

## Effect of ESG Scores on Firm Performance: Evidence from Borsa Istanbul Sustainability Index

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### Abstract

This study aims to analyze the relationship between environment, social and governance (ESG) scores and firm performance of the companies in the BIST Sustainability Index. The individual environment, social and governance scores, and the firm performance dataset of the 62 companies in the BIST Sustainability Index for the year 2022 are analyzed by applying multiple regression analysis. Two models are formed to analyze this relationship by using net profit margin as the indicator of profitability and earning per share as the indicator of firm value of the representation of firm performance. The results show that there is a positive relationship between environment score and profitability, whereas there is a negative relationship between social score and profitability. Additionally, it is found that there is a positive relationship between social score and firm value.

**Keywords:** ESG Scores, Firm Performance, Profitability, Firm Value

### Introduction

As economies develop and financial markets deepen, the risks that companies are exposed to increase. Knowing and analyzing the factors affecting the risks and firm value of companies will contribute to increasing the firm performance. In addition, investors who will invest in publicly traded companies are expected to select companies with a high probability of maximizing firm performance. While aiming to maximize firm performance, company management should also take into account sustainability.

Within the framework of the concept of sustainability, companies consider environmental, social, and governance (E-environmental, S-social, G-governance - ESG) factors in their activities to create long-term value for their stakeholders, instead of focusing only on financial and economic factors. The application of environmental, social, and governance factors in company activities can increase the value of companies by contributing positively to both stock prices and corporate image.

Corporate sustainability is defined as realizing business strategies that meet the current expectations of the company and its stakeholders, while contributing to the protection and development of resources that will be used in the future (Labuschagne et al., 2005). Sustainable development practices, which is a concept related to corporate sustainability, is defined as a subset of business practices to achieve strong strategy and performance outcomes and includes a focus on developing one or more of three key strategic areas of sustainable development practices, namely continuous stakeholder support, developing market opportunities and contributing to the financial performance of the business (Goldsmith and Samson, 2005).

With the increasing importance of corporate sustainability, sustainability indices have been established in stock markets in different countries around the world to share the environmental, social, and governance performances of companies with the public. The ESG scores of the companies included in these indices have started to be published regularly.

International organizations also promote the concept of sustainability to support a sustainable global economy. United Nations Sustainable Stock Exchange Initiative (SSE), which was established to provide a global platform for exchanges around the world with 314 member exchanges, enhance performance on ESG issues, and encourage sustainable investments. SSE aimed to provide listed companies with guidance on sustainability reporting and create recommendations on the implementation of sustainability policies (SSE, 2024).

The publication of ESG scores for companies provides an opportunity for companies to share their sustainability practices with their stakeholders and the public, while also contributing to the investment of individual and institutional investors in company shares (Scalet and Kelly, 2010). It has also been found that companies with high ESG scores in sustainability indices have lower risk levels and are more resilient than other companies during periods of economic instability (Ferriani and Natoli, 2020).

Borsa Istanbul (BIST), as a stock exchange of Türkiye, has been calculating the BIST Sustainability Index (XUSRD) since 2014 to provide guidance to companies in the management environmental, social and governance risks and information on companies' sustainability policies to stock market investors. Borsa Istanbul has been using combined and individual ESG scores calculated by Refinitiv for the selection process of the companies for this Index. To be included in the BIST Sustainability Index, listed companies must have a combined ESG score of 50 or above, each individual ESG score must be 40 or above, and at least 8 of the category scores must be 26 or above. There are currently 77 companies in the BIST Sustainability Index (Borsa Istanbul, 2024a).

The inclusion of companies in the BIST Sustainability Index and the disclosure of their ESG scores contribute to making their sustainability practices better known to stakeholders and the public, and may also increase stock returns by causing individual and institutional investors to invest in company shares. In addition, these companies may benefit more from green financing opportunities with favorable conditions, which have recently gained particular importance, compared to other companies that are not included in the BIST Sustainability Index and do not have an ESG scores.

