

Article

Does ESG Disclosure Influence Firm Performance?

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Abstract: This study aims to analyze the impact of the environmental, social, and governance (ESG) disclosure on the firm performance, given the stakeholders' increasing attention to the firm's ESG practices. Looking at the European context, the Directive 2014/95/EU and its update encouraged European large companies to provide disclosure about their socially responsible practices. Acting within the Agency and Signaling theory frameworks, this paper focuses on the Italian situation where the Legislative Decree 254/2016 implemented the European Directive and forced the largest firms (those with more than 500 employees) to disclose comprehensive information about their social and environmental activities starting from 2017. By applying a panel regression analysis, using a sample of the largest Italian listed companies, and considering a time span of 10 years (from 2011 to 2020), this study finds that there is a positive relationship between environmental, social, and governance disclosure and firm performance, measured by EBIT. Our findings will help firms' stakeholders, decision-makers, policymakers, as well as academics, to improve their awareness of the impact of ESG disclosure on the performance of the firm, both as a comprehensive factor and individually by pillar. The findings, which support the positive relationship between ESG disclosure and firm performance, should incentivize managers to invest in CSR practices.

Keywords: ESG; sustainability; signaling theory; Directive 2014/95/EU; Italy; firm performance



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1. Introduction

A rising level of activism and commitment towards the environmental, social, and governance practices has led to increased firm engagement in socially responsible practices, and consequently to greater firm disclosure about such practices to enhance awareness among stakeholders.

In Europe, disclosure has been further encouraged by Directive 2014/95/EU (the Directive), which has required large companies—those with more than 500 employees—to annually disclose information about their non-financial practices, policies, and outcomes as well as anti-corruption strategies and procedures they have adopted. Further development of this Directive, the Corporate Sustainability Reporting Directive (CSRD), took place on 21 April 2021, amending the existing reporting requirements of Directive 2014/95/EU, supported by the increasing need for sustainability disclosure.

The information on corporate non-financial practices can be summarized through the “three modern pillars” of Corporate Social Responsibility (CSR) [1], which are the Environmental, Social, and Governance (ESG) pillars representing a measure of the CSR performance of a firm [2–5]. The CSR performance can be measured using the ESG score, which is considered a proxy for the firm results on CSR practices [6,7] because it provides the most objective measure available at the time of writing. In fact, the ESG score is intended to objectively and clearly evaluate the ESG performance, considering the bundle of environmental and social activities of CSR, together with the corporate governance activities [8–10].

The fundamental question that still needs to be addressed in greater depth is whether ESG disclosure does lead to better performance for the firm. Given that no unique findings on this relationship have been achieved yet, addressing this issue is particularly relevant not only for firms, which survive when they perform well, but also for stakeholders, such as investors, suppliers, and customers, who rely on the firm for their survival as well. Acting within the Agency and Signaling theory framework, the aim of this research is to understand the specific impact of ESG disclosure and of the three pillars on the performance of the firm, considering both the income statement perspective and the assets perspective, in order to fill a gap in the literature, which focuses primarily on the market value of the firm and the whole performance of the firm often measured by ratios, such as the ROE. The focus of this paper on the firm performance enables us to directly link ESG disclosure to what is currently happening in the firm at the business level, independently of any additional effects dictated by capital structure, taxes, or market expectations [11,12]. Considering not only the ESG score as a whole but also its single pillars is meaningful because each component might have a different but relevant (or not relevant) impact on the performance of the firm. The study focuses on one single country, Italy, where the Legislative Decree 254/2016 implemented the Directive, obliging the largest firms to disclose comprehensive information about their social and environmental activities. The relevance of this new law relies on the fact that this is the first regulation for listed firms about non-financial information disclosure. Even if the Italian corporate market is characterized by a consistent number of small and medium enterprises, this law nowadays is mandatory only for the largest firms, as before mentioned.

Using a sample of the largest Italian listed companies and considering a time span of 10 years (from 2011 to 2020), this study provides new evidence regarding the impact of ESG disclosure on corporate performance by applying a panel regression analysis.

Our primary finding is that ESG disclosure has a positive impact on firm performance. Moreover, going more in-depth with the analysis of each pillar, the results show that the environmental and the social pillars do have a positive impact on the firm performance, while no evidence is found for the governance pillar.

This paper contributes to ESG extant literature in four different dimensions. First, we tested the impact of the ESG score, as well as its three pillars (Environment, Social, and Governance scores) on firm performance. Many other studies consider only the ESG score as a whole or just a single component, while in this study the three pillars are tested at the same time. Second, the performance measured with accounting-based measures has not been investigated as much as the performance measured through the market-based measures, such as the market value of the firm. Third, this research tests the corporate performance based on two accounting measures, Earnings Before Interests and Taxes (EBIT) and Return on Assets (ROA), to verify the impact on the operating result and the impact in terms of return on investments. Fourth, a long-time span was used to test the relationships, from 2011 to 2020; while this is rare, also due to the still scarce availability of data, especially in some countries [13], it is nevertheless important to study the improvement of the ESG over time [14].

