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Environmental, Social, and Governance (ESG) Scores and Financial Performance of Publicly Listed Companies in Turkey[1]

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Türkiye'de Halka Açık Şirketlerin Çevresel, Sosyal ve Yönetişim (ESG) Puanları ve Finansal Performansı	**Environmental, Social, and Governance (ESG) Scores and Financial Performance of Publicly Listed Companies in Turkey**
Öz Bu çalışmada işletmelerin çevresel, sosyal ve kurumsal yönetim (ESG) yatırımlarına yönelik çabalarının finansal performanslarına da yansıyıp yansımadığı sorusuna cevap aranmıştır. Bu çerçevede 2009-2019 yılları arasında finans sektörü dışında yer alan firmaların ESG puanlarının piyasa temelli ve muhasebe temelli performans göstergeleri üzerindeki etkileri incelenmiştir. Elde edilen bulgulara göre ESG uygulamaları firmaların performans göstergeleri üzerinde pozitif bir etkiye sahiptir. ESG'nin alt bileşenleri kullanılarak gerçekleştirilen ek analizlerin sonuçlarına göre ise çevresel boyutun her üç bileşeni de performansı pozitif etkilerken, sosyal ve kurumsal yönetim boyutları ile ilgili bazı alt bileşenlerin performans ile istatistiksel olarak ilişkili olmadıkları bulgusuna ulaşılmıştır.	**Abstract** In this paper, the question of whether the efforts of businesses on environmental, social and corporate governance (ESG) investments are also reflected in their financial performance is tried to be answered. In this context, the effects of ESG scores of non-financial firms between 2009-2019 on market-based and accounting-based performance indicators were examined. According to the findings, ESG scores positively affect the performance indicators of companies. According to the results of the additional analyzes using the sub-components of the ESG, it was found that while all three components of the environmental dimension affect performance positively, some sub-components related to the social and corporate governance dimensions are not statistically related to performance.
Anahtar Kelimeler: Çevresel, Sosyal ve Kurumsal Yönetim (ESG), Performans, Tobin Q, Aktif Kârlılığı, Özkaynak Kârlılığı	**Keywords:** Environmental, Social, and Governance (ESG), Performance, Tobin's Q, Return of Assets, Return of Equity
JEL Kodları: L25; Q56, C23	**JEL Codes:** L25; Q56, C23

Araştırma ve Yayın Etiği Beyanı	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
Yazarların Makaleye Olan Katkıları	Çalışmanın tamamı üç yazar ile birlikte oluşturulmuştur. Yazarlar eşit oranda katkı sağlamıştır.
Çıkar Beyanı	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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1. Introduction

The significance of a company's performance and the factors that influence it are crucial for professionals and scholars across various disciplines due to their wide-ranging implications and repercussions. Notably, it can directly impact a company's financial health and stability, thereby affecting shareholders and stakeholders. Moreover, a company's performance can also have a broader impact on the overall economy, affecting the livelihoods of the whole community. Given its complexity and scope, gaining insight into the performance of a company requires a multidisciplinary approach that draws on expertise and knowledge from various domains, including finance, economics, management, accounting, and marketing.

To develop effective strategies and make informed decisions that enhance overall performance, practitioners and researchers must understand the factors that determine a company's performance. This requires consideration of not only financial data but also non-financial factors that could significantly impact future performance. This is because, today, companies are increasingly investing in assets that cannot be imitated, are rare, and lack substitutes to gain a sustainable competitive advantage within the framework of the resource-based view theory (Barney, 1991). This has rendered traditional financial information inadequate for evaluating a firm's future performance and profits.

Environmental, social, and corporate governance (ESG) activities are gaining traction among practitioners as they seek to pursue both long-term investment opportunities and make a meaningful impact on society. Business managers recognize the importance of ESG and sustainability activities since they play a crucial role in the long-term viability and reputation of a company. Investors, financial analysts, and policymakers are also utilizing non-financial ESG information to obtain a holistic assessment of a company's performance and future prospects in the market (Zuraida et al., 2018: 458). More specifically, over the past decade, ESG investing has experienced significant growth, with professionally managed portfolios that incorporate crucial aspects of ESG assessments surpassing USD 17.5 trillion globally (Boffo and Patalano, 2020). According to a report by PwC, it is anticipated that asset managers worldwide will increase their management of ESG-related assets under management to $33.9tn by 2026, compared to $18.4tn in 2021 (PwC, 2022). Another study that included 1,300 decision-makers who work in finance, ESG, and sustainability from 13 global markets showed that in the last three years, 75% of organizations have begun formally reporting their ESG, climate, and sustainability, or corporate social responsibility data (Workiva, 2022).

