ISSN 1998-6041

ENVIRONMENTAL ECONOMICS

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“Revealing the contribution of corporate sustainability practices to financial performance: Case of BIST Sustainability 25 Index companies”

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ARTICLE INFO	Yuliia Serpeninova, Serhii Lehenchuk, Nataliya Zdyrko, Dmytro Zakharov and Olena Podolianchuk (2024). Revealing the contribution of corporate sustainability practices to financial performance: Case of BIST Sustainability 25 Index companies. *Environmental Economics*, *15*(1), 118-129. doi:10.21511/ee.15(1).2024.10
DOI	http://dx.doi.org/10.21511/ee.15(1).2024.10
RELEASED ON	Wednesday, 15 May 2024
RECEIVED ON	Tuesday, 05 March 2024
ACCEPTED ON	Tuesday, 07 May 2024

JOURNAL	"Environmental Economics"
ISSN PRINT	1998-6041
ISSN ONLINE	1998-605X
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
32	0	4

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REVEALING THE CONTRIBUTION OF CORPORATE SUSTAINABILITY PRACTICES TO FINANCIAL PERFORMANCE: CASE OF BIST SUSTAINABILITY 25 INDEX COMPANIES

Received on: 5th of March, 2024
Accepted on: 7th of May, 2024
Published on: 15th of May, 2024

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Conflict of interest statement:
Author(s) reported no conflict of interest

Abstract

The purpose of the paper is to study the impact of corporate sustainability practices on the financial performance of companies included in the BIST Sustainability 25 Index. To assess the efficiency and quality of corporate sustainability, general (ESG Disclosure Index) and partial (Environmental Disclosure Index, Social Disclosure Index, and Corporate Governance Disclosure Index) indices were used, calculated based on content analysis of sustainability reports. Based on the two given types of indices and four types of financial performance indicators (return on assets, return on equity, assets turnover ratio, and Tobin's Q), two types of regression models (GEN models and PART models) were built, and eight analytical models were examined. Company size and leverage were included as control variables in each model. The regression analysis results were contradictory, partially confirming the conclusions of some scientists and refuting the findings of others. A study of GEN models revealed that companies implementing more effective general corporate sustainability practices have a significant positive impact only on return on equity; as for other measures (return on assets, assets turnover ratio, and Tobin's Q), an insignificant relationship between them and ESG Disclosure Index was found. Results of the PART models analysis revealed a significant positive effect of the Social Disclosure Index on return on equity and assets turnover ratio and a negative relationship between the Corporate Governance Disclosure Index and assets turnover ratio. Using control variables for the two types of models showed a significant negative effect of company size on Tobin's Q.

Keywords corporate sustainability practices, sustainable reporting, financial performance, ESG companies, emerging countries

JEL Classification M41, Q56

INTRODUCTION

The crucial factors influencing the long-term development of the economy and society are financial performance measures and sustainable development. While financial performance traditionally measures growth, profitability, and value creation, sustainable development covers the economic, social, and environmental aspects of business operations. In recent years, there has been growing recognition of the relationship between a company's financial success and its compliance with the Sustainable Development Goals (SDGs). As a result, the sustainability literature is replete with studies examining the nature and impact of sustainability practices on financial performance, especially for companies in emerging countries.

http://dx.doi.org/10.21511/ee.15(1).2024.10

Based on the principles of the stakeholder theory, companies are responsible for creating value for various types of stakeholders, thereby transforming the purpose of the company into practical value (Valentinov, 2023; Vysochan et al., 2024). This theory emphasizes that businesses should focus on creating value not only for customers but also for employees, investors, borrowers, suppliers and contractors, governmental agencies, and local communities. However, companies can also use corporate sustainability practices as a cover for illegal actions against certain groups of stakeholders and as a camouflage, symbolic, and marketing tool (Gallego-Álvarez et al., 2010; Nicolò et al., 2023) to imitate their SDG aspirations.

