, Vol. 68 No. 1, pp. 29-51, doi: 10.1016/0304-4076(94)01642-D.

Baltagi, B.H. (2008), "Forecasting with panel data", *Journal of Forecasting*, Vol. 27 No. 2, pp. 153-173, doi: 10.1002/FOR.1047.

Batra, S., Yadav, M., Jindal, I., Saini, M. and Kumar, P. (2023), "Stabilizing or destabilizing: the effect of institutional investors on stock return volatility in an emerging market", *Multinational Business Review*, Vol. ahead-of-print No. ahead-of-print, doi: 10.1108/MBR-04-2023-0052.

Batra, S., Yadav, M. and Saini, M. (2024), "Foreign investors and stocks' volatility: evidence from COVID-19", *International Journal of Social Economics*, Vol. 51 No. 4, pp. 485-499.

Blundell, R. and Bond, S. (1998), "Initial conditions and moment restrictions in dynamic panel data models", *Journal of Econometrics*, Vol. 87 No. 1, pp. 115-143, doi: 10.1016/S0304-4076(98)00009-8.

Bodhanwala, S. and Bodhanwala, R. (2018), "Does corporate sustainability impact firm profitability? Evidence from India", *Management Decision*, Vol. 56 No. 8, pp. 1734-1747, doi: 10.1108/MD-04-2017-0381.

Breusch, T.S. and Pagan, A.R. (1980), "The Lagrange multiplier test and its applications to model specification in econometrics", *The Review of Economic Studies*, Vol. 47 No. 1, pp. 239-253, doi: 10.2307/2297111.

Broadstock, D.C., Chan, K., Cheng, L.T.W. and Wang, X. (2021), "The role of ESG performance during times of financial crisis: evidence from COVID-19 in China", *Finance Research Letters*, Vol. 38 June 2020, 101716, doi: 10.1016/j.frl.2020.101716.

Buallay, A., Fadel, S.M., Alajmi, J. and Saudagaran, S. (2020), "Sustainability reporting and bank performance after financial crisis: evidence from developed and developing countries", *Competitiveness Review*, Vol. 31 No. 4, pp. 747-770, doi: 10.1108/CR-04-2019-0040.

Chen, Z. and Xie, G. (2022), "ESG disclosure and financial performance: moderating role of ESG investors", *International Review of Financial Analysis*, Vol. 83, 102291, doi: 10.1016/j.irfa.2022.102291.

Chen, C.da, Su, C.H.(J.) and Chen, M.H. (2022), "Understanding how ESG-focused airlines reduce the impact of the COVID-19 pandemic on stock returns", *Journal of Air Transport Management*, Vol. 102, 102229, doi: 10.1016/J.JAIRTRAMAN.2022.102229.

Dharani, M., Hassan, M.K., Huda, M. and Abedin, M.Z. (2022a), "Covid-19 pandemic and stock returns in India", *Journal of Economics and Finance*, Vol. 47 No. 1, pp. 251-266, doi: 10.1007/s12197-022-09586-8.

Dharani, M., Hassan, M.K., Rabbani, M.R. and Huq, T. (2022b), "Does the Covid-19 pandemic affect faith-based investments? Evidence from global sectoral indices", *Research in International Business and Finance*, Vol. 59, 101537, doi: 10.1016/j.ribaf.2021.101537.

Eccles, R.G. and Saltzman, D. (2011), "Achieving sustainability through integrated reporting", *Stanford Social Innovation Review*, Vol. 9 No. 3, pp. 56-61.

Erdem, O. (2020), "Freedom and stock market performance during Covid-19 outbreak", *Finance Research Letters*, Vol. 36, 101671, doi: 10.1016/J.FRL.2020.101671.

Fama, E.F. and Schwert, G.W. (1977), "ASSET returns and inflation", *Journal of Financial Economics*, Vol. 5 No. 2, pp. 115-146, doi: 10.1016/0304-405x(77)90014-9.

Feng, G.F., Long, H., Wang, H.J. and Chang, C.P. (2022), "Environmental, social and governance, corporate social responsibility, and stock returns: what are the short- and long-run relationships?", *Corporate Social Responsibility and Environmental Management*, Vol. 29 No. 5, pp. 1884-1895, doi: 10.1002/CSR.2334.

Freeman, R.E. (1984), *A Stakeholder Approach to Strategic Management*, Pitman Publishing, Boston, doi: 10.1002/jctb.619.

GOI (2021), *Economic Survey*, Ministry of Finance, New Delhi.

Gürlek, M. and Kılıç, İ. (2021), "A true friend becomes apparent on a rainy day: corporate social responsibility practices of top hotels during the COVID-19 pandemic", *Current Issues in Tourism*, Vol. 24 No. 7, pp. 905-918, doi: 10.1080/13683500.2021.1883557.