Scholars have long been debating and discussing the measurement, reporting, and potential financial impact of ESG activities on companies. According to Fatemi et al. (2015), firms that prioritize environmental investment and social responsibility may witness an enhancement in their financial performance and overall worth. Additionally, as per Chouaibi et al. (2022), investors consider a firm's ESG practices while assessing investment risks and opportunities, which indicates that a company's ESG performance could affect its stock prices and bond yields. There are studies (Aras and Crowther, 2008; Branco and Rodrigues, 2008; Chouaibi et al., 2022; Lee et al., 2009; Velte, 2017) that found that investing in ESG activities has a positive effect on financial performance; there are also studies that concluded that it has a negative effect (Atan et al., 2018; Duque-Grisales and Aguilera-Caracuel, 2021; Fatemi et al., 2015; Wang and Sarkis, 2017). These studies, however, have predominantly focused on companies in developed nations, leaving a gap in understanding the impact of ESG activities

on the financial performance of firms in developing economies. This study aims to address this gap by conducting an empirical investigation into the effects of ESG activities on the financial performance of publicly listed non-financial Turkish firms between 2009 and 2019. Furthermore, this study seeks to make a significant contribution to the existing literature by examining the impact of ESG practices on financial performance using an overall financial performance indicator that integrates accounting-based and market-based performance measures and by exploring the distinct effects of the ten sub-components of ESG on firm performance.

The ESG scores of each firm were retrieved from the Refinitiv Eikon database. Refinitiv objectively measures a firm's ESG performance based on data reported by firms. Both market-based (Tobin q) and accounting-based (return on assets and return on equity) indicators were used to measure financial performance. In addition, a general financial performance indicator was created by using principal components analysis based on these three performance indicators. The models also incorporated several firm characteristics that have been demonstrated to affect performance in prior studies. Empirical models were estimated using ordinary least squares regression with the Driscoll-Kraay standard errors method.

The study found that ESG activities have a positive impact on a company's financial performance, with higher ESG performance leading to better financial performance. Further analysis of the sub-components of ESG revealed that companies with higher scores in CSR strategy, emission reduction, workforce, resource use, innovation, and management had a better financial performance. While all three components of the environmental dimension had a positive effect on performance, some sub-components related to social and corporate governance dimensions did not show a statistically significant relationship with performance. Overall, the study suggests that the financial performances of the companies that pay the necessary attention to the environment and work towards making the world more sustainable are higher than the others.

The next sections of the paper are as follows. Chapter 2 focuses on the conceptual framework. In Chapter 3, the hypothesis development is discussed. In Chapter 4, the sample, data, variables, and empirical model are discussed. Empirical findings are presented in Chapter 5. Finally, the article is concluded with Chapter 6.

2. Conceptual Framework

In the current globalized world, the contagion effect has made it possible for events in one part of the world to have an impact on activities in another part. This has resulted in companies dedicating significant time to risk management and taking precautions to safeguard themselves. The consequences of such events can also have a financial impact on companies. As organizations that play a pivotal role in shaping society and fulfilling investor expectations, they adopt a solution-focused approach and establish defensive measures to protect against both systematic and unsystematic risks. To achieve this, companies invest not only in physical assets but also intangible assets.

At this point, investors have been discussing alternative sources of information as the financial reports of companies are insufficient in providing guidance on how to record and report intangibles. In particular, the investors, who realized that the environmental, social, and managerial competencies of companies, which are the biggest trump cards against the above-mentioned risks, affect the future and value of the companies, started to expect

companies to make financial statements on these issues. To respond to the expectations of all stakeholders, especially investors, companies make the necessary efforts to review their responsibilities and to create a reporting system accordingly (Aras and Sarıoğlu, 2015: 22-23).

Corporate sustainability practices encompass a broad spectrum of environmental, social, and corporate governance (ESG) issues. Examples of environmental issues include climate change, carbon emissions, energy consumption, and water usage, while social issues can include human rights, gender equality, product and customer information, and health and safety. Corporate governance issues such as the independence of the board of directors, reporting and disclosure, anti-corruption measures, and shareholder protection are also significant aspects of ESG (Galbreath, 2013: 530; Amel-Zadeh and Serafeim, 2018: 87).

