

RESEARCH ARTICLE

Does ESG implementation influence performance and risk in SMEs?

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Abstract

The relationship between Environmental Social and Governance (ESG) activities and financial performance has been explored within large companies. The presence of these activities in Small and Medium Enterprises (SMEs) is still in its early stages in the literature, requiring further empirical evidence. Given the importance of SMEs in economy and based on Stakeholder Theory, a set of hypotheses regarding the influence of ESG on financial and risk performance has been tested using a sample of 538 Spanish SMEs. Specifically, an index has been developed to assess ESG at both global and individual levels. The study analyses the impact of these variables on corporate performance, taking into account factors such as the pandemic period, level of disclosure and the size effect. The results demonstrate the importance of developing and index tailored to measuring ESG within this type of company, as the methodology employed can impact the outcomes. Moreover, at the individual level, all dimensions reflect a significant relationship, but the overall ESG score does not. The social and labor dimensions prove to be the most beneficial indices for enhancing resilience during periods of crisis. Finally, the findings confirm that it is more difficult for SMEs to monetize the results of ESG investment and that disclosing these activities has a positive impact. This study contributes to existing knowledge by constructing a robust measure of the level of ESG implementation and quality, providing valuable insights for SMEs on how to effectively manage their ESG activities.

KEYWORDS

ESG, financial performance, risk, SMEs, stakeholder theory

1 | INTRODUCTION

The EU Directive is exerting increasing pressure on European companies to implement and disclose Environmental, Social, and Governance (ESG) activities while enhancing their overall performance (EU, 2014; Arvidsson & Dumay, 2022). Simultaneously, the growing importance of ESG has prompted a demand for regulations governing its

implementation. In recent years, new reporting standards have been introduced, with one of the most significant being the EU Directive (2014/95/EU) on Non-Financial and Diversity Reporting (EU Directive) (EU, 2014). Since 2017, this directive has mandated non-financial reporting by large European entities, aiming to urge EU member states to increase both the quantity and quality of ESG disclosure and enhance their overall ESG performance (Arvidsson &

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Dumay, 2022; Cardoni et al., 2019). However, despite these guidelines, in 2022, the European Commission revised the Directive on the disclosure of non-financial information (EU, 2022 [EU Directive, 2022/2464]) due to insufficient improvement in information quality. As a result, a set of mandatory sustainability standards developed by the European Financial Reporting Advisory Group (EFRAG), has been established to improve the comparability, reliability, and accessibility of this information (Arvidsson & Dumay, 2022).

ESG research is gaining increasing attention, but its presence in the literature has shown several problems (Arvidsson & Dumay, 2022, p.1092). Although in this paper we develop the ESG concept and its individual dimensions, we will use the term CSR interchangeably with ESG, as previous literature has considered them synonymous (Huang, 2021). The absence of a universal definition for ESG has led to a lack of consistency in measuring this aspect (Barauskaite & Streimikiene, 2021; Galant & Cadez, 2017; Kuzey et al., 2021; Nizamuddin, 2018), posing a challenge for empirical research on ESG (Salam et al., 2020). In addition, most of this research focuses on large companies, with limited attention given to microenterprises and Small and Medium Enterprises (SMEs) (Gallardo-Vázquez et al., 2013; Otero-González et al., 2021; Sweeney, 2009), despite their significant role in the economy. These smaller entities form the backbone of the business network in Europe (Gallardo-Vázquez et al., 2019; Le et al., 2021). The unique characteristics of these organizations, such as close relationships with stakeholders and the use of informal communication channels, necessitate dedicated investigations.

With the introduction of a new regulatory framework, companies may face increased implementation, structural, and management costs. The new regulation could impose higher fixed costs related to personnel and the adoption of new reporting software, creating challenges for small companies engaged in ESG. While SMEs are not obliged to report non-financial information (Krawczyk, 2021; Ortiz-Martínez & Marín-Hernández, 2021), the requirements for listed SMEs are becoming more stringent. Despite the non-mandatory nature of disclosure for these companies, an increasing number of SMEs are adopting ESG practices, either by “it is required for getting financial resources, for international business or even because the requirements for large companies have a strong influence on SMEs and this information should give a fair and comprehensive view of their policies, outcomes and risks.” (Ortiz-Martínez & Marín-Hernández, 2021, p. 2).

