ESG Performance Evaluation of NIFTY 50 Companies: A Comparative Study

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Abstract

The present study analyzes and compares the ESG performance of NIFTY 50 companies. ESG scores of companies in NIFTY 50 index for the year 2026 were used for conducting the present analysis. In order to conduct the descriptive analysis, descriptive statistics were used to calculate the average ESG performance and identify companies with the best and worst performances in terms of sustainability. For comparing the means of the three variables, namely, Environment, Social, and Governance, Shapiro-Wilk test and Levene's test for equality of variances were carried out. Due to the violation of the assumptions for normality and homogeneity of variances, Welch's Analysis of Variance (ANOVA) and Games-Howell post hoc test were used. According to the analysis conducted, the mean ESG score was observed as 72.48, which implies a moderate to good performance of companies on the parameters of sustainability. Out of the three ESG variables, Governance was found to be the best dimension with an average score of 80.37, followed by Social (69.93) and Environmental (62.10). Welch's ANOVA and Games–Howell post hoc analysis showed that all pairs were significantly different. With such a high effect size, the differences may be considered to have practical significance as well. According to the results obtained from the analysis, while the Indian blue-chip companies have sound corporate governance structures, their environmental performance is considerably poor. These conclusions are valuable for the purposes of corporate management, as well as policy-making and investing.

Keywords: ESG Performance, Environmental Score, Social Score, Governance Score, NIFTY 50, Sustainability, Welch ANOVA, Corporate Responsibility, India.

1. Introduction

Recently, Environmental, Social, and Governance (ESG) practices have become a key element in corporate sustainability and responsible management. In this respect, ESG can be considered as an evaluation tool that enables organizations to measure the environmental impact, social responsibility, and governance performance (Eccles et al., 2014; Friede et al., 2015). The growing attention paid by society to issues related to climate change, resource shortages, social injustice, and corporate accountability led to the rise of expectations concerning sustainable operations in business enterprises (Eccles et al., 2014; Friede et al., 2015).

The idea of ESG was popularized by United Nations Principles for Responsible Investments (UNPRI), which promoted the incorporation of the sustainability factor into the investment process (Eccles et al., 2014). Currently, ESG performance is viewed as one of the main indicators of an organization's sustainability and long-term development (Velte, 2017). It has been claimed previously that ESG practices have a positive influence on the improvement of corporate financial performance, increase in stakeholders' trust, reduction of risk exposure, and development of a competitive advantage (Friede et al., 2015; Fatemi et al., 2018).

The environmental dimension has to do with natural resource use, carbon footprint, waste management, and sustainability from an ecological point of view. The social dimensions are concerned with the relationships with employees, customers, communities, and other stakeholder groups. Corporate governance is concerned with board effectiveness, efficiency, transparency, ethical behavior, accountability, and shareholder protection (Gillan et al., 2021). These various dimensions taken together form the concept of corporate sustainability performance evaluation.

Across the globe, the practice of ESG reporting has become increasingly popular on account of regulation and demand of investors (Daugaard & Ding, 2022). Even countries that are still emerging economies such as India have shown significant interest in sustainable business on account of the emergence of ESG reporting requirements set out by the country's Securities and Exchange Board of India (SEBI). As the major players in the economy are instrumental in its growth, knowledge of their ESG score is critical.

The NIFTY 50 index covers some of the biggest players of India in terms of both influence and size. This index makes it easier to evaluate corporate sustainability performance. It is important to analyze ESG scores for companies included in the NIFTY 50 index to know more about their performance across environmental, social, and governance aspects.

2. Literature Review

ESG performance research has been extensively carried out during the past decade. One of the studies, which is considered to be quite extensive and thorough, is the study performed by Friede et al. (2015). The researchers concluded that about 90% of empirical research works revealed a positive or neutral effect of the ESG performance of companies on their financial performance. Moreover, Velte (2017) stated that there is a significant influence of the positive performance of a company in terms of its ESG performance.

Comparing the performance of high-sustainability and low-sustainability companies, Eccles et al. (2014) found that sustainable companies outperform their opponents due to their sustainability-based governance structure. Fatemi et al. (2018) stated that high ESG engagement leads to an increase in company valuation especially if companies practice transparent disclosure. It was also mentioned by Gillan et al. (2021) that ESG activities can contribute to creating value for companies through improved relationships and reduced risks of corporations.