ESG is not only associated with ethical and socially responsible investment but is also regarded as a critical indicator of risk management and non-financial performance (Galbreath, 2013: 530). The growing interest of responsible investors in a company's ESG performance has compelled firms to adopt stakeholder-oriented strategies and prioritize social values in their operations. Market participants are now using ESG information in addition to financial data, which has limited usefulness in predicting a company's future cash flow (Zuraida et al., 2018: 458). More specifically, in the last 25 years, there has been significant and substantial growth in the number of firms assessing and disclosing ESG information. While the number of companies publishing ESG data was not even 20 in the early 1990s, this number increased to 9,000 in 2016; thus, there has been an increase in investors' interest in ESG data (Amel-Zadeh and Serafeim, 2018: 87). Research suggests that companies with a strong commitment to corporate sustainability tend to benefit from shared values within their business and society at large (Alsayegh et al., 2020: 3910-3911).

ESG performance is also viewed as a proxy for the quality of management (Taliento et al., 2019: 1742). Companies are obligated to comply with ESG policies, which can help prevent information asymmetry between internal and external stakeholders, provide greater access to information, and ultimately build trust in the company (Yen-Yen, 2019: 469). Numerous studies have documented the economically significant impacts of ESG, including reduced capital constraints, lower capital costs, and correlations with share price movements (Amel-Zadeh and Serafeim, 2018: 87). Moreover, ESG constitutes a pillar of corporate social responsibility for the development of sustainable strategies that have an impact on the financial performance of companies (Duque-Grisales and Aguilera-Caracuel, 2021: 315; Galema et al., 2008).

3. Hypothesis Development

The adoption of an ESG approach has prompted companies to pursue enlightened management practices and prioritize long-term returns driven by both ethical and financial considerations (Nasdaq, 2019: 5). Companies that demonstrate ethical and responsible behavior, which enhances societal welfare and strengthens their competitive position, are more likely to achieve superior value and performance (Mohammad and Wasiuzzaman, 2021: 9). Semenova et al. (2010) found a significantly positive relationship between environmental and social factors and market value in their study on companies traded in OMX Stockholm. They stated that firms with higher environmental and social performance have higher stock prices. In a study using the example of Malaysia and Singapore, Tarmuji et al. (2016) examined the effect of ESG practices on economic performance and presented empirical evidence that social and corporate governance practices affect economic performance.

Finding that ESG disclosures have a positive and significant effect on firm performance, Yen-Yen (2019) stated that non-financial disclosures lead to better firm value. Ting et al., (2020) found that ESG initiatives positively affect firm performance. In their research, they used the ESG scores of companies operating in developed and emerging markets between the years 2014-2018. Bahadori et al. (2021) concluded that firms with higher ESG scores have a higher level of profitability. On the results of the analyzes conducted using the sustainability reports of companies traded in the BIST between 2008 and 2014, Düzer and Önce (2019) assert that sustainability performance indicators have a positive effect on firm performance. Çimen (2019) found that being included in the BIST Sustainability Index positively affects the performance of companies. In another study conducted on companies traded on the BIST, Ateş (2021), using data from the years 2009-2017, concluded that corporate social performance levels have a positive relationship with financial performance. Şişman and Çankaya (2021) carried out an analysis using the ESG data of companies in the airline industry between 2010 and 2017 and found that there was a positive relationship between ESG score and return on assets (ROA).

This paper draws upon the findings and theoretical discussions outlined in the aforementioned studies to suggest that a company's ESG performance has a positive impact on its financial performance. As a result, as a company's ESG scores improve, its financial performance is expected to improve accordingly. This may be due to the fact that ESG practices can influence financial performance directly, as well as indirectly, by enhancing operational efficiency, reducing risks, fostering creativity, and improving satisfaction among customers and employees. Based on these arguments, this paper posits the following primary hypothesis:

Hypothesis 1: As the firms' ESG scores increase, their financial performance also increases.

4. Methodology

4.1. Sample

This paper aimed to investigate how ESG practices are related to the financial performance of listed non-financial companies in Turkey. With this aim, the companies whose ESG scores can be reached between the years 2009-2019 constitute the sample of the research. The ESG score is the company's environmental, social, and corporate governance score gathered by Refinitiv. Refinitiv publishes ESG scores that aim to objectively measure a firm's ESG performance based on data reported by firms. Market-based (TOBIN q) and accounting-based (ROA, ROE) indicators were used to measure financial performance. The financial statement information of the companies was also accessed through the Refinitiv Eikon database. To ignore the effects of the financial crisis in 2008 and the COVID-19 Pandemic in 2020 on the activities of the companies, the relevant years were not included in the sample. To avoid the effect of extreme values, the values outside the 1st and 99th percentiles of the variables were set to the value corresponding to the 1st and 99th percentiles, respectively. Finally, the research sample consists of 36 firms and 189 firm-year observations. The industries of these companies are as follows: basic materials (24 observation), consumer cyclicals (48 observation), consumer non-cyclicals (37 observation), energy (12 observation), healthcare (1 observation), industrials (37 observation), real estate (9 observation), technology (21 observation). The names of the firms included in the sample are given in Appendix 1. Sample distribution by years in the sample is given in Appendix 2.