Thus, our findings will help firms' stakeholders, decision-makers, policymakers as well as academics to improve their awareness of the impact of ESG disclosure on the firm performance, both as a comprehensive factor and individually by pillar. In fact, by highlighting the positive relationship between ESG disclosure and the firm performance, the results of this study might incentivize practitioners to invest more in CSR activities, as well as motivate decision-makers and policymakers to support CSR activities, leading to the creation of value at the firm level and increased community awareness regarding this topic.

The remainder of the paper is organized as follows: Section 2 focuses on the literature concerning the ESG and corporate performance; Section 3 discusses the theoretical frameworks used for our research and the development of our hypotheses; the research method

is presented in Section 4 and empirical results are discussed in Section 5; the final section presents some concluding remarks, practical implications, and limitations of the study.

2. Literature Review

In recent years, the concept of ESG disclosure has become a hot topic not only for academia but also for practitioners and international standard-setters [15–17]. Among all the studies, a great part of the extant literature has focused on the impact of ESG disclosure on the firm performance or on how a single pillar of the ESG affects the firm performance [3,18,19]. It is important to highlight that the largest part of the literature focuses on the overall ESG score, without analyzing the single ESG pillars. Each pillar may impact the firm in a different way and with a different intensity. For example, Cek and Eyupoglu [20] show that the social and governance pillars positively and significantly impact the firm's economic performance mainly because of the value generated for the shareholders in the long run. On the same path, Paolone et al. [7] find that the governance pillar effect is much stronger than that of the other two pillars on the market performance of a firm. Nevertheless, ESG pillars are connected to each other, thus focusing on a single one can be reductive. Some researchers have investigated the three pillars of the ESG and their impact on firm performance at the same time [4,21–25], without coming to a unified view; rather, the research highlights the fact that different contexts may present different scenarios with different characteristics that influence both firm performance and ESG practices. Thus, it appears that the collective understanding of the relationship between ESG disclosure and firm performance would benefit from an approach that looks not only at the impact of the ESG score as a whole, but also (i) takes into account the impact of the individual pillars, and (ii) focuses on a single context, such as a single industry or a single country [26–28]. Lastly, the literature appears not to have emphasized the role of the ESG on the operating aspect of the performance, such as the effects on the income statement figures and on the return coming from the investments made for the business activities.

As far as specific contexts are concerned, what emerges looking at previous studies focusing on the relationship between the ESG and the firm performance, is that there is a lack of systematization in the literature covering the European and Italian contexts, producing findings that are not univocally aligned; in Italy, specifically, this may be partially due to the fact that the Directive on disclosure began to be implemented only in 2016. Most studies cover the relationship between disclosure and financial performance and market value, and some explore the impact of ESG performance on the cost of capital and credit ratings, while works that focus on firm performance or analyze the individual pillars are scant and very specific to single sectors or aspects so that a complete picture has not yet fully emerged.

The scarce focus on the firm performance tested through accounting-based measures, together with the lack of alignment of the results, is apparent even in more extensive studies covering several years of data. For instance, in their work covering five years of panel data from G7 countries, Almeyda and Darmansya [29] highlight the correlation between ESG disclosure and firm performance measured through ROA and ROC (significant correlation), as well as between ESG disclosure and market value measured through stock price and price-to-earnings ratio (no significant correlation); moreover, while they do look at the individual pillars, the environmental pillar appears to have a positive relationship with both ROC and stock price, while the social and the governance factors do not appear to have a significant relationship. Similarly, an extensive study of the Eurostoxx50 index covering 9 years, focuses on market value, confirming the absence of a relationship between companies' market value and their ESG efforts [30], a conclusion mirrored by an analysis of Italian listed companies [31]. However, these findings are contrasted with a later study of the value relevance of disclosure in the same context [7].

A greater focus on firm performance is found in the Italian context, where a study of 84 newly listed Italian companies over a seven-year period shows a significant impact of ESG on ROA, primarily explained by the environmental score [32]. However, when

looking at specific sectors, significant disparities arise. In banking, for instance, overall ESG performance is shown to have a significant impact on both the financial and market performance, measured through ROA, ROE, and Tobin's Q; however, when measured individually, the social pillar is found to negatively affect all three measures, while the governance component negatively affects ROA and ROE and positively affects Tobin's Q [33]. In the Italian pharmaceutical industry, on the other hand, the governance pillar appears to have a strong positive influence on its financial performance [7].

Even when looking at apparently consolidated findings, disparities may arise. For instance, there appears to be a consensus that a positive assessment of ESG strategy has an impact on credit ratings [34], the cost of capital, and especially the cost of debt, giving virtuous companies access to debt at better conditions [35,36]; social and governance pillars drive the correlation [37]. When the analysis concentrates on non-family-run small and medium-sized enterprises (SMEs), it shows that environmental disclosure actually leads to an increase in the cost of capital [38]. This supports the idea that in order to have a complete picture of the relationship between ESG disclosure and firm performance, a sector-by-sector analysis is required.