The exploration of ESG activities in SMEs is emerging in the literature, but additional empirical evidence is essential to ascertain whether findings from large companies are applicable to SMEs (Choi et al., 2018; Graafland, 2018; Magrizos et al., 2021; Reverte et al., 2016). “The relevant extant literature on the knowledge gap that exists in the CSR-SME relationship is still far from constructing a consolidated and generally accepted model to investigate such relationships, as well as providing a responsible perspective on the management of SMEs” (Martinez-Conesa et al., 2017, p. 2375). Consequently, there exists a gap in the literature regarding the impact of ESG dimensions on the performance and risk of small and medium-sized companies.

This paper aims to fill this gap in the literature by investigating and providing empirical evidence regarding the relationship between ESG (both globally and individual dimensions), performance, and risk. The study considers the pandemic period, the level of disclosure and the size effect, employing an index specifically developed for this research. Our focus on the Spanish context stems from the fact that in this country, over 99% of companies are SMEs, collectively employing more than 60% of the workforce. Additionally, Spain is a leader in ESG reporting and regulation (Castilla-Polo & Guerrero-Baena, 2023; Odriozola & Baraibar-Diez, 2017).

This study contributes to the existing knowledge in several ways. Firstly, it uses data obtained through a survey conducted among companies operating in Spain. The survey methodology enables the development of a robust measure of ESG implementation and quality, drawing from 63 variables organized into four dimensions. Secondly, in response to the call for further research on this topic (Magrizos et al., 2021), this paper contributes to the current literature on ESG performance by exploring the relationship between sustainability and financial performance and risk. Notably, this investigation focuses on a sample characterized by a substantial presence of SMEs and considers the impact of the COVID pandemic.

The rest of the paper is structured as follows. Section two provides a literature review and formulates the hypotheses. Section three describes the sample, variables, and the measurement of ESG implementation. Section four presents the estimated model and discusses the results obtained. Section five provides a robustness analysis. Section six outlines the theoretical and practical implications. Finally, section seven presents the conclusions, implications, and limitations of the study.

2 | THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

2.1 | ESG and financial performance

Numerous studies explore the outcomes of ESG activities for companies. Positive effects such as an enhanced corporate image, increased employee motivation, and reduced employee turnover are among the benefits associated with ESG across various organizational domains (Babajee et al., 2022). Aguinis and Glavas (2012) conclude that socio-environmental performance not only mitigates risks for companies in attracting investors but also enhances the perceived quality of management, thereby conferring a competitive advantage to firms (Melo et al., 2020; Wang et al., 2014). Váldez Juárez et al. (2018, p.1) claim that “CSR is one of the most successful business actions to have emerged in the last two decades”, emphasizing its essential role in the survival of companies. CSR is considered a fundamental tool in the strategies employed by companies to bolster competitiveness (Bai & Chang, 2015).

The relationship between ESG and performance is a thoroughly examined topic in the academic literature (Nguyen et al., 2021) explored from different perspectives (Arendt & Brettel, 2010; Vlachos

et al., 2009). Some authors investigate the impact of ESG implementation on financial performance (Chtourou & Triki, 2017), while others explore the influence of financial performance on ESG. Additionally, some studies examine this relationship bidirectionally. In this study, our focus will be on the first approach, specifically analyzing the influence of ESG implementation on financial performance.

There are different schools of thought about the relationship of these two variables. On one hand, the opposition to a positive link was led by Friedman (1972), and neoclassical economists argued that ESG represented a cost for companies (Blasi et al., 2018). Friedman defended that the unique goal of a company is economic, so its activities should be based solely on profit maximization. On the other hand, the positive relationship between these two variables was originally defended by Freeman (1984). A wide range of recent studies demonstrate a positive relationship between these two variables, defending that ESG activities should be part of corporate management as they contribute to improve financial performance and, consequently, to achieve competitive advantages (Brandão et al., 2017; DiSegni et al., 2015; Martínez-Conesa et al., 2017; McWilliams & Siegel, 2000; Melo et al., 2020).