The importance of sustainable development in companies' activities goes beyond purely altruistic actions aimed to improve the world since the implementation of sustainability practices is inextricably linked to value creation. This position is consistent with residual and integrated approaches to understanding the essence of sustainability practices. According to the residual approach, corporate sustainability practices are activities that occur only after the company has made a profit and are a form of compensation to society for losses after determining the financial results of the activity. An integrated approach, in contrast, integrates economic, social, environmental, and ethical considerations in the decision-making process from the outset. This emphasizes the importance of reconciling economic objectives with social and environmental responsibility and reflects a more holistic view of corporate sustainability performance and responsibility. In contrast to the residual approach, with an integrated approach, enterprises use a model of operation that aims to ensure economic development by taking into account the environmental and social consequences of company activities.

Companies' achievement of the SDGs through corporate sustainability practices is often seen as an opportunity to redefine and increase their contribution to sustainable value creation. There are many benefits for various stakeholder groups, such as increased production efficiency, increased customer satisfaction, cost reduction, improved market reputation, development of corporate innovation, and increased awareness of sustainability practices. However, in order for companies to reap the full benefits of implementing corporate sustainability practices, it is important that they are recognized by external stakeholders, which leads them to publish sustainability reports. Therefore, sustainability reporting should be considered as one of the effective corporate stakeholder management tools, which will ensure the maximization of financial and sustainable performance in both short and long term.

1. LITERATURE REVIEW

Analysis of the impact of corporate sustainability practices on financial performance has gained significant popularity while studying sustainable development issues and has become especially relevant with the adoption of SDGs by the UN in 2015.

To achieve SDGs and ensure their own organizational legitimacy from the perspective of various members of society, companies are forced to implement sustainability initiatives and practices and publish sustainability reports or similar means of disclosure (ESG reports, integrated reports, corporate responsibility reports, etc.). Such reports should substantiate stakeholders' expectations regarding the response and resolution of environmental and social problems arising in company operations (Bulavinova et al., 2021; Hyk et al., 2023). This should ultimately contribute to improving the overall financial performance by reducing the costs of raising capital, increasing the level of customer satisfaction and loyalty, improving risk management, and sustainable reputation.

Two directions of scientific research in this area can be distinguished. Representatives of the first direction determine the role of companies in achieving and fulfilling the goals and principles of sustainable development to ensure their financial performance. By disclosing SDG achievements in dedicated reports, companies enable stakeholders to better understand the value creation process (Jensen & Berg, 2012). Such studies view sustainable development practices as an intermediate link

to achieving the SDGs and, therefore, focus on managing this process. Scholars have come to conflicting conclusions regarding the impact of individual SDGs on different types of financial performance measures. Thus, while Ramos et al. (2022) did not find a relationship between sustainability goals and company performance, a number of researchers have found a significant relationship between these two types of variables, although this relationship is multidirectional (Betti et al., 2018; Hoepner et al., 2020; Izzo et al., 2020; Vorontsova et al., 2022; Situm et al., 2021).

In general, scholars also note a dearth of empirical research that identifies and explains the economic impacts of SDG implementation on financial performance, especially in emerging countries. This is due to both the understudied nature of SDGs (Muhmad & Muhamad, 2021) and the difficulty of making generalizations and assumptions about the existence of mediated relationships across different organizational contexts (Grewatsch & Kleindienst, 2017).

Representatives of the second direction choose sustainability practices aimed at environmental and economic health and vitality as the main object of research and study their direct role in achieving financial performance. The main way to identify companies' sustainability practices is to conduct a qualitative analysis of various types of additional forms of accounting disclosure. The analysis of similar studies in emerging countries revealed ambiguous and contradictory results, which are characterized by both different strengths and different directions of the influence of sustainability practices on different types of financial performance measures.

Thus, Önder (2018) applied a regression analysis of the impact of institutional sustainability on the profitability of 33 Turkish companies listed on the Istanbul Stock Exchange (ISE) in 2015. The study found that ROA significantly depends only on some normatively recorded sustainability practices. Sustainability practices were assessed using overall sustainability indicators (OSR) and subcategory sustainability scores (Governmental, Environmental, and Commercial). Specifically, only OSR and Environmental scores were found to have a statistically significant and positive relationship. There was also a significant positive effect of leverage on ROA in the overall and subcategory models used, although no such effect was observed for the control variable size.

Doğan and Kevser (2021) examined the performance of Turkish banks and found no relationship between financial performance indicators (ROA and ROE) and sustainability scores based on a qualitative analysis of sustainability reports standardized by GRI. Aydoğan and Kara (2023) refuted these findings for 58 Turkish non-banking companies listed on the ISE from 2015 to 2021. They found a significant relationship between sustainability practices and ROA.