Analysing the relationship between ESG scores and the performance of companies included in the sustainability indices emerges as an important research topic. Determining that high ESG scores may have a positive impact on the performance of companies may encourage them to implement policies and procedures in environmental, social, and governance areas. In this context, this study aims to analyze the relationship between ESG scores and the firm performance of companies in the BIST Sustainability Index. With the

findings obtained as a result of this study, it is aimed to contribute to the literature by providing information about the relationship between ESG scores and firm performance of companies in the BIST Sustainability Index.

The study has been formed as follows. After the introduction section, a summary of the literature is presented in Section 2. Section 3 devoted to the analysis, in which dataset, variables, and methodology of the study will be presented. In Section 4, the results of the study are presented. Section 5 is dedicated to the conclusion of the study.

### **Literature Review**

The studies about the relationship between environmental, social, and governance activities and the firm performance attempted to shed light on the question of whether these activities have positive and negative effects on the companies' financial positions and stock prices using data from one or more countries, stock market indices by employing different empirical methods. Some studies in this issue apply meta-analysis, which systematically assesses the results of previous research to derive generalized conclusions. The studies that used meta-analysis to explore the relationship between ESG practices and the firm performance of the companies are summarized below.

Lu and Taylor (2015) investigated the relationship between corporate sustainability performance and corporate financial performance through meta-analysis of 198 empirical studies with 31514 observations and showed that sustainability performance increased a company's financial performance in the long run. Friede et al. (2015) reviewed more than 2200 empirical studies to examine the relationship between environmental, social, governance criteria and corporate financial performance, and concluded that roughly 90% of studies found a nonnegative relationship between these two variables by highlighting the point that positive ESG impact on corporate financial performance was stable over time.

Hang et al. (2019) focused on the causality effects between corporate environmental performance and financial performance by applying a meta-analysis of 142 empirical studies with 893 observations. The authors found that increasing environmental performance of companies had a positive effect on financial performance in the long term. Whelan et al. (2021) examined more than 1000 studies to explore the link between environmental, social, governance activities and the financial performance of the companies by grouping the studies into those focused on corporate financial performance and those focused on investment performance and showed that better management of ESG policies caused improvement in basic financial ratios of the companies.

Busch and Friede (2018) combined previous studies by meta-analyses with a sample size of one million observations to analyze the relationship between social and environmental performance and financial performance of the companies. The results of the study pointed out a significant and positive relation between these two variables and corporate reputation is a key determinant for corporate social performance. Alshehhi et al (2018) analyzed the impact of sustainability practices on financial performance by applying content analysis to examine 132 articles and the authors found that 78% of studies reported a positive relationship between sustainability and financial performance.

Lopez-Arceiz et al (2018) analyzed 678 effect sizes from 83 empirical studies aiming to investigate the relationship between the economic and social performance of the companies and found a positive relationship between them. Vishwanathan et al (2020) introduced the concept of strategic corporate social responsibility by analyzing 344 empirical studies about the relationship between this concept and financial performance, and identified four

empirical mechanisms for explaining the positive effect of social responsibility on financial performance.

Miras-Rodriguez et al (2015) analyzed the role of national culture on corporate social and responsibility actions and firm performance relation through a meta-analysis of the studies conducted on different countries and concluded that countries with high concentration on human features showed positive correlation between social actions and firm performance. Plewnia and Gunther (2017) integrated the 183 effect sizes from 45 empirical studies to investigate the relationship between corporate philanthropy and financial performance of the companies. The authors found that there is a significant positive relationship between them and also put forth points on how and when corporate philanthropy influences financial performance.