Hadi, A. and Chatterjee, S. (2015), *Regression Analysis by Example*, available at: https://books.google.com/books?hl=en&lr=&id=zyjWBgAAQBAJ&oi=fnd&pg=PP1&dq=%22Regression+analysis+by+example%22&ots=O_gHfN1SlT&sig=6AaMF47qcx-p23_Y2M-N7Vt_njs

Hausman, J.A. and Taylor, W.E. (1981), "Panel data and unobservable individual effects", *Econometrica*, Vol. 49 No. 6, p. 1377, doi: 10.2307/1911406.

Impact Investor Council (IIC) and Asha Impact (2020), *The India Impact Investing Story: Assessing a Decade of Capital Plus Innovation for Impact (2010-2019)*.

Jensen, J.C. and Berg, N. (2012), "Determinants of traditional sustainability reporting versus integrated reporting. An institutionalist approach", *Business Strategy and the Environment*, Vol. 21 No. 5, pp. 299-316, doi: 10.1002/bse.740.

Krzus, M.P. (2011), "Integrated reporting: if not now, when", *Zeitschrift Für Internationale Rechnungslegung*, Vol. 6 No. 6, pp. 271-276.

Landi, G. and Sciarelli, M. (2019), "Towards a more ethical market: the impact of ESG rating on corporate financial performance", *Social Responsibility Journal*, Vol. 15 No. 1, pp. 11-27, doi: 10.1108/SRJ-11-2017-0254.

Lee, M.-T. (2016), "Corporate social responsibility and stock price crash risk: evidence from an Asian emerging market", *Managerial Finance*, Vol. 42 No. 10, pp. 963-979, doi: 10.1108/mf-10-2015-0278.

Lindblom, C.K. (1994), "The implications of organizational legitimacy for corporate social performance and disclosure", *Critical Perspectives on Accounting Conference*, New York, 1994.

Mishra, A.K., Rath, B.N. and Dash, A.K. (2020), "Does the Indian financial market nosedive because of the COVID-19 outbreak, in comparison to after demonetisation and the GST?", *Emerging Markets Finance and Trade*, Vol. 56 No. 10, pp. 2162-2180, doi: 10.1080/1540496X.2020.1785425.

Moynihan, R., Sanders, S., Michaleff, Z.A., Scott, A.M., Clark, J., To, E.J., Jones, M., Kitchener, E., Fox, M., Johansson, M., Lang, E., Duggan, A., Scott, I. and Albarqouni, L. (2021), "Impact of COVID-19 pandemic on utilisation of healthcare services: a systematic review", *BMJ Open*, Vol. 11 No. 3, e045343, doi: 10.1136/BMJOPEN-2020-045343.

Mudaliar, A. and Telang, S. (2020), *Corporate Renewable Energy Sourcing: The Way to 100% Renewable Electricity in India*, available at: https://www.there100.org/our-work/news/corporate-renewable-energy-sourcing-way-100-renewable-electricity-india

Narayan, P. and Reddy, Y.V. (2018), "Impact of financial performance indicators on stock returns: evidence from India", *International Journal of Business and Society*, Vol. 19 No. 3, pp. 762-780, available at: https://www.researchgate.net/publication/329944012

Nirino, N., Petruzzella, F., Alam, G.M. and Campobasso, F. (2022), "Can sustainable practices protect investors during financial market instability? A multi-sector analysis during the COVID-19 pandemic", *Management Decision*, Vol. 60 No. 10, pp. 2875-2894, doi: 10.1108/MD-12-2021-1654/FULL/PDF.

Plastun, A., Makarenko, I., Khomutenko, L., Osetrova, O. and Shcherbakov, P. (2020), "SDGs and ESG disclosure regulation: is there an impact? Evidence from top-50 world economies", *Problems and Perspectives in Management*, Vol. 18 No. 2, pp. 231-245, doi: 10.21511/PPM.18(2).2020.20.

Rodionova, M., Skhvediani, A. and Kudryavtseva, T. (2022), "ESG as a booster for logistics stock returns—evidence from the US stock market", *Sustainability*, Vol. 14 No. 19, 12356, doi: 10.3390/SU141912356.

Saini, M., Aggarwal, V., Dhingra, B., Kumar, P. and Yadav, M. (2023a), "ESG and financial variables: a systematic review", *International Journal of Law and Management*, Vol. 65 No. 6, pp. 663-682, doi: 10.1108/IJLMA-02-2023-0033/FULL/PDF.

Saini, M., Dhingra, B. and Yadav, M. (2023b), "ESG risk and financial performance of the Indian financial firms", *International Journal of Governance and Financial Intermediation*, Vol. 1 No. 1, p. 1, doi: 10.1504/IJGFI.2022.10052918.

Sarangi, G.K., and Taghizadeh-Hesary, F. (2021), "Rooftop solar development in India: measuring policies and mapping business models", ADBI Working Paper 1256.

Saygili, E., Arslan, S. and Birkan, A.O. (2022), "ESG practices and corporate financial performance: evidence from Borsa Istanbul", *Borsa Istanbul Review*, Vol. 22 No. 3, pp. 525-533, doi: 10.1016/j.bir.2021.07.001.