Table 1 includes the definitions of the variables.

Table 1: Definitions and Explanations of Variables

Variables		**Descriptions of Variables**
Dependent variable	ROA	Return on assets is calculated as the ratio of net profit to total assets.
	ROE	Return on equity is calculated as net income divided by equity.
	TOBIN	TOBIN is calculated by dividing the market value by the book value. Its formula can be represented as: [Total assets - Equity + (Number of shares x Share price)] ÷ Total assets
	PERFORM	PERFORM is an overall financial performance indicator created using principal components analysis based on three performance indicators (ROA, ROE, and TOBIN). Higher values of the variable indicate higher financial performance.
Independent variables	ESG	ESG Score refers to the overall ESG score of firms calculated by Refinitiv based on the information reported within the environmental, social, and corporate governance components.
	RES	Resource Use Score is a measure of a company's ability to minimize its usage of materials, energy, or water and to implement sustainable practices in its supply chain management.
	EMS	Emission Reduction Score evaluates a company's efforts and success in lowering the amount of pollution it generates through its production and daily operations.
	EIS	Innovation Score measures a company's potential to decrease its environmental expenses and increase revenue by developing new environmentally friendly technologies, procedures, or products.
	WFS	Workforce Score assesses a company's success in promoting employee satisfaction, providing a safe and healthy work environment, fostering a diverse and inclusive workplace, and offering opportunities for personal and professional growth.
	HRS	Human Rights Score evaluates a company's adherence to basic human rights standards. It measures the company's performance in treating its employees, customers, and other stakeholders with respect, dignity, and fairness.
	CMS	Community Score assesses a company's dedication to being a responsible member of society, safeguarding public health, and adhering to ethical business practices.
	PRS	Product Responsibility Score is an indicator of a company's ability to produce goods and services of high quality by incorporating integrity, protecting customer data, and ensuring customer safety and well-being.
	MNS	Management Score evaluates a company's dedication and success in adhering to the highest principles of corporate governance.
	SHS	Shareholders Score assesses a company's success in treating its shareholders fairly and using tools to prevent hostile takeovers.
	CSR	CSR Strategy Score evaluates the way a company integrates social, environmental, and economic considerations into its daily decision-making process and communicates the same to the stakeholders.
Control Variables	SIZE	Size is defined as the natural logarithm of total assets.
	AGE	Firm age is the natural logarithm of firm age.
	LEVERAGE	Leverage is defined as the ratio of total debt to total assets.
	LIQUIDITY	Liquidity is defined as the ratio of current assets to current liabilities.
	SALES_G	Sales growth is defined as the change in net sales over the past year.
	LOSS	Loss is a dummy variable that is equal to 1 for firms reporting a loss in the current year and 0 for other firms.
	RISK	Risk represents firm risk and is defined as the absolute difference between the annual percentage change in net income after taxes of a given firm i in year t and the average of this change of firm i over the sample period.

4.2. Empirical Model

The following model was formed to test the relationship between ESG scores and firm performance.

$$Y_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 Control_{it} + \beta_3 Year_{it} + \beta_4 Firm_{it} + \varepsilon_{it} \quad (1)$$

The i indices in the model represent the firms and the t indices represent the years. Y_{it} represents return on assets (ROA), return on equity (ROE), TOBIN q, and overall performance measure (PERFORM), respectively. The independent variable of the study, ESG_{it}, represents the company's ESG score. Various firm characteristics that have been shown to have an impact on performance in previous studies are also included in the analysis model. $Control_{it}$ refers to firm characteristics that are considered as control variables. These variables are size, age, leverage, liquidity, sales growth, loss, and risk. In addition, dummy variables related to years and companies were included in the analysis model in order to eliminate the omitted variable bias. $Year_{it}$ represents the year dummy variables; $Firm_{it}$ represents the firm dummy variables. ε_{it} is the error term. Detailed explanations of the variables are shown in Table 1.