Hoobler et al (2018) investigated the relationship between women leadership and financial performance through meta-analysis of 78 empirical studies with an observation of 117369 companies and showed that women leadership affects firm and sales performances of the companies. Jeong and Harrison (2016) analyzed the effect of female top managers on the firm performance with meta-analysis of 146 studies from 33 different countries. The authors concluded that the inclusion of female top managers is positively related to long-term financial performance, but negatively related to short-term stock market returns. Rost and Ehrman (2017) investigated the reporting biases on the findings of various research, which present a positive association between social performance and financial performance of the companies and found a positive reporting bias in the literature.

Some studies exploring the relationship between environmental, social, and governance activities and firm performance focus on one-country or multi-country data and stock market indices. The studies that have results of positive or negative relationships between ESG activities and financial performance concentrating on different entities are presented below.

The studies that found a positive relationship between ESG activities and firm performance in different jurisdictions and entities are as follows: Spanish companies Gallardo-Vazquez et al (2019); US companies Fatemi et al (2018); Taiwan companies Shihping and Chih-Lung (2014); German companies Verbeeten et al (2016); Indian companies Dalal and Thaker (2019); Chinese companies Du et al (2017), Thailand companies Tippayawong et al (2015), multi-country companies Thornton et al (2013); Naem et al (2022); Ameer and Othman (2012); Chairani and Siregar (2021), stock market indices (Cunha and Samanez, 2013; Wu et al, 2017; Ahmad et al., 2021).

The studies that found a negative relationship between ESG activities and firm performance in different jurisdictions and entities are as follows: Malaysian companies (Norhasimah et al (2016); Italian companies (Landi and Sciarelli, 2019); Indian companies Garg (2015); Canadian funds Folger-Laronde et al (2020), multi-country companies Movassaghi and Bramhandkar (2012); Garcia and Orsato,(2020); Duque-Grisales and Aguilera-Caracuel (2021), stock market indices (Lipiec, 2016; Nollet et al., 2016; Marsat and Williams, 2011).

Studies that tried to investigate the relationship between environmental, social, and governance practices and firm performance, which solely concentrate on the companies listed in Borsa Istanbul and its indices are summarized below.

Saygili et al (2022) examined the effect of ESG practices on financial performance of the companies listed on the BIST Corporate Governance Index. The authors found that environmental disclosures have a negative effect on financial performance, however

stakeholder involvement in management and provisions about shareholders and top management have a positive effect on financial performance of the companies. Abdioglu (2020) analyzed the effect of the inclusion of companies in the BIST Sustainability Index on the firm value and found that firms that are listed in this Index have higher firm values. Karaca and Conkar (2022) investigated the impact of the financial risks on the value of stock prices of the companies in the BIST Sustainability Index and concluded that the financial risks of the companies affect the stock return rates negatively.

The literature review above revealed that the relationship between environmental, social, and governance activities and the firm performance have mixed results in various countries and stock markets. Although most of the studies showed a positive relation between ESG scores and firm performance, there are also studies proving a negative relation between these two variables.

The studies exploring this relationship for the companies listed in the Borsa Istanbul Sustainability Index are also quite limited in the literature. Therefore, this study will attempt to contribute to the literature by using the recent dataset to analyze the relationship between ESG scores and the firm performance of the companies in the BIST Sustainability Index.

### **Analysis**

In this section, the dataset and variables of the study will be presented, the hypothesis and the methodology of the study will be explained.

### **Data**

This study aims to analyze the relationship between individual ESG scores and the firm performance of the companies in the BIST Sustainability Index. The individual environment, social and governance scores, and firm performance data of the 62 companies in the BIST Sustainability Index are taken in the analysis. The 15 financial sector companies listed in the BIST Sustainability Index are excluded from the analysis due to the different balance sheet structure of these companies compared to the real sector companies.

ESG scores of these 62 companies are taken from the Refinitiv database as Borsa Istanbul used in the selection process of the companies in the Sustainability Index (Refinitiv, 2024). As the indicator of firm performance, two variables, namely net profit margin (NPM) as a representative of profitability, and earning per share (EPS) as a representative of firm value are determined. The firm performance variables dataset in the analysis are obtained from the financial statements of the companies, which are published regularly in the Borsa Istanbul Public Disclosure Program database (Borsa Istanbul, 2024b). As a result, a total of 310 observations are taken of ESG scores and firm performance dataset of 62 companies for the year 2022.