Other developing areas of research involve the factors that lead to ESG disclosure, such as board composition, as well as the impact of the quality of ESG information [39]. In Italy, Provasi and Harasheh conducted extensive research into gender and board composition, finding that while female involvement has no significant impact on performance, it does appear to lead to higher ethical scores [40]. Cucari et al. [41] explored the relationship between the board of directors' diversity and ESG disclosure, finding that the greatest positive correlation happens between board independence and ESG, while, interestingly, a greater presence of women on the board has a negative correlation with ESG disclosure [42]. At the European level, however, Nicolò et al. [43] find that the presence of women on boards enhances ESG disclosure; the disparity in findings may be explained by the concept of a critical mass of women on boards [44], though this does not appear to apply across sectors, as illustrated by the banking domain [45]. With regards to the quality of the ESG information disclosed and the impact that the credibility of such information has on firm performance and market value, in Italy the assurance of the quality of the information does not appear to lead to an incremental benefit, perhaps because the market perception of quality assurance is still in its infancy [46]; the findings in this area suggest that there is a lack of homogeneity in disclosure requirements [47] and that third party auditing would be beneficial to ESG score reliability [48]. Equally, there is no evidence to suggest that mandatory over voluntary disclosure has led to the incremental value of the firm [49]; even though at the global level, investors increasingly believe that ESG ratings provide information that is material to the performance of the investment [50], recent research in Italy suggests that there is not a homogeneous corporate response to ESG rating requirements [51].

3. Theoretical Framework

Traditional financial reports are not fully adequate to represent the various aspects of corporate activities [52]. For this reason, and under the Directive, large companies are required to disclose non-financial information about the way they manage sustainability challenges using different reports, such as Integrated reports and Sustainability reports [53].

This additional disclosure reduces information asymmetry and agency costs [54,55], both negative consequences of the Agency theory. Moreover, as suggested by the Signaling theory, sustainability disclosure sends a positive signal to the market about corporate commitment to sustainability [56], which could positively impact corporate performance.

3.1. Agency Theory

The Agency theory [57] is grounded in two main pillars, namely (i) the relationship between principal and agent and (ii) the separation between ownership and control [58]. The principal, represented by the owner of the company, delegates the managing power to the agent, who should act in the best interests of the principal [59,60] but usually pursues

his/her own objectives to the detriment of the interests of the principal. On the other hand, governance mechanisms can mitigate agency cost and conflict [61], especially when a broad range of mechanisms are explored [62]. At this point of the story, a conflict of interest arises between the principal and the agent, due to the different benefits they want to achieve. The principal has a long-time horizon orientation, which clashes with the agent's short-time horizon orientation [63]. On the one hand, the agent is more focused on the opportunities he/she can catch in the short term [64–66]. On the other hand, the principal uses the disclosure of financial and non-financial information to reduce the agency costs (i.e., information asymmetry) arising from the separation between ownership and control [67]. Thus, the higher the level of non-financial information disclosure, in other words, ESG, the happier the principal will be, because of the higher transparency.

3.2. Signaling Theory

The Signaling theory is focused on the fundamental role of information in a business transaction [68]. According to this theory, managers can reduce information asymmetry by sharing voluntary information with external stakeholders [69,70]. More in detail, companies are willing to invest their financial resources to disclose favorable information about their sustainability commitments to provide stakeholders with information that cannot be traced anywhere else [6,71]. The signaling theory is based on four elements: signal, signaler, receiver, and feedback [72,73]. The signal is represented by the information stream that flows from the signaler, represented by the internal management, to the receiver, represented by the external stakeholders. Finally, the feedback represents the interactions between signalers and receivers [55,74]. Several authors [72,75,76] support the idea that managers tend to disclose information about their long-term sustainability initiatives as a signal of their commitment to society, the environment, and stakeholders. In doing so, managers reduce the information asymmetry between companies and external stakeholders.

In conclusion, both Agency theory and Signaling theory suggest that the market will punish companies who do not behave responsibly [75–77]. The main effect of this punishment is reflected by a decrease in their performance, namely in a decrease in their sales and, consequently, in a decrease in their EBIT.

Splitting the sustainable disclosure into its environmental, social, and governance components, our hypotheses state:

H1. *There is a positive relationship between the ESG score and corporate performance.*

H1a. *There is a positive relationship between the Environmental score and corporate performance.*

H1b. *There is a positive relationship between the Social score and corporate performance.*

H1c. *There is a positive relationship between the Governance score and corporate performance.*

4. Research Method

4.1. Sample and Data

To conduct this study, we focused on the Italian listed companies. The firms are scattered throughout the country (north, center, and south of Italy) and they belong to different industries. Considering a time span of ten years, from 2011 to 2020, we combined the data from the Aida and the Refinitiv Workspace databases to collect information on the financial data and on the sustainability indicators. Aida contains comprehensive information on companies in Italy, with up to ten years of history. Refinitiv offers one of the most comprehensive ESG databases and has been recently used to conduct studies on similar topics [78,79]. The result of the data collection is a panel dataset consisting of 263 companies and 2630 firm-level observations. Table 1 shows how the companies are geographically distributed in the Italian nation. Most of them (196) are in the northern part of Italy, 55 in the center and only 12 in the southern part of the country. Sectors to which the companies belong are shown in Appendix A.