The dataset is panel data, as it includes observations over time and across different firms. However, due to the unavailability of data for certain years for some of the firms included in the sample, an unbalanced panel data set is present. Panel data analysis is frequently used in the fields of economics and finance because it provides the opportunity to conduct empirical studies that cannot be obtained by using only time series data or cross-sectional data (Tarı, 2010). Therefore, to analyze the experimental model, panel data analysis techniques were employed. More specifically, the empirical model was estimated using the Driscoll-Kraay standard errors method. Driscoll and Kraay (1998) standard error method provides results that are robust to heteroskedasticity and general temporal and cross-sectional dependency problems (Hoechle, 2007)).

4.3. Descriptive Statistics

Descriptive statistics of the variables are given in Table 2. ROA mean (median) was 0.08 (0.07), ROE mean (median) was 0.19 (0.18), and TOBIN Q mean (median) was 1.59 (1.36). The averages of the sub-components of the ESG score, namely resource use, emissions, innovation, labor, human rights, society, product responsibility, management, shareholders, and CSR strategy, are 46.20, 46.19, 25.31, 60.97, 29.79, 53.21, 46.22, 51.86, 52.49, and 39.69, respectively. The workforce size has the highest average of the ESG sub-components. This can be interpreted as an indication that companies care about their employees. On the other hand, the innovation and human rights components have the lowest ratings. The average of ESG score is 46.43.

Table 3 shows the correlation coefficients between variables and variance inflation factor of variables. There is a negative correlation between ESG score and ROA, ROE, TOBIN Q, and Perform variables. The existence of a high correlation coefficient (>0.70) among the variables in the regression model may cause a multicollinearity problem. It tested whether there was a multicollinearity problem between the variables via variance inflation factor (VIF). If the calculated VIF value is greater than 0.10, it means that there is multicollinearity. According to the results, it was seen that there was no multicollinearity problem since the VIF values were less than 0.10.

Table 2: Descriptive Statistics

Variables	Observation	Mean	St. Deviation	Median	Minimum	Maximum
ROA	225	0.08	0.06	0.07	-0.03	0.33
ROE	225	0.19	0.14	0.18	-0.22	0.55
TOBIN	226	1.59	0.88	1.36	0.68	5.51
PERFORM	225	0.00	1.41	-0.23	-6.32	5.71
SIZE	226	23.07	0.89	23.17	20.82	24.96
AGE	226	3.62	0.56	3.66	1.61	4.22
LEVERAGE	226	0.29	0.17	0.31	0.00	0.60
LIQUIDITY	226	2.04	2.30	1.48	0.61	13.12
SALES_G	189	0.18	0.22	0.16	-0.33	1.13
LOSS	226	0.05	0.22	0.00	0.00	1.00
RISK	189	176.7	595.6	34.49	0.02	5466
ESG	226	46.43	20.01	49.29	2.57	92.55
RES	226	46.20	32.86	49.69	0.00	98.72
EMS	226	46.19	32.61	48.99	0.00	99.49
EIS	226	25.31	29.51	17.38	0.00	98.44
WFS	226	60.97	24.93	65.69	2.89	99.00
HRS	226	29.79	34.24	14.50	0.00	97.83
CMS	226	53.21	27.94	55.69	2.48	98.52
PRS	226	46.22	31.86	48.75	0.00	99.73
MNS	226	51.86	29.07	55.45	0.81	98.39
SHS	226	52.49	28.79	54.02	0.81	99.19
CSR	226	39.69	30.55	38.64	0.00	99.12

Table 3: Correlation Matrix

Variables		1	2	3	4	5	6	7	8	9	10	11	12	VIF
ROA	**1**	1												-
ROE	**2**	0.79***	1											-
TOBIN	**3**	0.44***	0.53***	1										-
PERFORM	**4**	0.87***	0.89***	0.72***	1									-
SIZE	**5**	-0.36***	-0.35***	-0.50***	-0.45***	1								1.20
AGE	**6**	0.05	0.11	-0.04	0.07	0.06	1							1.03
LEVERAGE	**7**	-0.53***	-0.25***	-0.31***	-0.43***	0.17**	0.005	1						1.46
LIQUIDITY	**8**	0.58***	0.18***	-0.02	0.31***	-0.26***	-0.06	-0.43***	1					1.34
SALES_G	**9**	0.23***	0.23***	0.05	0.18**	0.07	0.03	-0.05	0.07	1				1.03
LOSS	**10**	-0.37***	-0.52***	-0.10	-0.44***	0.10	-0.07	0.19***	-0.09	-0.07	1			1.07
RISK	**11**	-0.06	-0.06	-0.10	-0.08	0.05	0.07	0.14*	-0.07	0.02	0.02	1		1.05
ESG	**12**	-0.33***	-0.14**	-0.11*	-0.25***	0.27***	0.11*	0.37***	-0.33***	0.07	0.01	-0.07	1	1.36