Refinitiv, as a London-based private company, is calculating the ESG scores for more than 15,000 companies around the world. Refinitiv calculates combined ESG scores and individual environment, social, and governance scores. Refinitiv's ESG scores measure the company's ESG performance across 3 main dimensions and 10 main themes, which are as follows; i) environmental (E-Environment) with three categories (emissions, resource use, innovation), ii) social (S-Social) with four categories (human rights, product responsibility, workforce, community), iii) corporate governance (G-Governance) with three categories (management, shareholders, CSR strategy). The company's combined ESG Score is calculated by weighting these individual scores for this three main dimension by the weightings of 34% for environment, 35.5% for social, and 30.5% for corporate governance (Refinitiv, 2024).

### Variables

To analyze the relationship between individual ESG scores and the firm performance of the companies in the BIST Sustainability Index, two dependent variables are used in the study. One of these variables is net profit margin, which is the indicator of profitability and the other variable is earning per share, which is the measure of firm value.

When the literature is examined, many studies used net profit margin as an indicator of profitability (Watson et al., 2004; Lopez et al., 2007; Movassaghi and Bramhandkar, 2012; Tippayawong et al., 2015; Norhasimah et al., 2016; Feng and Wang, 2016). The other dependent variable used in the study, earning per share, was used as a firm value indicator in many studies in the literature (Shen and Chang, 2009; Quazi and Richardson, 2012; Albertini, 2013; Kang and Liu, 2014; Chetty et al., 2015; Afza et al., 2015; Osazuwa and Che-Ahmad, 2016).

Three independent variables are used in the study. The independent variables used in the study are the individual environment score, social score, and governance score of the companies in the BIST Sustainability Index. Various studies used individual ESG scores of the Refinitiv database in their research (Chairani and Siregar, 2021; Naeem et al., 2022; Giannopoulos et al., 2022).

The combined ESG score is not included as an independent variable in the study. The main reason for this is to avoid the correlation that may arise from the inclusion of the combined ESG score in the study because of the fact that this combined ESG score is calculated by giving certain weights to the three individual ESG scores.

The variables used in the study, formulas, and abbreviations of the variables are presented in Table 1.

Table 1

#### *Dependent and independent variables*

<b>Dependent Variables</b>	<b>Formula</b>	<b>Abbreviation</b>
Net Profit Margin	Net Profit / Total Sales	NPM
Earning Per Share	Net Profit / Number of Shares	EPS
<b>Independent Variables</b>	<b>Formula</b>	<b>Abbreviation</b>
Environment Score	Refinitiv	ENV
Social Score	Refinitiv	SOC
Governance Score	Refinitiv	GOV

Table 2 presents descriptive statistics of the dependent and independent variables used in the analysis. When the dependent variables are analyzed, the mean value of NPM is 38.81% and the mean value of EPS is 13.41%. Since the standard deviation of NPM is quite high at 120.42%, it can be inferred that the volatility of the NPM of companies is very high during this period. The standard deviation of EPS, which is 22.95%, is lower than the standard deviation of NPM, but in general, it is partially high.

When the independent variables are analyzed, it is seen that the mean score of ENV is 77.16, the mean score of SOC is 81.67 and the mean score of GOV is 65.69. The companies in the analysis performed better in social practices, and worse in governance practices during this period. The standard deviation of the GOV is the highest one in the independent variables.