Given the substantial connection with stakeholders and the Stakeholder Theory (Freeman, 1984) being the primary framework supporting the existence of a positive relationship between ESG and financial performance, we will rely on this theory for our study. In recent years, the Stakeholder Theory has emerged as one of the most widely used frameworks in the academic community for conceptualizing and understanding issues related to the ethical responsibilities of companies (Dmytriyev et al., 2021; Schwartz & Carroll, 2008). Freeman (2004) advocates that for an organization to be deemed socially responsible, the first step is to consider its stakeholders, as they all play a crucial role in performance outcomes (Bučiūnienė & Kazlauskaitė, 2012; Odriozola & Baraibar-Diez, 2017).

While the literature shows contradictory results, a considerable number of papers advocate for a positive relationship supported by the Stakeholder Theory. After reviewing the existing literature, it is evident that studies reflecting a positive connection between the two variables slightly outnumber those that do not (Huang, 2021; Velte, 2017). Moreover, this perspective finds support in a report published by Whelan et al. (2021), presenting the results of a meta-analysis elaborated with more than one thousand articles published between 2015 and 2020. The meta-analysis affirms positive relationship between the two variables. Understanding that the ESG value of a company is derived from the performance of each of its pillars, we extend this conclusion to individual levels. Therefore, we propose the following hypotheses:

H1. ESG implementation influences positively the financial performance.

Standard indicators reflecting the ESG activities of companies typically establish three dimensions: Environmental, Social and Governance. While the literature extensively documents the effects of these dimensions on financial performance and associated risks, the impact

of various ESG activities is less thoroughly examined. Not all CSR practices have the same impact on business performance. Several studies (Gregory, 2022; Sabharwal, 2014 and Suciú et al., 2020, among others) highlight the necessity for more detailed research into company-specific ESG activities.

Suciú et al. (2020) reiterate the critical importance of human capital for business, emphasizing diversity, professional development, and employee inclusion as key elements in reducing risks and enhancing financial performance. They highlight the added value generated by company employees, including wage incentives, flexible work programs, employee satisfaction, gender, and cultural diversity, all of which have a significant positive impact on the financial performance of companies. Gregory (2022) finds that ESG activities benefit companies and, in developed markets, the effect of ESG on the free cash flow of a company is enhanced by overspending on labor conditions. Adu (2022) individually analyze the effects of the employee score on the performance in the banking sector, revealing a positive and significant association between the first variable and both Return on Assets (ROA) and Return on Equity (ROE). The ability to deliver superior service depends on recruiting and retaining employees with the right talent and skills. For example, banks that adopt good practices can improve efficiency and financial performance by attracting highly skilled labor, motivating employees, and creating a bonding mechanism for them (Bhattacharya et al., 2008 and Kabir & Thai, 2017).

The reporting requirements introduced by the EU Non-Financial Reporting Directive (2014/95/EU) require listed companies in EU Member States to include a non-financial statement in their annual reports. This statement is required to furnish comprehensive information (i.e., policies, risks, and performance) on environmental, social, and employee-related issues. This includes details regarding human rights, anti-corruption, and anti-bribery efforts. The directive has been transposed (Law 11/2018 in Spain) establishing that companies must report separately information related to personnel, including information adopted to promote equal treatment and opportunities between men and women, non-discrimination, and inclusion of persons with disabilities and universal accessibility. Breaking down the labor component from the social one highlights the importance of labor practices, rights of employees, working conditions, and other employment-related issues within the broader spectrum of social aspects, allowing for a specific focus on employment matters.

The reasons given highlight the importance of including the labor dimension as an additional pillar to analyze.

H2. ESG (Environmental, social, labor and governance) dimensions influence positively the performance of the company.

2.2 | ESG and financial performance in SMEs

Analyzing the literature on ESG and its link with financial performance, it is notable that research specifically focused on small companies is clearly scarce. Most studies addressing this topic

predominantly focus on large corporations, with SMEs being overlooked in this realm, despite their pivotal role in the business sector (Kim & Kim, 2021; Le et al., 2021; Martínez-Conesa et al., 2017; Reverte et al., 2016; Salam et al., 2020). SMEs serve as the driving force of the economy, especially at the regional level, constituting “more than 99% of the overall number of companies in Europe” (European Commission, 2022). Moreover, SMEs employ two-thirds of the European community, so there is no doubt about their significant impact on the economy and the importance of research in this domain (Gallardo-Vázquez et al., 2019; Le et al., 2021).