Studies that examine the relationship at an individual ESG dimension level have also made some contributions to the literature. Ahmad et al. (2021) revealed that environmental activities play a vital role in ensuring company sustainability. Shakil et al. (2019) pointed out that good governance enhances company performance and mitigates agency conflicts. The study conducted by Raimo et al. (2021) revealed that ESG disclosures help in improving company transparency and investor confidence.

Regarding ESG studies in developing countries, there has been considerable academic interest in recent years. Kumar and Firoz (2022) showed that ESG disclosures positively impact company performance in India. In a similar vein, Buallay (2019) found a strong relationship between ESG performance and operational efficiency. The study conducted by Atan et al. (2018) indicated that ESG activities boost company reputation and financial performance.

Some studies stressed the rising importance of ESG reporting frameworks and sustainability disclosures (Eccles & Klimenko, 2019; Daugaard & Ding, 2022). On the other hand, studies carried out by Albitar et al. (2020), Li et al. (2021), and Velte (2022) suggested that company-specific features including board composition, ownership, institutional shareholders, and regulation are determinants of ESG performance.

The latest systematic review studies show that ESG research is still fragmented across sectors, locations, and aspects (Barbosa et al., 2023; Jámbor & Zanócz, 2023). While there is considerable literature on relationships between ESG and financial performance, little has been done to compare ESG scores, including environmental, social, and governance aspects, directly.

3. **Research Gap**

Most of the past researches have considered the relationship between ESG performance and financial performances. Almost all researches consider the impact of ESG on the bottom line, company value, stock returns or overall financial performance. On the other hand, relatively few studies have compared the ESG dimensions to each other. In the case of India, researches that compare the ESG scores of top companies included in NIFTY 50 are less frequent. Similarly, studies that use strong methods like Welch ANOVA and Games-Howell post hoc test to compare ESG performance among the three ESG dimensions are also less frequent. Thus, there is an unexplored area regarding whether ESG dimensions of Indian blue-chip companies have similar or different performances and what dimension has performed better than others. The current research will try to fill this gap by performing an empirical comparison among the three ESG dimensions.

4. **Objectives of the Study**

1. To assess the average ESG performance of NIFTY 50 companies.
2. To find out the best-performing and worst-performing ESG companies amongst NIFTY 50 companies.
3. To compare ESG scores of NIFTY 50 companies.
4. To ascertain if there are any significant differences between ESG dimensions.
5. To find out the level of differences between ESG scores.

5. Hypotheses of the Study

Null Hypothesis (H_0)

There is no significant difference among the Environmental, Social, and Governance scores of NIFTY 50 companies.

Alternative Hypothesis (H_1)

There is a significant difference among the Environmental, Social, and Governance scores of NIFTY 50 companies.

6. Research Methodology

6.1. Research Design

In this study, the quantitative as well as descriptive and comparative method is employed in order to measure the ESG performance of organizations listed in the NIFTY 50 Index. The aim of the research is to analyze differences between ESG parameters and to measure sustainability performance in India's leading companies in terms of their strengths and weaknesses.

6.2 Data Source

Secondary sources are the only source of data used in this study. ESG ratings of the NIFTY 50 companies were obtained from the ESG databases of SES ESG Research Private Limited for the financial year 2026. This data set includes Environmental Rating, Social Rating, Governance Rating, and the Overall ESG Rating of all NIFTY 50 companies.

6.3 Population and Sample

The population consists of all companies listed on the National Stock Exchange (NSE) of India. The sample includes the 50 companies constituting the NIFTY 50 index during 2026.

6.4 **Sampling Technique**

A census sampling approach was employed, whereby all NIFTY 50 companies were included in the analysis. Since the entire population of interest was examined, sampling error was minimized.

6.5 **Variables of the Study**

6.5.1. **Dependent Variable**-ESG Dimension Score

6.5.2 **Independent Variable-**ESG Category

- Environmental Score
- Social Score
- Governance Score

6.6 Data Preparation

The dataset was transformed into a long-format structure where Environmental, Social, and Governance scores were treated as separate groups for statistical comparison. This restructuring facilitated the application of comparative statistical techniques.