Table 2

*Descriptive statistics of the variables*

	N	Minimum	Maksimum	Mean	Standart Deviation
<b>Dependent Variables</b>					
NPM	62	-9.21	732.37	38.81	120.42
EPS	62	-2.15	149.11	13.41	22.95
<b>Independet Variables</b>					
ENV	62	39.00	99.00	77.16	12.54
SOC	62	44.00	98.00	81.67	11.45
GOV	62	34.00	90.00	65.69	15.23

### Hypotheses and Methodology

The hypotheses of the study are formed as follows. When the previous studies are analyzed, it is seen that there is a relationship between profitability and ESG scores, but there is no clarity on whether this relationship is negative or positive. Similarly, the relationship between firm value and ESG scores is positive in some cases and negative in others. Considering these aspects, the hypotheses of the study are established as follows:

H<sub>1</sub>: ENV scores have a significant effect on profitability

H<sub>2</sub>: SOC scores have a significant effect on profitability

H<sub>3</sub>: GOV scores have a significant effect on profitability

H<sub>4</sub>: ENV scores have a significant effect on firm value

H<sub>5</sub>: SOC scores have a significant effect on firm value

H<sub>6</sub>: GOV scores have a significant effect on firm value

Two models are formed in the study. In Model 1, the effect of independent variables (ENV, SOC, GOV) on profitability (NPM), as the first dependent variable is analyzed. In Model 2, the effect of independent variables on firm value (EPS), as the second dependent variable is analyzed.

Since all variables used in the models are ratio, the model equations are written as shown in equations (1) and (2).

$$NPM_{it} = b_0 + b_1 * ENV_{it} + b_2 * SOC_{it} + b_3 * GOV_{it} + E_{it} \dots\dots\dots(1)$$

$$EPS_{it} = b_0 + b_1 * ENV_{it} + b_2 * SOC_{it} + b_3 * GOV_{it} + E_{it} \dots\dots\dots(2)$$

The dependent variables  $EPS_{it}$  and  $NPM_{it}$  represent the firm performance of company  $i$  at time  $t$ , the independent variables  $ENV_{it}$ ,  $SOC_{it}$ , and  $GOV_{it}$  represent the ESG scores of company  $i$  at time  $t$ , and  $E_{it}$  represents the error term of company  $i$  at time  $t$ .

Multiple regression analysis is applied in the study and SPSS 24 package program is used to perform the analysis.

### Results

To interpret the results obtained from multiple regression analysis correctly and meaningfully, the assumptions of the applied method should be tested. There are five assumptions in multiple regression analysis. These assumptions are linearity, homogeneity, no multicollinearity, normality, and no autocorrelation problem. In this section of the study, the test results and regression results of the study are presented.

The correlation matrix between the dependent and independent variables as a result of the correlation analysis is given in Table 3.

Table 3

*Correlation matrix*

		NPM	EPS	ENV	SOC	GOV
NPM	value	1	-.080	.137	-.296*	-.039
	sig.		.537	.287	.019	.762
EPS	value	-.080	1	-.009	.269*	.037
	sig.	.537		.947	.035	.777
ENV	value	.137	-.009	1	.562**	.287*
	sig.	.287	.947		.000	.023
SOC	value	-.296*	.269*	.562**	1	.413**
	sig.	.019	.035	.000		.001
GOV	value	-.039	.037	.287*	.413**	1
	sig.	.762	.777	.023	.001	

\*\*All Pearson coefficients are statistically significant at 0.01 level,

\* All Pearson coefficients are statistically significant at 0.05 level

According to Table 3, it is seen that there is a significant negative relationship between the NPM and SOC variables with a value of -0.296. It can be said that a one-unit increase in the SOC variable will decrease the NPM variable by 0.296 units. Similarly, it is observed that there is a positive significant relationship between the EPS variable and the SOC variable with a value of 0.269. When the relationships between the independent variables are analyzed, it is seen that there is a significant relationship between ENV and SOC variables. When the significance levels of the relationship are examined, it is seen that it is significant at both 1% and 5% levels of significance, while there is a significant relationship between SOC and GOV variables. The significant relationship between independent variables may cause a multicollinearity problem in the model. However, it will be seen at the end of the analyses that there is no multicollinearity problem and the VIF values of all variables are below 10. Therefore, all of the independent variables are used in the model and analyses are performed accordingly.