Table 1. Geographical area of the firms.

Geographical Area	Freq.	Percent
Center	55	20.91
North	196	74.52
South	12	4.56
Total	263	100

4.2. Model

The research was conducted using panel type analysis, a statistical technique extensively used in similar studies [80]. This technique enables the extraction of information from datasets that contain data on several participants and time periods. By including additional variables within the same period, the panel dataset enables a meaningful examination of how the data evolve over time.

Panel analysis can be classified into two distinct approaches: Fixed Effects and Random Effects.

To determine which of the two models was more suitable for doing the panel regression analysis, the Hausman test was used, which is required for comprehending the unobserved error component. The Hausman test is based on the principle of computing both estimators and selecting ex-post which one is more suitable for our objectives based on their comparison. In panel data analysis, the Hausman test can assist in determining whether to use an FE or an RE model. The null hypothesis is that RE is the preferred model; the alternative hypothesis is that FE is the preferred model. The test looks for a correlation between the unique errors and the model's regressors. The null hypothesis is that they are unrelated. According to the test result ($p < 0.00$), the RE model is more applicable in this study. The Random Effects (RE) model presupposes that variation between entities is random and unrelated to the model's independent variables. Thus, an advantage of this model is the ability to include variables that remain constant across time.

4.3. Dependent Variables

To measure the corporate performance, the EBIT and the ROA of the companies considered in our sample were used as dependent variables.

EBIT is a key metric for determining a company's profitability. EBIT is sometimes referred to as operating profit. It is computed as operating revenues minus operating costs excluding interest and taxes. EBIT is considered a widely accepted economic performance measure, representing a key performance indicator to express the economic and operating success of a company [81].

ROA, on the other hand, measures a company's profitability in terms of its assets, or the resources it uses and is computed as net profit divided by total assets. The greater it is, the more effectively the corporation manages its assets. ROA too is a widely used measure for a firm's performance [13].

4.4. Independent Variables

The independent variables refer to the commitment of the firms towards non-financial goals that go beyond the corporation's role to maximize profits on behalf of its shareholders. Specifically:

1. The ESG Score represents the combined company's score for environmental, social, and governance sustainability initiatives. The company's attitude regarding human rights, the integration of sustainability into core operations, emission reduction, and environmental protection are incorporated in this indicator. The ESG Score indicator incorporates qualitative and quantitative data on topics, such as water and power use, CO₂ emissions, human rights protection, and equity and equal treatment in the workplace.

2. The Environmental Score is the metric that indicates the quantity of emissions that a business releases into the environment, resulting in the formation of air pollution. The higher the emission score, the lower the level of emissions.
3. The Social Score refers to the fact that businesses undertake numerous HR initiatives to improve their human resource management.
4. The Governance Score indicates an organization's commitment to implementing social responsibility principles, that is, to effectively managing social and ethical issues.

The Refinitiv database uses 12 grades to assess the ESG performance of the companies (from A+ to D−). We have converted each of these grades into numbers (from 1 to 12). In our dataset 12 corresponds to the highest grade (A+) while 1 corresponds to the lowest (D−).

4.5. Control Variables

Following the existing literature [82–85], we control for (1) firm size, calculated as the natural logarithm of the number of employees of the companies; (2) geographic location of the firms (north, center, and south of Italy), computed as a categorical variable; (3) industry to which the firms belong, computed as a categorical variable; (4) firms' financial leverage, using the debt-to-equity (D/E) ratio (computed by dividing a company's total liabilities by its shareholder equity).

4.6. Descriptive Statistics

Studying the sample in a time span of 10 years, from 2011 to 2020, allows us to discover whether outcomes have changed over time and then verify whether the firms have altered their course of action.

As evidenced in Table 2, the descriptive analysis of the sample shows that over time the companies adopted and integrated a new business model into their corporate strategy by maintaining a focus on the firm's performance but also on the community's interest, environmental protection, and respect for human rights.

Table 2. Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
2011					
Number of Employees	260	1245.57	9429.21	0.00	142,694.00
EBIT	253	70,626.53	606,314.80	−130,831.00	9,220,261.00
ROA	263	4.09	12.81	−60.43	111.33
D/E Ratio	247	1.39	4.58	−2.99	59.84
ESG Score	19	8.00	2.52	1.00	11.00
Environmental Score	19	8.47	2.87	1.00	12.00
Social Score	19	8.05	2.63	1.00	12.00
Governance Score	19	7.37	2.73	2.00	11.00
2012					
Number of Employees	263	1187.43	9180.27	0.00	140,435.00
EBIT	254	56,974.04	561,036.80	−130,378.00	8,685,086.00
ROA	262	3.52	14.25	−54.62	137.40
D/E Ratio	251	1.39	7.46	−23.93	109.13
ESG Score	19	7.95	2.48	1.00	11.00
Environmental Score	19	8.53	2.78	1.00	12.00
Social Score	19	8.37	2.79	1.00	12.00
Governance Score	19	6.95	2.63	1.00	10.00
2013					
Number of Employees	263	1175.11	9063.20	0.00	139,433.00
EBIT	252	44,859.26	509,198.00	−1,452,506.00	7,679,867.00
ROA	263	3.38	13.63	−56.08	133.78
D/E Ratio	249	1.07	2.32	−2.58	25.38
ESG Score	19	8.05	2.66	1.00	11.00

Table 2. Cont.