A. Lunawat and D. Lunawat (2022), sampling NSE 500 and NSE 100 ESG-listed Indian firms for 2012–2019, found that conventional (non-ESG) companies that implement sustainability practices have better financial performance (ROA and ROE) and ESG companies only have a positive relationship with ROA. The sustainability practices of ESG companies positively affect Tobin's Q, but for non-ESG companies, such practices do not play any role in driving market efficiency.

Kılıç et al. (2022) analyzed the impact of sustainability indicators on the financial performance of Turkish companies (ROA, ROE, ROS, and MV/BV) included in the BIST Sustainability Index. The study found a significant effect of the moderating variable (SP × SIZE) on ROA and no significant relationship between sustainability practices and other financial performance indicators (ROE, ROS, and MV/BV).

Abbas et al. (2023) examined the role of sustainability practices in driving financial performance in a sample of 131 IPO-listed companies in Bursa Malaysia from 2007 to 2017. They found a positive relationship between social and environmental practices and corporate financial performance. Similar findings were also obtained by Fauzi (2022), who found a significant positive effect of environmental performance on ROE by studying 64 companies listed on the Indonesia Stock Exchange from 2016 to 2018. Similarly, Li et al. (2024) examined panel data from Chinese-listed companies for 2017–2022. The study found that overall corporate social re-

http://dx.doi.org/10.21511/ee.15(1).2024.10

sponsibility performance indicator (CSRCI) and company size (SIZE) have a significant positive impact on ROA.

Dincer et al. (2023) examined the impact of sustainability reports on financial performance measures (ROA and Tobin's Q) of 46 Turkish companies listed on the ISE for 2016–2020. They found a significant positive effect on ROA and its absence in relation to Tobin's Q. It was also found that company size significantly negatively affects ROA and Tobin's Q. This is contrary to the findings of Soriya and Rastogi (2023), who, analyzing 93 integrated annual reports of Indian companies for 2017–2020, found a positive significant relationship between size and sustainability practice score.

Xu and Zhu (2024) assessed the impact of the ESG score on corporate financial performance by sampling Chinese companies (A-share listed companies in Shanghai and Shenzhen) for 2009–2021. They identified a positive significant relationship between the ESG score and ROA and ROS. At the same time, the negative role of leverage and size as control variables for ROA and ROE has been established. Aydoğan and Kara (2023) and Soriya and Rastogi (2023) discovered the negative effect of leverage when analyzing the impact of sustainability practices on ROA.

The analysis of works on the impact of corporate sustainability practices on the financial performance of companies in emerging countries (China, India, Indonesia, Malaysia, and Turkey) revealed mixed results. Some researchers have found a significant positive impact of sustainability practices on different types of financial performance measures (Önder, 2018; A. Lunawat & D. Lunawat, 2022; Abbas et al., 2023; Dincer et al., 2023; Aydoğan & Kara, 2023; Xu & Zhu, 2024). Others have found a negative significant effect (Dincer et al., 2023), and a separate group of scientists completely denied the fact that any company initiatives related to achieving SDGs are significantly related to the financial performance of companies (Doğan & Kevser, 2021; Kılıç et al., 2022; Soriya & Rastogi, 2023).

The literature review confirms the complexity and multifaceted relationship between corporate sustainability practices and the financial performance of companies from emerging countries. To determine the deep essence and features of such relationships, there is a need for research on the example of those companies that most actively implement sustainability practices in their activities.

Thus, the purpose of the paper is to analyze the impact of corporate sustainability practices on the financial performance of companies included in the BIST Sustainability 25 Index.

2. METHODS

The activities of companies included in the BIST Sustainability 25 Index (The Borsa Istanbul Sustainability 25 Index) were studied to determine the level of influence of corporate sustainability practices on financial performance. The BIST Sustainability 25 Index includes 25 companies from various economic sectors listed on the Istanbul Stock Exchange (ISE) that best integrate the principles of sustainable development and corporate social responsibility in their activities. To study this effect, regression data analysis was used, particularly the least squares method, using the Gretl software package.