6.7. Statistical Tools and Techniques

6.7.1 Descriptive Statistics- Descriptive statistics were used to summarize ESG performance across NIFTY 50 companies. Mean values were calculated for: Overall ESG Score, Environmental Score, Social Score and Governance Score.

6.7.2 Shapiro–Wilk Normality Test-Before conducting group comparisons, the normality of Environmental, Social, and Governance scores was examined using the Shapiro–Wilk test.

6.7.3 Levene's Test for Homogeneity of Variance-To assess whether variances were equal across ESG dimensions, Levene's test was performed.

6.7.4 Welch Analysis of Variance (Welch ANOVA)-Because the assumptions of normality and homogeneity of variances were not fully satisfied, Welch's Analysis of Variance was employed instead of the conventional one-way ANOVA.

6.7.5 Games–Howell Post Hoc Test-Following a significant Welch ANOVA result, the Games–Howell post hoc test was conducted to determine which specific ESG dimensions differed significantly from one another.

6.7.6 Effect Size Analysis-To evaluate the practical significance of differences among ESG dimensions, effect size measures were calculated.

6.8. Software Used- Python was used to perform data cleaning, transformations, visualizations, and statistical tests. In the analysis, the following packages were used: Pandas, NumPy, SciPy, Pingouin, Statsmodels and Matplotlib. This software was used for descriptive statistics, normality testing, test for equality of variances, Welch ANOVA, Games-Howell post-hoc testing, and effect size calculation.

7. Results and Discussion

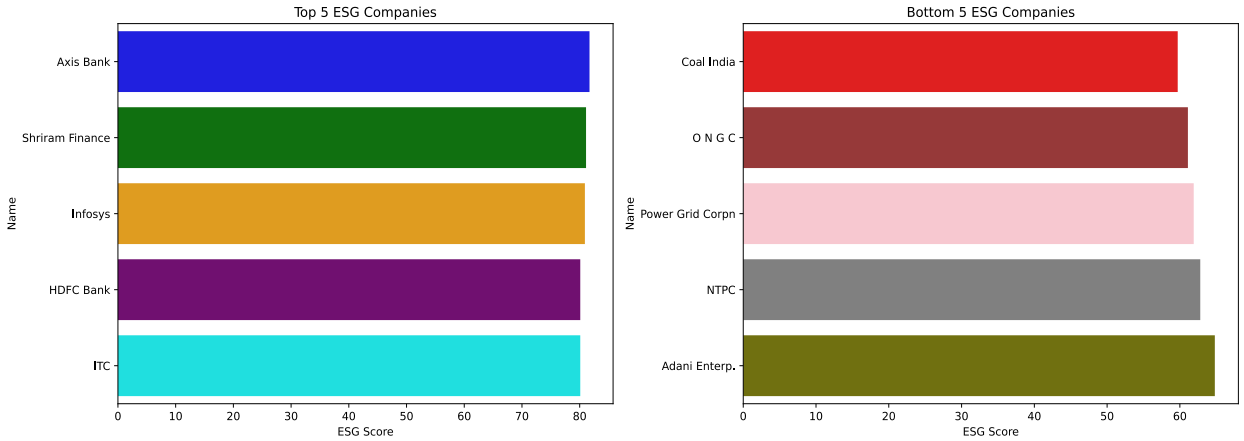
Table-1 Average ESG Score of Nifty50 Companies

Metric	Average Score
Average ESG Score	72.4760
Average Environment Score	62.0994
Average Social Score	69.9262
Average Governance Score	80.3722

7.1 Average ESG Performance of NIFTY 50 Companies

Table 1 and figure 1 show the mean performance of NIFTY 50 companies in the ESG rating. It can be concluded from the results that the mean performance level of the ESG score of NIFTY 50 companies is 72.48, reflecting a good effort in relation to sustainability practices in the sampled companies.