Variable	Obs	Mean	Std. Dev.	Min	Max
Environmental Score	19	8.53	2.80	1.00	12.00
Social Score	19	7.95	2.78	1.00	11.00
Governance Score	19	7.05	2.93	2.00	11.00
2014					
Number of Employees	263	1207.43	9013.55	0.00	138,000.00
EBIT	255	43,447.06	442,293.70	−433,660.00	6,866,568.00
ROA	263	3.18	16.23	−69.14	151.61
D/E Ratio	250	0.86	1.36	−3.52	10.21
ESG Score	20	7.90	2.36	2.00	11.00
Environmental Score	20	7.80	2.91	1.00	12.00
Social Score	20	8.05	2.72	3.00	11.00
Governance Score	19	7.05	2.41	3.00	10.00
2015					
Number of Employees	263	1218.75	8900.65	0.00	135,514.00
EBIT	256	38,427.60	349,447.20	−395,354.00	5,340,215.00
ROA	263	3.42	18.59	−114.11	180.20
D/E Ratio	251	0.73	1.35	−11.26	9.86
ESG Score	22	7.91	2.81	2.00	12.00
Environmental Score	22	8.05	3.39	1.00	12.00
Social Score	22	8.14	3.03	1.00	12.00
Governance Score	21	6.71	2.63	2.00	10.00
2016					
Number of Employees	263	1251.33	9034.06	0.00	136,928.00
EBIT	256	47,450.34	414,437.70	−160,255.00	6,451,267.00
ROA	263	3.81	14.01	−53.41	127.80
D/E Ratio	250	0.65	1.30	−8.53	9.24
ESG Score	24	7.79	2.13	3.00	11.00
Environmental Score	24	7.88	2.68	2.00	12.00
Social Score	24	8.25	2.56	2.00	12.00
Governance Score	23	6.87	2.63	3.00	11.00
2017					
Number of Employees	263	1234.85	8505.63	0.00	127,702.00
EBIT	257	54,472.71	425,213.40	−226,140.00	6,035,040.00
ROA	263	4.28	15.10	−32.43	150.52
D/E Ratio	254	0.71	1.15	−3.73	10.25
ESG Score	32	8.00	2.16	3.00	11.00
Environmental Score	32	7.47	3.09	1.00	12.00
Social Score	32	8.25	2.27	3.00	12.00
Governance Score	31	7.10	2.41	3.00	12.00
2018					
Number of Employees	262	1193.73	8224.80	0.00	122,821.00
EBIT	257	48,586.79	386,388.40	−253,358.00	5,919,802.00
ROA	263	3.84	15.10	−41.82	156.34
D/E Ratio	254	0.71	1.36	−4.10	10.38
ESG Score	57	7.44	2.13	1.00	11.00
Environmental Score	57	6.61	3.06	1.00	11.00
Social Score	57	8.19	2.57	2.00	12.00
Governance Score	56	6.89	2.38	1.00	11.00
2019					
Number of Employees	263	1178.41	7852.77	0.00	117,865.00
EBIT	257	52,855.31	385,234.00	−147,871.00	5,834,166.00
ROA	263	2.62	21.83	−243.19	139.54
D/E Ratio	255	0.77	1.51	−4.01	14.88
ESG Score	63	7.56	2.28	1.00	11.00
Environmental Score	63	6.84	3.12	1.00	12.00
Social Score	63	8.38	2.52	2.00	12.00
Governance Score	62	6.79	2.66	1.00	12.00

Table 2. Cont.

Variable	Obs	Mean	Std. Dev.	Min	Max
2020					
Number of Employees	262	1139.19	7566.96	0.00	113,847.00
EBIT	257	34,397.24	368,205.80	−1,396,216.00	5,453,942.00
ROA	263	1.24	12.56	−71.27	107.80
D/E Ratio	256	0.99	2.24	−1.42	26.79
ESG Score	93	6.83	2.68	0.00	11.00
Environmental Score	93	6.03	3.23	0.00	12.00
Social Score	93	7.75	2.83	0.00	12.00
Governance Score	92	6.37	2.95	0.00	12.00

Indeed, while just 19 corporations reported information regarding their environmental, social, and governance sustainability commitments in 2011, the number of organizations disclosing ESG information climbed to 93 in 2020. All of this indicates that businesses have begun to listen to and please consumers, particularly those who are increasingly concerned with environmental protection. As a result, more corporations have published sustainability indicators over the years.

Furthermore, if we focus intently on the trend, we may conclude that the true transition occurred between 2017 and 2018 when the number of firms disclosing ESG information increased from 32 to 57. This suggests that businesses have only recently committed to implementing sustainable policies and actions.