The information base of the study was the financial statements on the performance of companies included in the BIST Sustainability 25 Index for 2022, their sustainability reports, and other financial information presented on the companies' websites and posted on the Public Disclosure Platform (KAP), a special information resource, which discloses information about companies listed on the Istanbul Stock Exchange (ISE). Therefore, complete information was obtained on 22 Turkish companies included in the BIST Sustainability 25 Index for the period of 2022. The main reason for excluding a number of enterprises from the study population was the lack of access to their sustainability reports despite the requirement for their mandatory publication.

Based on the research architecture, this study formed two groups of dependent variables characterizing the financial performance of the BIST Sustainability Index 25 companies. The first group includes accounting-based measures calculated based on the use of accounting (internal) data, and the second group includes market-based

measures determined based on stock exchange indicators (external data). Financial performance is proposed to be considered based on the use of the three most common accounting-based indicators used by scientists when conducting similar studies – return on assets (ROA), return on equity (ROE), and assets turnover ratio (ATR) (Önder, 2018; Lehenchuk et al., 2023). To characterize financial performance based on market indicators, Tobin's Q is employed, which is used by Pham et al. (2021) and Friske et al. (2022).

To establish the role of corporate sustainability practices in achieving financial performance, four indices (ESGDI, EDI, SDI, and CGDI) were used, calculated based on the content analysis of BIST Sustainability 25 companies' sustainability reports. The studies by A. Lunawat and D. Lunawat (2022) and Soriya and Rastogi (2023) were used as a theoretical basis for calculating these indices. These four indices are used as independent variables to characterize the quality of corporate sustainability practices based on their level of disclosure in sustainability reports.

The ESG Disclosure Index (ESGDI) is a broad index determined based on a company's level of disclosure in its sustainability report. An appropriate score (3; 2; 1; 0) is carried out to determine the overall level of disclosure in sustainability reports (full disclosure, partial disclosure, non-disclosure with reasons, non-disclosure). To confirm the existence of justified reasons for the inappropriateness of disclosing certain types of information in sustainability reports, an additional analysis of the official websites of companies and their sustainable development policies was carried out. Since the total number of elements of the sustainability report is 52, each company can score a maximum of 156 points, which is the maximum value used in calculating ESGDI using to the following formula:

$$ESGDI = \sum_{n=1}^{k} \frac{di}{m}, \quad (1)$$

where $\sum_{n=1}^{k} di$ is the score obtained based on content analysis of a sustainable report, and m is the maximum score.

Partial indices – EDI (Environmental Disclosure Index), SDI (Social Disclosure Index), and CGDI (Corporate Governance Disclosure Index) – are calculated according to a similar methodology but using a different maximum value of points that a company can score based on the information disclosure in the corresponding section of a sustainability report. The maximum score for section "B. Environmental Principles" is 75, for section "C. Social Principles" – 45, and for section "D. Corporate Governance Principles" – 6.

Analyzing the role of corporate sustainability practices in achieving financial performance also requires considering the influence of additional factors that perform a control function, which can provide a more accurate understanding of the influence of independent variables on dependent variables and avoid bias in the results. Company size (SIZE) and leverage (LEV) used by other scholars when analyzing the impact of corporate sustainability practices (Rahi et al., 2022; Xu & Zhu, 2024) were chosen as control variables. SIZE will determine whether implementing sustainability practices is only possible for large companies due to the availability of greater financial capacity, and LEV will determine whether capital borrowers play a significant role in this process. Accordingly, SIZE is proposed to be calculated as the logarithm of the total assets of companies (Pham et al., 2021; Serpeninova et al., 2022; Li et al., 2024).

Table 1 describes the variables (dependent, independent, and control), their definitions, calculations, and the sources used to obtain the data.

Based on the two types of indices, namely general and partial, characterizing the quality of corporate sustainability practices, two types of analytical models were formed to analyze their impact on the financial performance of BIST Sustainability 25 companies – GEN models (1.1-1.4) and PART models (2.1-2.4). If GEN-type models allow one to establish the overall impact of all sustainability practices on dependent variables, then PART-type models allow one to establish the influence of individual types of such practices (environmental practices, social practices, and corporate governance practices). Since three accounting-based measures (ROA, ROE, and ATR) and one market-based measure (TQ) were used to characterize the financial performance of BIST Sustainability 25 compa-

http://dx.doi.org/10.21511/ee.15(1).2024.10

Table 1. Variables (definition, method of calculation, and source)

Source: Lehenchuk et al. (2023).