Figure 1:Comparative ESG Performance of Nifty50 Companies



It has been found that out of the three sub-domains of ESG, the Governance domain has a high average value (80.37), followed by Social (69.93) and Environmental (62.10). The study findings show that the implementation level of governance practices is higher among the leading companies in India compared to environmental and social practices. High governance practices might be due to the growing regulatory pressure, mechanisms, reporting systems, and stakeholders' expectations regarding the company. On the other hand, it can be seen that environmental performance is comparatively lower, signifying that companies in India need to work on environment sustainability and climate-related issues.

7.2 Ranking of ESG Performance among NIFTY 50 Companies

Table 2 shows a ranking of the NIFTY 50 companies based on their overall ESG scores. The data reveals that Axis Bank received the best ESG score (81.7), while Shriram Finance received the second-best score (81.1).

Table-2 Ranking of ESG Score of Nifty50 Companies

Rank	Top 5 ESG Companies	ESG Score	Bottom 5 ESG Companies	ESG Score
1	Axis Bank	81.7	Coal India	59.7
2	Shriram Finance	81.1	O N G C	61.1
3	Infosys	80.9	Power Grid Corpn	61.9
4	HDFC Bank	80.1	NTPC	62.8
5	ITC	80.1	Adani Enterp.	64.8

Infosys (80.9), HDFC Bank (80.1), and ITC (80.1) were ranked third, fourth, and fifth, respectively. On the other hand, Coal India received the worst ESG score (59.7), followed by ONGC (61.1), Power Grid Corporation (61.9), NTPC (62.8), and Adani Enterprises (64.8). One notable trend observed in this ranking is that financial and IT companies take up most of the first ranks, while energy, mining, and resource-intensive industries make up the bottom ranks. This trend is in line with the idea that services have a smaller ecological impact than extractive industries and energy-intensive industries.

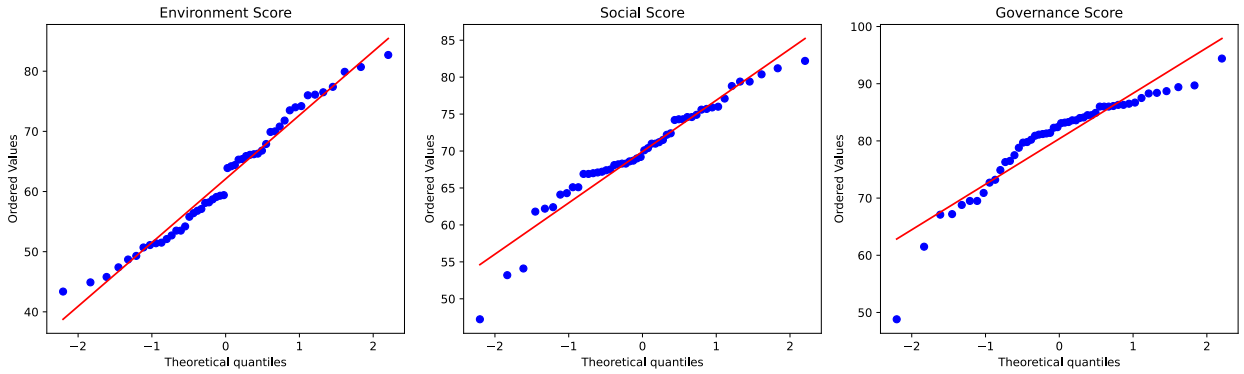
7.3 Assessment of Normality Assumption

Before undertaking comparative statistical testing, the normality of the Environmental, Social, and Governance scores was assessed via the Shapiro-Wilk test. The results are provided in Table 3. While the Environmental Score has yielded p = 0.2261, exceeding 0.05 and thereby accompanying normality, both Social Score (p =

0.0190) and Governance Score (p = 0.0001) have returned values below 0.05, indicating non-normality which can be also confirmed by QQ plot in figure 2.

Table-3 Shapiro Test			
Variable	**Shapiro Statistic**	**P-value**	**Normality Interpretation**
Environment Score	0.9698	0.2261	Normally Distributed
Social Score	0.9437	0.0190	Not Normally Distributed
Governance Score	0.8831	0.0001	Not Normally Distributed

Figure 2:Q-Q Plots for Normality Assessment of ESG Components



Therefore, only Environmental Score meets the assumption of normality, whereas Social and Governance Scores do not meet this criterion. In other words, normality is partly accompanied and can be used as an underlying assumption in further analysis only insofar as it pertains to Environmental Scores.