The normality assumption, which is one of the important assumptions of regression, must also be met. When Table 4 is analyzed, it is seen that all variables and errors show normal distribution characteristics and the  $H_0$  hypothesis indicating that the normality assumption is met for all variables is accepted. Another important assumption that regression must be met is the co-variance assumption. Spearman correlation test was performed to test the co-variance assumption and as a result, the co-variance assumption is met.



Table 4

*Kolmogorov simirnov normality test*

Independent Variables	Sig.	H <sub>0</sub> : Variable normally distributed
ENV	0.077	Retain the H <sub>0</sub> hypothesis
SOC	0.053	Retain the H <sub>0</sub> hypothesis
GOV	0.200	Retain the H <sub>0</sub> hypothesis
Dependent Variables		
NPM	0.063	Retain the H <sub>0</sub> hypothesis
EPS	0.200	Retain the H <sub>0</sub> hypothesis
Unstandardized Residuals of Models		
Residuals for NPM model	0.091	Retain the H <sub>0</sub> hypothesis
Residuals for EPS model	0.122	Retain the H <sub>0</sub> hypothesis

Before running the models, all assumptions of the regression are tested and after the assumptions are met, the regression analysis is performed. Table 5 shows the results of the regression analysis of Model 1, in which the relationship between profitability (NPM) and ENV, SOC, and GOV variables is examined.

Table 5

*Model 1: Net profit margin (NPM) regression results*

Dependent Variable: NPM	B	t	Sig.	VIF
Constant	8.31	4.55	0.024	
ENV	4.20	3.13	0.003*	1.47
SOC	-6.01	-3.88	0.000*	1.62
GOV	0.56	0.55	0.579	1.21
R <sup>2</sup> = 0.227			F=5.676	
DurbinWatson=2.230			p=0.002	

When Table 5 is analyzed, it is seen that ENV and SOC variables have a significant effect on the profitability variable at a 5% significance level (p=0.003; 0.000 < 0.05). It can be said that the results obtained with the fulfillment of the assumptions of the model are correct. In this respect, one of the assumptions of the model is that there should be no multicollinearity problem among independent variables. When the VIF values are analyzed, it is seen that the VIF value of each variable is less than 10 and there is no multicollinearity problem between the variables.

Another important assumption is the absence of autocorrelation. It is seen that there is no autocorrelation problem in the established model (du < 2.23 < 4-du; 1.53 < 2.23 < 2.47). Before the model equation are established, the significance of the model as a whole is tested and it is found that the model is significant as a whole (0.002 < 0.05). After all assumptions are met, the Model 1 is established as follows.

$$NPM = 8.31 + 4.20 \cdot ENV - 6.01 \cdot SOC \dots\dots\dots(3)$$

When Model 1 is analyzed, a one unit change in the ENV variable will increase NPM by 4.20 units. A one-unit change in the SOC variable will decrease NPM by 6.01. According to the results obtained, while there is a positive relationship between the ENV variable and profitability (NPM), there is a negative relationship between the SOC variable and profitability (NPM). At the same time, it has been observed that the effect of the SOC variable on

profitability is higher than the ENV variable. The R<sup>2</sup> value showing the explanatory power of the independent variables on the dependent variable is 22.7%, but it can be said that the explanatory power is not at a high level. The reason for this is the low number of significant independent variables used in the model. Therefore, as a result of the analysis, the H<sub>1</sub> and H<sub>2</sub> hypotheses are accepted.

Table 6 shows the results of the regression analysis of Model 2, in which the relationship between firm value (EPS) and ENV, SOC, and GOV variables is examined.