Variable	Definition	Method of Calculation	Source
Dependent Variables			
ROA	Return on Assets	Net Turnover/Total Assets	Financial reports
ROE	Return on Equity	Net Profit/Total Equity	Financial reports
ATR	Assets Turnover Ratio	Revenue/Total assets	Financial reports
TQ	Tobin's Q	Market Capitalization/Total Assets	Financial reports, market data from ISE
Independent Variables			
ESGDI	ESG Disclosure Index	$\sum_{n=1}^{k} di / m$, $\sum_{n=1}^{k} di$ – score obtained based on content analysis of sustainability reports or their sections ("B. Environmental Principles," "C. Social Principles," "D. Corporate Governance Principles"). m – maximum score obtained from sustainability reports or their sections.	Sustainability reports, companies' websites
EDI	Environmental Disclosure Index		
SDI	Social Disclosure Index		
CGDI	Corporate Governance Disclosure Index		
Control Variables			
SIZE	Size of the Company	Log of Total Assets	Financial reports
LEV	Leverage	(Long-term Debts + Short-term Debts) / Total Assets	Financial reports

Table 2. Regression models

Model	Regression Equation
GEN models	
1.1	$ROA_{it} = \alpha + \beta_1 ESGDI_{it} + \beta_2 SIZE_{it} + \beta_3 LEV + \varepsilon_{it}$
1.2	$ROE_{it} = \alpha + \beta_1 ESGDI_{it} + \beta_2 SIZE_{it} + \beta_3 LEV + \varepsilon_{it}$
1.3	$ATR_{it} = \alpha + \beta_1 ESGDI_{it} + \beta_2 SIZE_{it} + \beta_3 LEV + \varepsilon_{it}$
1.4	$TQ_{it} = \alpha + \beta_1 ESGDI_{it} + \beta_2 SIZE_{it} + \beta_3 LEV + \varepsilon_{it}$
PART models	
2.1	$ROA_{it} = \alpha + \beta_1 EDI_{it} + \beta_2 SDI_{it} + \beta_3 CGDI_{it} + \beta_4 SIZE_{it} + \beta_5 LEV + \varepsilon_{it}$
2.2	$ROE_{it} = \alpha + \beta_1 EDI_{it} + \beta_2 SDI_{it} + \beta_3 CGDI_{it} + \beta_4 SIZE_{it} + \beta_5 LEV + \varepsilon_{it}$
2.3	$ATR_{it} = \alpha + \beta_1 EDI_{it} + \beta_2 SDI_{it} + \beta_3 CGDI_{it} + \beta_4 SIZE_{it} + \beta_5 LEV + \varepsilon_{it}$
2.4	$TQ_{it} = \alpha + \beta_1 EDI_{it} + \beta_2 SDI_{it} + \beta_3 CGDI_{it} + \beta_4 SIZE_{it} + \beta_5 LEV + \varepsilon_{it}$

Note: ROA, ROE, ATR, and *TQ* – dependent variables; $_i$ – entity, and $_t$ – time; α – identifier; β_n – regression coefficients; *SRDI, EDI, SDI,* and *CGDI* – independent variables; *SIZE* and *LEV* – control variables, where $_i$ – entity and $_t$ – time; ε_{it} – error term.

nies, a total of eight measures were developed and analyzed to examine the role of corporate sustainability practices (Table 2).

3. RESULTS

The analysis confirmed the absence of multicollinearity among the dependent variables. Testing the existence of this problem for the independent variables used in the two types of models analyzed (GEN model and PART model) also confirmed its absence since the obtained correlation values between all independent variables are less than 0.8. Table 3 provides general descriptive statistics for the variables used in the analysis.

Table 3 shows positive mean values of accounting-based performance measures of BIST Sustainability 25 companies in 2022; thus, the vast majority of them have satisfactory financial performance. A significant excess of the average TQ value above 1 indicates positive prospects for company development. According to the stakeholder theory, one of the reasons for this may be the effective corporate sustainability practices implemented at enterprises. Significant deviations between the maximum and minimum values of SIZE and LEV indicate that the population under study includes companies that differ significantly in terms of their volume (the availability of assets at their disposal) and in the structure of the capital used.