5. Empirical Results

Table 4 shows the results of the analysis regarding the effect of the ESG score on firm performance. Columns (1)-(4) show the findings related to return on assets, return on equity, Tobin q ratio, and overall performance variables, respectively. First, all models in Table 4 are statistically valid when looking at the F, P, and R2 values. In other words, all models have a statistically significant predictive ability on firm performance. It is seen that the ESG coefficient in the models is 0.000 (t=2.22), 0.001 (t=2.44), 0.009 (t=2.37), and 0.014 (t=2.58), respectively. The coefficient of the ESG score is statistically significant at the level of 0.10 in the ROA model. In ROE, TOBIN q, and overall performance models, it is statistically significant at the 0.05 level. According to these results, ESG has a positive effect on the performance of firms. Therefore, the hypothesis suggesting that the higher the ESG score, the higher the performance of the firms is supported.

Tablo 4: Analysis Results

Variables	(1) ROA	(2) ROE	(3) TOBIN	(4) PERFORM
ESG	**0.000***	**0.001****	**0.009****	**0.014****
	(2.22)	**(2.44)**	**(2.37)**	**(2.58)**
SIZE	-0.014	-0.036	-1.039***	-0.853**
	(-0.81)	(-0.70)	(-7.42)	(-2.31)
AGE	0.110	0.271	6.878***	5.303**
	(1.04)	(0.84)	(7.59)	(2.29)
LEVERAGE	-0.125***	-0.041	-0.263	-1.462***
	(-6.33)	(-0.98)	(-0.58)	(-3.44)
LIQUIDITY	0.011*	0.011	-0.129*	0.059
	(2.22)	(0.97)	(-2.10)	(0.59)
SALES_G	0.045***	0.100***	0.365***	0.956***
	(3.86)	(4.20)	(4.03)	(4.55)
LOSS	-0.051***	-0.221***	0.111	-1.075***
	(-3.74)	(-6.43)	(0.86)	(-4.14)
RISK	-0.000	-0.000	-0.000***	-0.000*
	(-0.94)	(-0.02)	(-5.36)	(-2.10)
Constant	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Firm effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
Observations	189	189	189	189
Number of firms	36	36	36	36
Adjusted R^2	0.427	0.391	0.465	0.427
F – value	39862***	9100***	44013***	18889***

t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

This finding is also supported by previous findings in the literature. In studies investigating the effect of ESG activities on financial performance using various time intervals and samples in Turkey, it has been found that the performance of companies that attach more importance to environmental, social, and corporate governance practices has been positively affected by this situation (Düzer and Önce 2019; Ateş, 2021). In addition, studies conducted in various parts of the world have proven that ESG disclosures have a positive effect on firm performance (Semenova et al., 2010; Tarmuji et al., 2016; Yen-Yen, 2019; Ting, 2020; Bahadori et al., 2021). The disclosure of ESG commitments and the extent to which they are fulfilled allows the company's strategy and objectives to be examined from the point of view

of current and potential investors, so investors who have the opportunity to access more information about the company can evaluate the companies better. Easier access to information can lead to an increase in the value of the company (Yen-Yen, 2019). In addition, firms with strong financial performance can be able to use their resources to be more beneficial to society and to do good for others. ESG activities can also reduce conflicts of interest between managers and stakeholders. Thus, businesses can have a better perception in the eyes of society, and this can improve company performance (Waddock, 1997:312; Hamilton et al., 1993: 64). Since companies have not yet invested in ESG activities as much as necessary, it can be said that participants in the market position companies that perform ESG activities differently from those that do not and see them as companies worth to invest (Jo and Harjoto, 2012).

Table 5 contains the results of additional analyzes using subcomponents of the ESG to support the main finding in Table 4. Considering the results of the analysis using the return on assets ratio as the dependent variable in Table 5 Panel A, coefficients of Emission, Innovation, Workforce, and CSR Strategy are statistically significant, while others are statistically insignificant. In Panel B, coefficients of Emission, Innovation, Workforce, and CSR Strategy are again statistically significant, while others are statistically insignificant. In Panel C, coefficients of Resource Use, Emission, Innovation, Workforce, Management, and CSR Strategy are statistically significant, while others are statistically insignificant. In Panel D, coefficients of Resource Use, Emission, Innovation, Workforce, and CSR Strategy are statistically significant, while others are statistically insignificant. The coefficients of the variables found to be significant are positive in the results of the four dependent variables, which supports the results of the main hypothesis.