Table 3 shows the correlation matrix for the variables used in our study. All the ESG indicators (ESG Score, Environmental Score, Social Score and Governance Score) show a significant and positive correlation with EBIT. On the other hand, only the Environmental Score shows a significant and negative correlation with ROA.

Table 3. Correlation matrix.

	Number of Employees	EBIT	ROA	D/E Ratio	ESG Score	Environmental Score	Social Score	Governance Score
Number of Employees	1							
EBIT	0.385 ***	1						
ROA	−0.0533	0.0814	1					
D/E Ratio	0.769 ***	0.0218	−0.118 *	1				
ESG Score	0.116 *	0.202 ***	−0.0554	−0.0301	1			
Environmental Score	0.0987 +	0.117 *	−0.108 *	−0.018	0.856 ***	1		
Social Score	0.110 *	0.154 **	−0.0482	0.0284	0.895 ***	0.705 ***	1	
Governance Score	0.0732	0.213 ***	−0.00752	−0.0928 +	0.794 ***	0.508 ***	0.641 ***	1

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

A test for multicollinearity was performed using the variance inflation factor (VIF). As reported in the tables in Appendix A, the VIF result shows the range of VIF statistics that lies between 1.049 and 4.080 with EBIT as the dependent variable and 1.069 and 4877 with ROA as the dependent variable. This shows that there is no severe multicollinearity problem that occurs between the exogenous variables.

5. Empirical Results and Discussion

This study aims to demonstrate that Italian businesses have improved their sustainability practices, which in turn has resulted in increased performance. To conduct the empirical study necessary to support the previously stated hypotheses, two linear regressions were conducted using the same control and independent variables but with different dependent variables.

Table 4 presents four different models to show the panel regression results of the relationship between EBIT as a dependent variable and the independent factors, which are ESG Score, Environmental Score, Social Score, and Governance Score.

Table 4. Panel regression analysis (EBIT as dependent variable).

	Model 1		Model 2		Model 3		Model 4	
	Coeff	Std. Err	Coeff	Std.Err	Coeff	Std.Err	Coeff	Std.Err
ESG Score	19,138.20 **	15,927.62						
Environmental Score			5412.91 **	14,437.73				
Social Score					25,503.39 +	15,964.89		
Governance Score							19,410.24 *	14,724.37
D/E Ratio	−4631.48	39 988.82	−1916.88	40,077.61	−4527.40	39,874.75	1709.93	40,828.67
Firm size	58,976.05 *	27,706.37	61,124.28 *	27,963.67	52,997.222 +	28,143.64	54,210.21 +	28,550.97
Geographical Area	Dummies included							
Industry	Dummies included							
Years	Dummies included							
Constant	49,672,391.59 **	18,390,163.58	50,127,772.53 **	18,541,212.91	60,749,537.12 **	19,685,014.72	57,749,903.03 **	19,546,605.41
Obs	349		349		349		342	
Groups	90		90		90		89	
R-sq within	0.03		0.03		0.03		0.03	
R-sq between	0.13		0.14		0.12		0.13	
R-sq overall	0.16		0.16		0.14		0.16	
Wald chi2	17.01		15.64		18.11		17.26	
Prob > chi2	0.00		0.00		0.00		0.00	

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

Model 1 shows that the ESG score is significantly ($p < 0.01$) and positively associated with EBIT. Model 2 shows that the Environmental Score is significantly ($p < 0.01$) and positively associated with EBIT. Model 3 shows that the Social Score is significantly ($p < 0.10$) and positively associated with EBIT. Finally, Model 4 shows that the Governance Score is significantly ($p < 0.05$) and positively associated with EBIT. Table 4 demonstrates and supports the four assumptions for our sample (To ensure the robustness of the results, several additional analyses are performed. Specifically, we use the annual growth in EBIT as the dependent variable instead of the EBIT reported in the balance sheet in a specific year. We also add additional control variables, such as Firm Age. Then, we recomputed Firm Size as the logarithm of the market capitalization rather than the number of employees. All these tests yield results in line with the initial estimates and with the literature. The results of the regression conducted with the annual growth in EBIT as a dependent variable are available in the Appendix A section).

As organizations increase their commitment to sustainable projects, they see an increase in their performance. Going more in-depth in the analysis, looking at the three components of the ESG, the empirical results highlight that increased investment in sustainable environmental projects improves firm performance, as does increased investment in corporate governance and human resource management. Because EBIT is a sales-driven metric, we might assume that customers are more willing to buy and spend when they recognize and observe the presence of sustainable values, as opposed to firms that do not embrace them. When greater attention is paid to the manufacturing process, when environmental resources are not exploited but recycled, and when even the human factor is prioritized without creating exploitative situations, all of this translates into increased sales, as consumers value these factors and will, therefore, pay a premium price, resulting in a higher EBIT. Thus, we show that there is greater appreciation in the community, and the stakeholders, primarily customers, towards sustainable businesses.

As far as control variables are concerned, in all the four models, the size results are positively and significantly related to the firm's performance, which is a quite intuitive

result, given that the greater the size of the firm, the higher the EBIT will be, in case of a healthy business.