Table 3. Descriptive statistics

Variables	Mean	Median	St. Dev.	Minimum	Maximum
ROA	0.145	0.116	0.0973	–0.00592	0.380
ROE	0.315	0.309	0.452	–1.40	0.927
ATR	1.15	0.994	0.629	0.446	2.85
TQ	5.09e+004	1.19e+003	2.28e+005	0.852	1.07e+006
ESGDI	0.855	0.875	0.120	0.400	0.960
EDI	0.766	0.795	0.144	0.290	0.920
SDI	0.960	1.00	0.0877	0.640	1.00
CGDI	0.939	1.00	0.151	0.500	1.00
SIZE	19.9	19.0	3.52	13.3	25.3
LEV	0.586	0.572	0.185	0.306	0.996

The high average ESGDI value (0.855) generally confirms the high level of compliance of BIST Sustainability 25 companies with Sustainability Principles Compliance Outline. At the same time, a minimum ESGDI score of 40% indicates that individual companies' sustainability practices require significant improvement to meet growing stakeholder demands. The obtained high mean values for all partial indices, exceeding 0.75 (EDI (0.766), SDI (0.960), and CGDI (0.939)), also reflect the proportional development of various types of sustainability practices among BIST Sustainability 25 companies. The presence of the maximum value of SDI and CGDI at the level of 1.0 shows that the implementation of social practices and corporate governance practices at individual enterprises is at the highest quality level. However, this is not a widespread phenomenon since, at some enterprises, the value of the EDI indicator is 0.29, SDI is 0.64, and CGDI is 0.5, which indicates a discrepancy between their activities and sustainable development goals.

Table 4 shows the results of the regression analysis of the eight models developed in the paper. They are of two groups based on two types of indices characterizing the quality of corporate sustainability practices: general (GEN models) and partial (PART models).

The analysis of GEN models established that of all the indicators characterizing financial performance, ESGDI has a significant positive impact (at the 1% level) only on ROE. This shows that sustainability practices play a positive role in driving profit efficiency and growth through equity financing for BIST Sustainability 25 companies. The coefficient of determination (*R*-squared) value for model 1.2 is 0.51. This means that more than half (51.42%) of the variation in the dependent variable (ROE) can be explained through the variation in the selected independent variables (Const, ESGDI, SIZE, and LEV). As for other financial measures (ROA, ATR, and TQ), the results show an insignificant relationship between them and ESGD.

It was also found that when analyzing the impact of sustainable development practices on market efficiency, an enterprise's size plays a significant role (at the level of 10%), but this relationship is inverse. This means that smaller companies are more effective at adapting sustainability reporting as a tool for managing market performance.

Analysis of PART models allowed this study to establish the effect of sustainability report elements that characterize the quality of implementing relevant individual types of corporate sustainable development practices. In particular, a positive significant effect of SDI on ROE (at the 1% level) and ATR (at the 5% level) was found. This confirms the feasibility of enterprise investment initiatives to ensure the social responsibility of business and developing social performance since such initiatives increase individual financial performance measures (ROE and ATR) of BIST Sustainability 25 companies. The coefficient of determination for Model 2.2 is 0.62, which is almost twice as large as for Model 2.3 (0.37) and indicates the good explanatory power of Model 2.2.

The results reveal a negative relationship between CGDI and ATR at the 5% level, implying that companies with developed and reliable corporate governance systems do not ensure the growth of the ATR indicator but rather reduce it. This may indicate the lack of a sufficient level of transparency in the corporate governance system and the pres-

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Table 4. GEN models and PART models (ROA, ROE, ATR, and TQ) (*p*-value)

GEN models				
Model	**1.1**	**1.2**	**1.3**	**1.4**
Independent variables	**Dependent variables**			
	ROA	**ROE**	**ATR**	**TQ**
Const	0.4506	0.1115	0.3402	0.8035
ESGDI	0.4256	0.0011***	0.9050	0.4091
EDI	–	–	–	–
SDI	–	–	–	–
CGDI	–	–	–	–
SIZE	0.3661	0.3451	0.4528	0.0814*
LEV	0.3562	0.9180	0.9368	0.5078
R-squared	0.154807	0.514242	0.035414	0.224313
PART models				
Model	**2.1**	**2.2**	**2.3**	**2.4**
Independent variables	**Dependent variables**			
	ROA	**ROE**	**ATR**	**TQ**
Const	0.9019	0.0157**	0.7194	0.4258
ESGDI	–	–	–	–
EDI	0.7563	0.9061	0.4425	0.2802
SDI	0.2366	0.0287**	0.0282**	0.3900
CGDI	0.4829	0.8092	0.0130**	0.4706
SIZE	0.4978	0.3294	0.8283	0.0693*
LEV	0.3138	0.9613	0.6740	0.5184
R-squared	0.218750	0.629594	0.373838	0.274760