Resource use, emissions, and innovation are the subcomponents of the environmental dimension of ESG. The environmental dimension of ESG assesses a company's environmental impact and management, including its efforts to mitigate and reduce negative impacts, as well as its adherence to environmental regulations and sustainability initiatives. ESG data can provide insight into a company's long-term environmental performance and potential risks, which can be useful for investors and analysts in making investment decisions. Additionally, companies that score well on the environmental dimension of ESG may be considered more socially responsible and may be seen as a more sustainable long-term investment. In Table 5, it was found that all three components of the environmental dimension positively affect performance. Companies with strong environmental performance may reduce their costs by using energy and natural resources more efficiently. Also, companies with good environmental performance may also be better positioned to capitalize on opportunities related to sustainability and clean energy. According to this, it has been found that if companies give weight to environmental factors, their performance will also increase.

Tablo 5: Impact of ESG Components on Performance

Panel A: Dependent Variable ROA										
	Environmental			Social				Governance		
	RES	EMS	EIS	WFS	HRS	CMS	PRS	MNS	SHS	CSR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ESG	0.000	**0.000****	**0.000*****	**0.000*****	0.000	0.000	-0.000	-0.000	0.000	**0.000***
	(1.41)	**(2.79)**	**(6.03)**	**(3.97)**	(1.11)	(0.75)	(-0.40)	(-0.14)	(0.40)	**(2.11)**
Controls	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	189	189	189	189	189	189	189	189	189	189
Adjusted R^2	0.419	0.434	0.436	0.430	0.415	0.415	0.414	0.414	0.414	0.425
Panel B: Dependent Variable ROE										
	Environmental			Social				Governance		
	RES	EMS	EIS	WFS	HRS	CMS	PRS	MNS	SHS	CSR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ESG	0.001	**0.001*****	**0.001*****	**0.0001****	0.000	0.000	0.000	-0.000	-0.000	**0.001****
	(1.68)	**(3.33)**	**(5.79)**	**(2.65)**	(0.84)	(0.45)	(0.18)	(-0.85)	(-0.26)	**(2.57)**
Controls	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	189	189	189	189	189	189	189	189	189	189
Adjusted R^2	0.387	0.412	0.414	0.393	0.377	0.376	0.376	0.378	0.376	0.393
Panel C: Dependent Variable TOBIN										
	Environmental			Social				Governance		
	RES	EMS	EIS	WFS	HRS	CMS	PRS	MNS	SHS	CSR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ESG	**0.004*****	**0.004***	**0.004*****	**0.005*****	0.001	0.003	0.001	**0.002****	-0.000	**0.003***
	(4.25)	**(1.95)**	**(6.67)**	**(4.02)**	(1.08)	(1.20)	(1.02)	**(2.40)**	(-0.27)	**(1.97)**
Controls	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	189	189	189	189	189	189	189	189	189	189
Adjusted R^2	0.468	0.458	0.453	0.464	0.437	0.442	0.437	0.439	0.436	0.446
Panel D: Dependent Variable PERFORM										
	Environmental			Social				Governance		
	RES	EMS	EIS	WFS	HRS	CMS	PRS	MNS	SHS	CSR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ESG	**0.006****	**0.009*****	**0.008*****	**0.009****	0.002	0.003	0.000	-0.000	-0.001	**0.006****
	(2.73)	**(2.86)**	**(6.98)**	**(4.42)**	(1.35)	(1.04)	(0.01)	(-0.08)	(-0.58)	**(2.37)**
Controls	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	189	189	189	189	189	189	189	189	189	189
Adjusted R^2	0.421	0.440	0.436	0.430	0.406	0.407	0.404	0.404	0.404	0.422

t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

It was also found that only the workforce score, which is one of the sub-components of the social dimension, positively affects financial performance. The workforce score is an ESG factor that measures how well the business performs on issues such as working conditions, recruitment and promotion processes, and job security of its employees. A well-managed workforce will show itself through results such as high performance, low absenteeism rates, and reduced occupational accidents. This increases the productivity and efficiency of the company and contributes to financial performance by reducing costs. However, the lack of impact from other sub-components of the social dimension on financial performance may be attributed to socio-economic conditions in Turkey. On the other hand, although these components do not have a direct effect on financial performance, it should not be ignored that they have a direct effect on increasing the sustainability of enterprises and protecting the corporate reputation.