Simnett, R., Vanstraelen, A. and Chua, W.F. (2009), "Assurance on sustainability reports: an international comparison", *The Accounting Review*, Vol. 84 No. 3, pp. 937-967, doi: 10.2308/accr.2009.84.3.937.

Singh, A. (2020), "COVID-19 and safer investment bets", *Finance Research Letters*, Vol. 36, May, 101729, doi: 10.1016/j.frl.2020.101729.

Singh, J., Singhania, S. and Aggrawal, D. (2023), "Does board gender diversity impact financial performance? Evidence from the Indian IT sector", *Society and Business Review*, Vol. 18 No. 1, pp. 51-70, doi: 10.1108/SBR-09-2021-0164/FULL/XML.

Sood, K., Arijit, K., Pathak, P. and Purohit, H.C. (2023), "Did ESG portfolio augment investors' wealth during Covid19? Evidence from Indian stock market", *Sustainability Accounting, Management and Policy Journal*, Vol. 14 No. 5, pp. 922-944, doi: 10.1108/SAMPJ-02-2022-0087/FULL/XML.

Spence, A. (1973), "Job marketing signaling", *Quarterly Journal of Economics*, Vol. 87 No. 3, pp. 355-3731, doi: 10.2307/1882010.

Steyn, M. (2014), "Organisational benefits and implementation challenges of mandatory integrated reporting: perspectives of senior executives at South African listed companies", *Sustainability Accounting, Management and Policy Journal*, Vol. 5 No. 4, pp. 476-503, doi: 10.1108/sampj-11-2013-0052.

Suau-Sanchez, P., Voltes-Dorta, A. and Cugueró-Escofet, N. (2020), "An early assessment of the impact of COVID-19 on air transport: just another crisis or the end of aviation as we know it?", *Journal of Transport Geography*, Vol. 86, 102749, doi: 10.1016/J.JTRANGEO.2020.102749.

Suchman, M.C. (1995), "Managing legitimacy: strategic and institutional approaches", *Academy of Management Review*, Vol. 20 No. 3, pp. 571-610, doi: 10.2307/258788.

Suresha, B., Srinidhi, V.R., Verma, D., Manu, K.S., Krishna, T.A. (2022), "The impact of ESG inclusion on price, liquidity and financial performance of Indian stocks: evidence from stocks listed in BSE and NSE ESG indices", *Investment Management and Financial Innovations*, Vol. 19 No. 4, pp. 40-50, doi: 10.21511/IMFI.19(4).2022.04.

Trisnowati, Y., Achsani, N.A., Sembel, R. and Andati, T. (2022), "The effect of ESG score, financial performance, and macroeconomics on stock returns during the pandemic era in Indonesia", *International Journal of Energy Economics and Policy*, Vol. 12 No. 4, pp. 166-172, doi: 10.32479/ijeep.13212.

Velte, P. (2017), "Does ESG performance have an impact on financial performance? Evidence from Germany", *Journal of Global Responsibility*, Vol. 8 No. 2, pp. 169-178, doi: 10.1108/jgr-11-2016-0029.

Wong, W.C., Batten, J.A., Ahmad, A.H., Mohamed-Arshad, S.B., Nordin, S. and Adzis, A.A. (2021), "Does ESG certification add firm value?", *Finance Research Letters*, Vol. 39, November 2019, 101593, doi: 10.1016/j.frl.2020.101593.

Yadav, M. and Saini, M. (2023), "Environmental, social and governance literature: a bibliometric analysis", *International Journal of Managerial and Financial Accounting*, Vol. 15 No. 2, pp. 231-254.

Yale (2022), "Environmental performance index", *Yale Center for Environmental Law and Policy*, available at: https://epi.yale.edu/epi-results/2022/component/epi

Yarram, S.R. and Adapa, S. (2023), "Gender diversity of directors and financial performance: is there a business case?", *International Journal of Managerial Finance*, Vol. 20 No. 1, pp. 147-167, doi: 10.1108/IJMF-01-2022-0035/FULL/PDF.

Ye, C., Song, X. and Liang, Y. (2022), "Corporate sustainability performance, stock returns, and ESG indicators: fresh insights from EU member states", *Environmental Science and Pollution Research*, Vol. 29 No. 58, pp. 87680-87691, doi: 10.1007/S11356-022-20789-8/TABLES/9.

Yilmaz, I. (2021), "Sustainability and financial performance relationship: international evidence", *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 17 No. 3, pp. 537-549, doi: 10.1108/WJEMSD-10-2020-0133.

Yoo, S., Keeley, A.R. and Managi, S. (2021), "Does sustainability activities performance matter during financial crises? Investigating the case of COVID-19", *Energy Policy*, Vol. 155, March, 112330, doi: 10.1016/j.enpol.2021.112330.

Zhao, L. (2017), "Stock returns under hyperinflation: evidence from China 1945–48", *China Economic Review*, Vol. 45, pp. 155-167, doi: 10.1016/j.chieco.2017.07.003.

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