Table 6  
*Model 2: Earning per share (EPS) regression results*

<b>Dependent Variable: EPS</b>	<b>B</b>	<b>t</b>	<b>Sig.</b>	<b>VIF</b>
Constant	-7.030	-0.773	0.044	
ENV	-0.416	-1.516	0.135	1.47
SOC	0.855	2.709	0.009*	1.62
GOV	-0.112	-0.545	0.588	1.21
R <sup>2</sup> = 0.166			F = 3.489	
Durbin Watson = 1.993			p = 0.022	

When Table 6 is analyzed, it is seen that the only variable affecting the EPS variable is SOC. The SOC variable is significant at a 5% level of significance (0.009 < 0.05), but the other variables (ENV, GOV) are insignificant at a 5% level of significance. All assumptions are tested to make sure that the model gives meaningful and accurate results. Firstly, it is tested that there is no multicollinearity problem among the independent variables and it is seen that the VIF values of all variables are less than 10. The other assumption of no autocorrelation is tested and it is found that there is no autocorrelation ( $du < 1.993 < 4-du$ ;  $1.53 < 1.993 < 2.47$ ).

Table 4 is analyzed for the normality assumption. It is found that the errors of the equation established for all variables and Model 2 also satisfies the normal distribution property. Similarly, it is observed that the assumption of co-variance is also met. When the significance of the model as a whole is tested, the probability value of 0.022 is found to be significant at the 5% significance level. After all assumptions are met, the Model 2 is established as follows.

$$EPS = -7.030 + 0.855 \cdot SOC \dots \dots \dots (4)$$

When Model 2 is analyzed, a one-unit increase in the SOC variable will increase the EPS variable by 0.855 units. The explanatory power of the independent variable by the dependent variable is again low, which is the R<sup>2</sup> value of 16.6%, but since only one independent variable is significant, this result is considered to be normal. Therefore, as a result of the analysis, the H<sub>5</sub> hypothesis is accepted.

**Conclusion**

This study aims to analyze the relationship between individual ESG scores and the firm performance of the companies in the BIST Sustainability Index. The individual environment, social and governance scores, and firm performance dataset of the 62 companies in the BIST Sustainability Index for the year 2022 are analyzed by applying multiple regression analysis. As an indicator of firm performance, two dependent variables are determined, namely net profit margin as indicator of profitability and earning per share as indicator of firm value. Two models are used to analyze the relationship between ESG scores and firm performance. Model 1 examines the relationship between net profit margin and individual ESG scores of

the companies, and Model 2 examines the relationship between earning per share and individual ESG scores of the companies.

According to the results of Model 1, in which net profit margin is the dependent variable as a profitability indicator, it is found that there is a positive relationship between individual environment score and profitability, whereas there is a negative relationship between individual social score and profitability. Individual governance score has no relationship with profitability. The results show that the environmental investments and practices of the companies in the BIST Sustainability Index contribute to the profitability of these companies. However, costs associated with responsible production, higher levels of payments to the workforce, and expenditures of social programs to the community, which comprise the social aspects of sustainability, increase the expenses, thus decreasing the profitability of these companies.

According to the results of Model 2, in which earning per share is the dependent variable as a firm value indicator, it is found that there is a positive relationship between individual social score and firm value. Individual environment and governance scores have no relationship with firm value. The results showed that the activities of the companies under the social dimension of sustainability are rewarded by the market and the earning per share of the companies are affected positively by these activities.

The findings obtained from this study are expected to contribute to the establishment of practices and policies in the field of sustainability by companies and public authorities. Within the framework of sustainability, companies should develop more sustainable practices by allocating resources to environmental, social and governance areas. Public authorities should also both support sustainable practices in public institutions and orientate the activities of reel sector companies with the policies and regulations.

This study contributes to the literature by using the recent dataset to analyze the relationship between ESG scores and firm performance of the companies in the BIST Sustainability Index. However, this relationship can also be analyzed in future research for the listed companies from different sectors in the other indices of Borsa Istanbul and for the specific themes of the main dimensions of the ESG scores, such as emissions under environment dimension, community under the social dimension and management under governance dimension of the sustainability.

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