Table 5 presents four different models to show the panel regression results of the relationship between ROA as a dependent variable and the independent factors—ESG Score, Environmental Score, Social Score, and Governance Score. The regressions are run on a sample of 90 companies and 349 observations.

Table 5. Panel regression analysis (ROA as dependent variable).

	Model 1		Model 2		Model 3		Model 4	
	Coeff	Std.Err	Coeff	Std.Err	Coeff	Std.Err	Coeff	Std.Err
ESG Score	−0.01	0.15						
Environmental Score			−0.30 *	0.13				
Social Score					0.15	0.15		
Governance Score							0.11	0.14
D/E Ratio	−1.22 ***	0.36	−1.16 ***	0.36	−1.25 ***	0.36	−1.21 ***	0.37
Firm size	0.12	0.25	0.21	0.25	0.05	0.26	0.06	0.26
Geographical Area								
Industry								
Years								
Constant	228.17	172.28	189.97	171.33	293.57	183.59	276.98	182.21
Obs		349		349		349		342
Groups		90		90		90		89
R-sq within		0.06		0.08		0.06		0.06
R-sq between		0.04		0.04		0.04		0.04
R-sq overall		0.02		0.04		0.01		0.01
Wald chi2		16.67		22.36		17.74		17.07
Prob > chi2		0.00		0.00		0.00		0.00

* $p < 0.05$, *** $p < 0.001$.

The association between the Environmental Score and ROA is significant ($p < 0.05$). The negative coefficient is noteworthy, as ROA decreases by 0.30 as the Environmental Score grows.

This rationale may be congruent with the findings as if a company desires to reduce and restrict emissions, it must increase and invest in assets to do so. As a result, ROA will decrease due to the higher investments required in different aspects of the value chain (e.g., a company that wishes to invest in the latest generation equipment to reduce the level of CO₂ emissions), without generating an immediate effect in terms of higher net income given the fact that there is a time lag before an investment in assets results in sufficiently higher revenues (the J curve).

Regarding the long-term effects of sustainable investments firms have conducted in recent years, we will need to look at their return, and thus future research has an open path that still needs to be explored.

Regarding the other independent variables, there are no significant associations with ROA. Indeed, while the level of emissions can be captured immediately following a significant change to the manufacturing plant, the effects of a renewed attitude on the part of the company, both in terms of human resource management and governance, may take much longer to manifest themselves in the company's profitability ratios. On the other hand, as highlighted in the descriptive analysis, many of these corporations have only recently made a commitment to environmental, social, and governance sustainability.

As far as control variables are concerned, in all the four models, the financial leverage results negatively and significantly related to the firm's performance, while the other control variables do not present a significant relation with the ROA.

6. Concluding Remarks

Given the rising attention to CSR activities and given the topical issue about the importance of ESG practices, disclosure measurement has turned into a hot topic in the literature investigating the results and effects of ESG practices.

In this study, we analyzed the impact of ESG disclosure and of its three pillars on the performance of the firm, measured using EBIT and ROA, in a sample of Italian listed firms, during a period of 10 years, from 2011 to 2020. Specifically, this research suggests that ESG disclosure, tested through the ESG score, has a positive impact on the performance of the firm. In particular, a deeper analysis based on the single pillars highlights that the environmental and the social pillars have a positive impact on firm performance. However, no significant impact has been found in relation to the governance pillar.

We address the firm performance by considering two different variables, ROA and EBIT, in order to capture the effects of ESG disclosure on two operating dimensions, one related to the capital invested in the business, and thus connected to the balance sheet, and the other one linked to the operating result that is achieved because of the business activities, thus connected to the income statement. The findings suggest that customers do appreciate and recognize the value in the environmental and social activities promoted by the firm, generating, as a direct consequence, a higher level of revenue.

The negative impact that the Environmental Score has on ROA can be explained by the fact that firms involved in reducing emissions invest money to do so, thus the capital invested in the business activities becomes higher and, therefore, the return from that capital is lower. Indeed, it is realistic to think that any increase in terms of revenues, which generates a higher operating profit, will not exceed the increase in capital in the short-term.

This paper presents implications for practitioners, in that it provides empirical evidence for the positive effect of ESG disclosure on the performance of the firm. It shows that customers appreciate ESG disclosure, leading to an increase in revenues, and ultimately generating a higher profit for the firm. Thus, we can conclude that corporate social responsibility and sustainability efforts are increasingly integrated into business operations and play a significant role in influencing consumers' purchasing decisions. Consequently, our findings are relevant for managers in their quest to improve the level of disclosures of non-financial information to be able to attract more customers, generate higher revenues and accordingly, higher operating profits. Moreover, by providing evidence of the effects of every single pillar on firm performance, managers have a deeper knowledge of the influence of the single components of the ESG, and therefore, the possibility to select the best choice for their strategic goals.