7.4 Assessment of Homogeneity of Variances

Results of the Levene's Test for equality of variances are shown in Table 4. For the Levene's Test, the obtained statistic was 6.7674 while the p-value was 0.0015.

Table-4 Levene's Test			
Test	**Statistic**	**P-value**	**Interpretation**
Levene's Test for Homogeneity Variance	6.7674	0.0015	Variances are not homogeneous (equal varianc assumption violated)

With the p-value lower than 0.05, we reject the null hypothesis stating that variances are equal. The implication is that the variances of scores on Environmental, Social and Governance are not equal. As such, the assumption of equal variances necessary for traditional one-way analysis of variance is not satisfied. This makes the use of Welch's ANOVA justified because of the violation of two assumptions.

7.5 Comparison of ESG Dimensions Using Welch ANOVA

The results of Welch's ANOVA are provided in Table 5. The ANOVA test yielded F = 49.7987 with p < 0.001. As seen from the data, there is a statistically significant difference between Environmental, Social, and Governance scores.

Table-5 Welch Test						
Source	**df1**	**df2**	**F-Statistic**	**P-value**	**Partial Eta Squar (η^2)**	**Interpretation**
ESG_Type	2	95.6536	49.7987	0.0000	0.4313	Significant difference exists amo ESG score groups

Consequently, the null hypothesis that suggests no statistically significant differences between the variables is rejected. Along with the statistically significant result of the ANOVA test, the Partial Eta Squared (η^2) value of 0.4313 was obtained. It means that 43.13% of the total variance in ESG scores can be attributed to differences between Environmental, Social, and Governance dimensions. Based on common criteria for the magnitude of the effect size, the Partial η^2 value should be considered large. Thus, ESG category may be treated as a major variable that influences score variation.

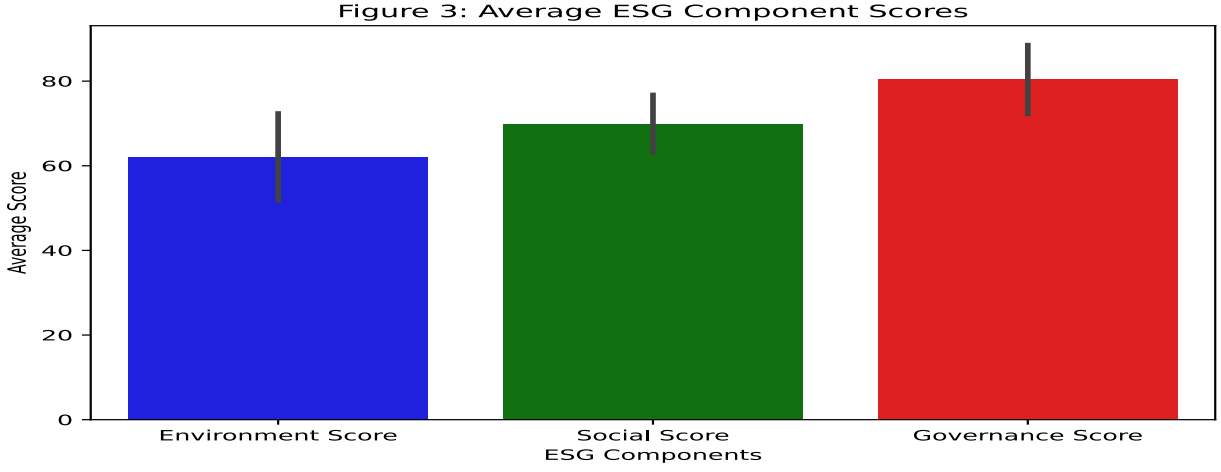
7.6 Pairwise Comparison of ESG Dimensions

As can be seen in table 5 above, there is a highly significant Welch ANOVA for the dependent variable (Scores). As a result, Games-Howell Post hoc test was carried out to find out which group differs from others. The results are given in Table 6 below.