Note: * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

ence of excessive powers of its subjects in terms of the company's asset management policy based on stakeholder theory provisions.

The finding of a significant negative effect of SIZE on TQ at the 10% level based on Model 2.4, which confirmed the findings of the Model 1.4 analysis, may mean that the growth of companies' market capitalization indicators may not be related to the overall goal of sustainability practices.

4. DISCUSSION

Over the past decade, there has been growing concern among company stakeholders in developing countries about their social and environmental impacts, as well as an interest in understanding the role of such companies in achieving SDGs. This situation is a consequence of the active spread of sustainability practices worldwide, thanks to the initiatives of the UN and other international organizations. This has led to increased interest in analyzing the impact of sustainability practices on companies' financial performance. Their implementation is, on the one hand, a costly process, and on the other hand, based on the provisions of the stakeholder theory, it ensures that companies receive benefits that improve their financial performance. To visualize sustainability practices and achieve SDGs, companies use various disclosure methods, particularly sustainability reports, which are used to analyze the quality of sustainability practices.

This study used four dependent variables (ROA, ROE, ATR, and TQ) as characteristics of the financial performance of BIST Sustainability 25 companies. Accordingly, four models were built to study the impact of total (ESGDI) and partial (EDI, SDI, and CGDI) indicators of sustainability practices. Based on the analysis of four selected models, the results partially confirm the conclusions of some scientists and refute the conclusions of others. In particular, they reveal the positive and negative impacts of sustainability practices on several different financial performance indicators and deny their existence relative to other indicators.

Firstly, the obtained results refute the conclusions and hypotheses of Önder (2018), A. Lunawat and

D. Lunawat (2022), Dincer et al. (2023), Aydoğan and Kara (2023), Abbas et al. (2023), and Xu and Zhu (2024). They were based on the provisions of the stakeholder theory regarding the undeniable and significant positive impact of all corporate sustainability practices on financial performance measures. This was confirmed by the absence of such a clear impact on all used general (ESGDI) and partial (EDI, SDI, and CGDI) indicators of sustainability practices. In particular, none of the sustainability practice measures used has a significant effect on ROA and Tobin's Q.

One of the reasons for obtaining such results may be the imperfection of the existing requirements for the sustainability reporting system in Turkey (Lehenchuk et al., 2023), so the indicators used do not fully correspond to the characteristics of corporate sustainability practices. The mean value of ESGDI is 0.855, which confirms the high level of compliance with current requirements by BIST Sustainability 25 companies. The presence of such deviations should be taken into account when revising the regulatory system for the formation and control of sustainability reporting.

On the other hand, such results indicate that companies can optimize their financial performance if they conscientiously implement their sustainability practices (Li et al., 2024). Since the study's results contradict the provisions of the stakeholder theory, this should become a prerequisite for the formation of a new optimal strategy for achieving SDGs by the companies under study, which will maximize the receipt of all possible benefits from the implementation of sustainability initiatives and practices.

Mixed results were also identified at the application level of partial sustainability practice indicators. A. Lunawat and D. Lunawat (2022) found no significant impact of EDI and SDI on ROE, and this study supports this outcome. For CGDI, a negative effect on ATR was found, which directly contradicts the findings of Lehenchuk et al. (2023), who studied the performance of Turkish FBT and TCL companies. This may indicate that non-ESG companies have a corporate governance system that hinders the adoption of sustainability practices compared to BIST Sustainability 25 companies. Overall, the negative impact of CGDI on financial performance measures can be explained by less mature government regulations and the high costs of achieving short-term economic benefits.