Given the Italian sample used to conduct the empirical analysis, we can also state that this research provides further understanding of the present debate on the mandatory disclosure of environmental information in annual reports of Italian non-financial companies, as required by the Legislative Decree 254/2016. Indeed, our results do have implications also for policymakers. From their perspective, this paper confirms the need for a more solid social and environmental regulation to extensively promote sustainability practices in all industries. In this way, on the one hand, we will have firms with higher performance and, on the other hand, a more socially and environmentally aware and active community.

Moreover, the findings of this study are relevant for stakeholders and investors, highlighting the fact that firms with a higher level of ESG disclosure do achieve better performance. We must also highlight the fact that stakeholders today are seeking more information on how a business operates in a world of limited and restricted resources.

In addition, this paper overcomes the limitations highlighted by previous studies [7,86] as (i) it relies on a sample that covers several years of data, instead of a single year or a short time span, and (ii) it considers not only the ESG score as a whole, but it also investigates its three individual components simultaneously.

Although this research sheds new light on the relevance of ESG disclosure in terms of impact on the firm's performance, some challenges and limitations remain.

First, in this study, we focused only on one country; further research could certainly focus on broader samples that include more than one country, allowing a cross-country analysis that would highlight similarities and disparities. Second, the performance has been tested using ROA and EBIT as the main indicators connected to the capital invested in the operating activities and the operating result; nevertheless, other measures of performance might be investigated to gain a deeper understanding of the business benefits of ESG disclosure.

Third, we must underline that policymakers worldwide have only recently implemented mandatory requirements, thus at the moment there is limited post-enforcement data; thus, in the future it will be possible to conduct further investigation on broader time spans, providing a better understanding of the long-term effects of these new requirements.

Lastly, companies' awareness of the importance of sustainability is the initial condition to start a transformative process, which starts with respecting the regulatory obligations and recognizing the relevance of the ESG factors and the role they could play in it. However, companies started developing this awareness only recently, as shown by the relatively low number of ESG disclosures in our dataset in the first years. We believe that in the future, companies will produce extensive information on ESG and thus, additional investigations might be required to explore the phenomenon.

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Appendix A

Table A1. Sectors of the firms.

Sector	Freq.	Percent
Automotive	6	2.3
Beverage	1	0.4
Chemicals	3	1.1
Clothing	10	3.8
Cosmetic	1	0.4
Electronics	19	7.2
Energy	17	6.5
Engineering	14	5.3
Financial services	29	11.0
Food	6	2.3
Furniture	2	0.8
Health	1	0.4
Hospitality	8	3.0
Leather	4	1.5
Manufacturing	33	12.5
Minerals	3	1.1
Movie	5	1.9
Nautical	2	0.8

Table A1. *Cont.*

Sector	Freq.	Percent
Petrol and oil	3	1.1
Pharmaceutical	9	3.4
Postal services	1	0.4
Publishing	10	3.8
Real estate	12	4.6
Retail	19	7.2
Software	32	12.2
Telecommunications	4	1.5
Transportation	7	2.7
Waste	1	0.4
Water	1	0.4
Total	263	100.0

Table A2. VIF test (EBIT as dependent variable).

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	ESG Score	0.197	4.080
	Governance Score	0.401	2.492
	Social Score	0.504	1.982
	Environmental Score	0.325	3.080
	D/E Ratio	0.953	1.049
	Firm size	0.683	1.465

^a. Dependent Variable: EBIT.**Table A3.** VIF test (ROA as dependent variable).

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	ESG Score	0.205	4.877
	Governance Score	0.411	2.431
	Social Score	0.529	1.892
	Environmental Score	0.328	3.045
	D/E Ratio	0.935	1.069
	Firm size	0.652	1.533

^a. Dependent Variable: ROA.**Table A4.** Panel regression analysis (Growth in EBIT as dependent variable).

	Model 1		Model 2		Model 3		Model 4	
	Coeff	Std.Err	Coeff	Std.Err	Coeff	Std.Err	Coeff	Std.Err
ESG Score	100,636.30 ***	22,736.91						
Environmental Score			54,521.70 **	17,088.89				
Social Score					91,228.35 ***	20,450.77		
Governance Score							85,362.92 ***	20,097.5
D/E Ratio	−65,971.28 +	37,374.43	−80,373.54 *	37,579.91	−73,679.64 *	37,127.96	−59,194.27	38,223.68
Firm size	54,966.91 +	29,201.72	79,481.69 **	28,450.44	55,964.09 +	29,080.9	63,233.06 *	29,012.9
Geographical Area								
Industry								
Years								
Constant	−9,721,230.10	36,747,829.30	−9,461,830.34	37,928,818.322	10,457,046.71	36,508,314.01	5,415,694.58	37,170,664.38
Obs		331		331		331		331

Table A4. Cont.

	Model 1		Model 2		Model 3		Model 4	
	Coeff	Std.Err	Coeff	Std.Err	Coeff	Std.Err	Coeff	Std.Err
Groups	90		90		90		90	
R-sq within	0.01		0.00		0.00		0.00	
R-sq between	0.19		0.18		0.19		0.19	
R-sq overall	0.18		0.16		0.19		0.18	
Wald chi2	77.34		66.42		77.60		73.93	
Prob > chi2	0.00		0.00		0.00		0.00	

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

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