Table-6 Games-Howell Post Hoc Test										
Group A	**Group B**	**Mean A**	**Mean B**	**Mean Difference**	**Std. Error**	**t-value**	**df**	**p-valu**	**Hedges' g**	**Interpretation**
Environment Score	Governance Score	62.10	80.37	-18.27	1.88	-9.70	93.30	0.00	-1.92	Significant difference
Environment Score	Social Score	62.10	69.93	-7.83	1.77	-4.41	85.60	0.00	-0.88	Significant difference
Governance Score	Social Score	80.37	69.93	10.45	1.53	6.81	95.23	0.00	1.35	Significant difference

In comparing the means of Environmental and Governance Scores, the difference is highly significant (-18.27; $p < 0.001$). It shows that Governance Scores are higher than the Environmental Scores. Effect Size (g) is -1.92 which suggests very large effect size.

Figure 3: Average ESG Component Scores



The comparison between means of Social and Environmental dimension scores presented in figure 3 resulted in a significant difference (-7.83; $p < 0.001$). The effect size ($g = -0.88$) denotes a large practical difference between the two. In comparing Governance and Social Scores, there was a highly significant difference in the means (10.45; $p < 0.001$). Again, there was a large effect size ($g = 1.35$). This result shows that Governance Scores are higher than Social Scores. Overall, the Post hoc Test results show that ESG dimensions differ in the following manner:

7.7 Magnitude of ESG Differences

The overall effect size figure has been provided in Table 7 with a total effect size value of 0.88. As per Cohen's scale, any figure more than 0.80 is categorized as a large effect size.

Table-7

Measure	**Value**	**Interpretation**
Effect Size	0.88	Large Effect Size

The large effect size suggests that there are not only statistical differences between the environmental, social, and governance ratings, but these differences are also practical in nature. It implies that there are considerable differences in the level of performance and effectiveness of the ESG dimensions in NIFTY 50 organizations. Managerially, the results mean that although governance practices are well developed among Indian companies, environmental efforts need to be enhanced.

8.Conclusion

The present research analyzed the performance related to ESG parameters among NIFTY 50 companies and found out whether there were any significant differences between the three ESG categories. Applying the ESG scores for the period of 2026, the paper utilized descriptive statistics, the Shapiro–Wilk test for normal distribution, Levene's test, Welch ANOVA, and Games-Howell post hoc testing to carry out the comprehensive analysis of sustainability performance of top companies of India. Based on the research results, it was found that the ESG performance of NIFTY 50 companies are rather high, with the mean value of 72.48. Of the three dimensions, the highest mean ESG score was obtained for the Governance (80.37), whereas the lowest ones were calculated for Environment (62.10). It can be concluded that the implementation of corporate governance practices is higher among the sample than social and environmental activities. From the ranking point of view, the highest ESG scores were obtained by banks and information technology companies, while mining, energy, and other resource-intensive companies demonstrated much lower ESG scores. It suggests that there is an impact of industry traits on sustainability performance and proves that environmentally sensitive industries continue facing challenges with regard to ESG indicators. The inferential analysis proved that there was indeed a difference between the Environment, Social, and Governance factors. Indeed, the Welch ANOVA test results indicated significant differences between the scores in the three areas under consideration, rejecting the null hypothesis. Games–Howell post hoc test results show that there was significance in all pairwise comparisons and, therefore, prove that there were higher scores for governance than for social factors and higher scores for social than environmental ones. Large effect sizes found throughout the research prove that the differences were both significant and practical. Thus, the paper concluded that ESG performance in India's major companies was characterized by high governance scores, average social scores, and poor environmental scores. Indeed, Indian blue-chip companies achieved success in terms of governance practices and initiatives aimed at stakeholders. On the contrary, environmental sustainability requires more efforts and investments. A company should emphasize its sustainability agenda, develop better climate strategy, improve its efficiency in resource use, and make better environmental disclosures to make its overall ESG performance more balanced. In addition, regulatory authorities and policy makers can push companies to place more focus on environmental issues

through ESG reporting and governance frameworks. In summary, the research adds to the existing ESG literature through empirical evidence regarding relative ESG dimension performance for the companies listed in NIFTY 50. The findings indicate that a holistic sustainability strategy must be employed where environmental, social, and governance goals are considered together.