The lack of a significant effect of any sustainability practice measures used on Tobin's Q suggests that most investors do not follow sustainable, responsible investment practices on the Istanbul Stock Exchange (ISE) when making decisions. This makes it necessary to provide investors with a deeper understanding of the essence of sustainability practices and their role in ensuring the financial performance of companies in emerging countries (Kılıç et al., 2022).

Secondly, the results refute the claim of a complete or overwhelming lack of influence of sustainable development practices on the financial performance of companies in emerging countries (Doğan & Kevser, 2021; Kılıç et al., 2022; Soriya & Rastogi, 2023; Lehenchuk et al., 2023), despite the efforts they put into achieving SDGs. Specifically, the paper confirmed the significant effects of ESGDI on ROE, SDI on ROE and ATR, and CGDI on ATR, which corroborated the findings of A. Lunawat and D. Lunawat (2022) and Abbas et al. (2023). The achievement of such excellent results is due, first of all, to the fact that the activities of the BIST Sustainability 25 companies, which are leaders in compliance with the principles and practices of sustainable development, were chosen as the object of the study.

Third, the results confirm and refute the results of other scientists regarding the effect of control variables (SIZE and LEV). This study found no significant impact of the capital structure indicator (LEV) on all financial performance measures, although a number of researchers noted the existence of a significant relationship (positive or negative) between LEV and ROA (Önder, 2018; Aydoğan & Kara, 2023; Soriya & Rastogi, 2023; Xu & Zhu, 2024).

Analyzing the impact of corporate sustainability practices on the financial performance of BIST Sustainability 25 companies has a number of limitations. First, this study is based on the assumption that the sustainability reports of the BIST Sustainability 25 companies are a true and relevant reflection of their sustainability practices.

http://dx.doi.org/10.21511/ee.15(1).2024.10

Moreover, the general (ESGDI) and partial (EDI, SDI, and CGDI) indices used adequately (based on the proposed model for their calculation) reflect sustainable performance and its individual elements (environmental, social, and governmental performance). Second, in relation to all emerging countries, the results should be extrapolated, taking into account the subject of the study – BIST Sustainability 25 companies. This subject represents Turkey and companies that most conscientiously adhere to SDGs. Third, to more accurately determine the impact of sustainability practices on financial performance, one should consider the possibility of a time lag in such an impact, when sustainability practices will influence financial performance measures in future reporting periods. To identify such long-term relationships, it is necessary to extend the observation period of the activities of companies from the BIST Sustainability 25 list and use a specialized research methodology.

CONCLUSION

The study examined the impact of corporate sustainability practices on the financial performance of companies included in the BIST Sustainability 25 Index. This study's main contribution is to extend the previous literature, which focused on examining the impact of corporate sustainability practices on the financial performance of companies in emerging countries, particularly BIST Sustainability 25 Index companies that take a proactive approach to complying with sustainable development principles and practices. Thus, the results can be used as a sample for conducting a comparative analysis of the impact of sustainable development practices on the financial performance of non-ESG companies.

Analysis of the two types of regression models (GEN models and PART models) revealed contradictory results that partially confirm the findings of some scientists and, at the same time, refute the findings of others. A study of GEN models found that Turkish companies implementing better overall corporate sustainability practices have a significant positive impact at the 1% level on only one financial performance indicator, ROE. An insignificant relationship was found between other indicators (ROA, ATR, and TQ) and ESGDI. Analysis of PART models revealed the impact of individual components of corporate sustainability practices on financial performance. In particular, a positive significant effect of SDI on ROE (at the 1% level) and ATR (at the 5% level), as well as a negative relationship between CGDI and ATR at the 5% level, was revealed. Using control variables for the two types of models revealed a significant negative effect of SIZE on Tobin's Q.

In addition, the study highlights the imperfections of the existing requirements for the reporting system in sustainable development for companies included in the BIST Sustainability 25 Index. Moreover, there is a need to revise the regulatory system for generating and monitoring sustainability reporting and formulate a new optimal strategy for achieving the SDGs by ESG companies. This may increase investor awareness of the essence of sustainability practices and understanding their role in ensuring the financial performance of companies in emerging countries.

AUTHOR CONTRIBUTIONS

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ACKNOWLEDGMENT

This study was supported by the Ministry of Education and Culture of Ukraine within the project "Development of a mechanism for the sustainable development of economic systems in the conditions of military operations and post-war recovery of the economy" (Registration number of the project: 0124U000463).

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