6. Conclusion

Environmental, social, and corporate governance (ESG) practices have become a subject that is closely followed in the world. ESG has been the focus of many people, such as companies, investors, financial analysts, and policymakers (Semenova et al., 2010: 265). Because in today's, an event that occurs in one corner of the world can affect the activities in another, and companies try to respond to these risks with their physical and non-physical capital and skills against various risks. At this point, market interest is increasing, especially for businesses that are sensitive to their immediate and distant environment, protect the rights of the human resources they work with, and protect the interests of their shareholders and other stakeholders. Both individual and institutional investors are more interested in the activities of firms that go beyond the objectives of maximizing shareholder wealth. In this context, businesses with high ESG performance draw attention (Gillan et al., 2010: 1).

An important research question will be whether the efforts of companies that increase their ESG investments and improve their ESG performance are reflected in their traditional performances. In this paper, based on the argument that ESG practices are one of the mechanisms that protect companies against both systematic and unsystematic risks, it has been considered that the ESG performance of companies will have positive effects on their financial performance, and therefore, as the company's ESG scores increase, the financial performance will also increase. In order to test the hypothesis, non-financial Turkish companies were included in the research sample between 2009 and 2019. Empirical models were estimated using ordinary least squares regression with the Driscoll-Kraay standard errors method. Thus, results that are robust to heteroscedasticity, and general temporal and cross-sectional dependency problems were obtained.

According to the findings, ESG practices have a positive effect on the performance indicators of companies. Therefore, as the ESG performance of companies increases, their financial performance also increases. According to the results of the additional analyzes carried out using the sub-components of the ESG, it was found that while all three components of the environmental dimension affect performance positively, some sub-components related to the social and corporate governance dimensions are not statistically related to performance. According to this, it has been concluded that the financial performances of the companies that pay the necessary attention to the environment are higher than the others.

This study not only contributes to studies examining the impact of ESG practices on financial performance through a sample of other developing countries (for Malaysia, see Atan et al., 2018) but also contributes to previous studies conducted on companies in Turkey with different ESG measurement methods. For example, Düzer and Önce (2019) examined the sustainability reports of 30 companies traded on the BIST between 2008 and 2014 and investigated their ESG performances over the economic, environmental, and social performance sub-components in line with GRI reporting principles. Moreover, Kulalı (2022) investigated the relationship between the ESG performance of the firms traded in Borsa Istanbul and the market value and the role of firm size in this relationship between the years 2016-2020. The researcher found that both ESG criteria and ESG components had a significant and positive effect on market value. In other studies carried out on the sample of Turkish firms, the effect of binary situations such as inclusion or non-inclusion in the sustainability index and disclosure or non-disclosure of a sustainability report on financial performance has been investigated (see Çimen, Gürünlü, 2019; Tanç, 2019; Yılmaz et al., 2020).

The study also adds to the existing literature by utilizing an overall financial performance indicator, which sets it apart from earlier research. The goal is to present a fresh perspective by combining accounting-based and market-based performance measures into one comprehensive framework. Moreover, this study enables us to analyze the effect of ESG practices on firm performance in more detail. Existing literature has solely focused on exploring the impact of the overall ESG score or its E, S, and G components, neglecting the examination of the individual effects of the ten sub-components of ESG. Thus, the study has made a further contribution by examining the effect of the ten sub-components of the ESG separately on firm performance.

As a result, investing in ESG factors, particularly those related to the environmental dimension, is crucial for companies looking to improve their sustainable performance. Considering these factors when making decisions about company policies can help guide future decisions for managers. In other words, companies should prioritize ESG factors, and especially environmental concerns, in their overall business strategy in order to achieve long-term sustainability. The development of socially and environmentally conscious policies seems to contribute to more effective financial performance. As a result, executives must take into account the needs and concerns of not only their shareholders but also all parties who may be impacted by, or have an impact on, the attainment of environmental and social objectives (Chouaibi et al., 2022).

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Appendix 1: Tickers of Firms

AEFES	AKSA	ARCLK	ASELS	AYGAZ	BIMAS
CCOLA	DOAS	DOHOL	EKGYO	ENKAI	EREGL
FROTO	GLYHO	KORDS	KOZAA	KOZAL	KRDMD
MGROS	MPARK	OTKAR	PETKM	PGSUS	SASA
SELEC	SISE	TAVHL	TCELL	THYAO	TKFEN
TOASO	TTKOM	TTRAK	TUPRS	ULKER	VESTL

Appendix 2: Sample Distribution by Years

Years	**Observations**	**%**	**ESG Means**
2009	6	3.17	27.18
2010	7	3.70	33.04
2011	15	7.94	39.09
2012	16	8.47	41.05
2013	16	8.47	42.20
2014	17	8.99	45.88
2015	18	9.52	49.20
2016	18	9.52	50.59
2017	18	9.52	53.18
2018	22	11.64	56.98
2019	36	19.05	52.51