References

1. Atan, R., Alam, M. M., Said, J., & Zamri, M. (2018). The impacts of environmental, social, and governance factors on company performance. *Management of Environmental Quality, 29*(2), 182–194. DOI: 10.1108/MEQ-03-2017-0033
2. Barbosa, A. S., Silva, M. C. B. C., Silva, L. B., Morioka, S. N., & Souza, V. F. (2023). Integration of environmental, social, and governance criteria: Their impacts on corporate sustainability performance. *Humanities and Social Sciences Communications, 10*(1). DOI: 10.1057/s41599-023-01919-0
3. Broadstock, D. C., Chan, K., Cheng, L. T., & Wang, X. (2021). The role of ESG performance during the COVID-19 crisis. *Finance Research Letters, 38*, 101716. DOI: 10.1016/j.frl.2020.101716
4. Buallay, A. (2019). Is sustainability reporting associated with performance? *Management of Environmental Quality, 30*(1), 98–115. DOI: 10.1108/MEQ-12-2017-0149
5. Daugaard, D., & Ding, A. (2022). Global drivers for ESG performance: The body of knowledge. *Sustainability, 14*(4), 2322. DOI: 10.3390/su14042322
6. Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science, 60*(11), 2835–2857. DOI: 10.1287/mnsc.2014.1984
7. Eccles, R. G., & Klimenko, S. (2019). The investor revolution. *Harvard Business Review, 97*(3), 106–116.
8. Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and company value. *Global Finance Journal, 38*, 45–64. DOI: 10.1016/j.gfj.2017.03.001
9. Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment, 5*(4), 210–233. DOI: 10.1080/20430795.2015.1118917
10. Gillan, S. L., Koch, A., & Starks, L. T. (2021). Companies and social responsibility: A review of ESG and CSR research. *Journal of Corporate Finance, 66*, 101889. DOI: 10.1016/j.jcorpfin.2021.101889
11. Jámbor, A., & Zanócz, A. (2023). The diversity of environmental, social, and governance aspects in sustainability. *Sustainability, 15*(18), 13958. DOI: 10.3390/su151813958
12. Kumar, K., & Firoz, M. (2022). ESG disclosure and company performance. *Resources Policy, 74*, 102350. DOI: 10.1016/j.resourpol.2021.102350
13. Li, T., Gong, M., Zhang, X., & Koh, L. (2021). The impact of ESG on company value. *Business Strategy and the Environment, 30*(4), 1597–1614. DOI: 10.1002/bse.2707
14. Pinto, Inês & Morais, Ana Isabel & Quick, Reiner, 2020. "The impact of the precision of accounting standards on the expanded auditor's report in the European Union," Journal of International Accounting, Auditing and Taxation, Elsevier, vol. 40(C).. DOI: 10.1016/j.intaccaudtax.2020.100333
15. Raimo, N., Caragnano, A., Zito, M., Vitolla, F., & Mariani, M. (2021). Extending the benefits of ESG disclosure. *Sustainability, 13*(7), 3865. DOI: 10.3390/su13073865
16. Shakil, M. H., Mahmood, N., Tasnia, M., & Munim, Z. H. (2019). Do environmental, social and governance performance affect economic performance? *Sustainability, 11*(4), 1188. DOI: 10.3390/su11041188
17. Velte, P. (2017). Does ESG performance have an impact on financial performance? *Journal of Global Responsibility, 8*(2), 169–178. DOI: 10.1108/JGR-11-2016-0029
18. Velte, P. (2022). Which institutional investors drive corporate sustainability? *Business Strategy and the Environment, 32*(1), 42–71. DOI: 10.1002/bse.3117

19. Wong, W. C., Batten, J. A., Ahmad, A. H., Mohamed-Arshad, S. B., Nordin, S., & Adzis, A. A. (2021). Does ESG certification add company value? *Finance Research Letters, 39*, 101593. DOI: 10.1016/j.frl.2020.101593
20. Yu, E. P., Van Luu, B., & Chen, C. H. (2020). Greenwashing in environmental, social and governance disclosures. *Research in International Business and Finance, 52*, 101192. DOI: 10.1016/j.ribaf.2020.101192