One of the main characteristics of SMEs, arising from their size, is the concentration of management and ownership in the same person (Gallardo-Vázquez et al., 2019; Magrizos et al., 2021). This means that ESG decisions are made by the owners of SMEs (Magrizos et al., 2021; Ramecesse, 2021). Moreover, the link between ESG and organizations can be much stronger in this type of company due to their proximity to the local environment (Graafland, 2018; Magrizos et al., 2021; Reverte et al., 2016). This close relationship encourages SMEs to be more engaged with local communities (Magrizos et al., 2021). Consequently, ESG can serve as a tool for enhancing the competitiveness of SMEs (Kim & Kim, 2021). Another characteristic derived from this close relationship is that ESG management is not as formally executed as in large listed companies. However, a primary challenge faced by SMEs is the limited resources available to carry out ESG activities (Kim & Kim, 2021; Otero-González et al., 2021). While the presence of ESG activities in SMEs is beginning in the literature, there is a need for more empirical evidence to determine whether the results obtained in large firms are applicable to SMEs (Choi et al., 2018; Reverte et al., 2016).

At the empirical level, some studies have delved into the role of ESG in SMEs. López-Pérez et al. (2017) show that the larger the firm, the stronger the nexus between ESG and corporate reputation, brand image and financial value. The research by Martínez-Conesa et al. (2017) shows that increased involvement of SMEs in ESG correlates with higher performance. In addition, they analyze the moderating role of innovation, confirming its positive influence on this relationship. Additionally, Moneva-Abadía et al. (2019) analyze how ESG orientation can enhance competitive success in SMEs, mediated by innovation and performance. Their results indicate that SMEs must actively participate in ESG activities if they want to be successful. Nejati et al. (2017) similarly identify a positive relationship between CSR orientation in SMEs and reputation. Moreover, based on a sample of Spanish SMEs, Cegarra-Navarro et al. (2016) conclude that it is the economic dimension of ESG, rather than the social dimension, that determines an improvement in financial performance. Palacios-Manzano et al. (2021) find a positive relationship between ESG and performance, considering job satisfaction and innovation as moderating variables.

Specifically, certain studies indicate that the size of a company influences the effects of ESG on organizations (Ramecesse, 2021). Martínez-Martínez et al. (2017) also advocate that firm size will influence the strength of the relationship between ESG and financial performance. In the case of SMEs, the new regulation may impose higher

fixed costs related to personnel and the implementation of new reporting software, potentially hindering the realization of positive effects for small companies engaged in ESG. The aforementioned characteristics of SMEs makes these types of companies operate differently. Therefore, the implementation of ESG practices requires specific analysis (Magrizos et al., 2021). Thus, based on previous justification the following hypothesis is proposed:

H3. SMEs find it more difficult than large companies to monetize the results from ESG implementation.

2.3 | ESG and crisis resilience

Magrizos et al. (2021) provide a noteworthy conclusion that enhances the significance of ESG activities. They analyze the role of this variable in an economic crisis context and conclude a positive effect of ESG practices during the crisis. This raises a very interesting perspective on the role ESG activities play in periods of crisis, an aspect that has not been extensively explored by many authors (Folger-Laronde et al., 2022; Ursic & Cestar, 2022). Although relatively unexplored, this topic holds valuable information for companies. The potential influence of ESG on the survival or resilience of a company during an unstable economic period can serve as a guide for managing such situations. This positive effect may be because the commitment of companies to ESG favors the behavior of employees in the workplace (Garrido-Ruso & Aibar-Guzmán, 2022); attitudes that will influence business performance. Therefore, maintaining a high level of involvement in such activities during periods of crisis can be a strategic approach to raise employee engagement with the organization, ultimately enhancing business performance (Garrido-Ruso & Aibar-Guzmán, 2022; Naffa & Dudás, 2023).

The presence of a country in a crisis entails an atmosphere of uncertainty across various domains (social, economic, political, etc.). Consequently, companies must confront these situations and seek tools to help them overcome these challenging periods (Seles et al., 2019). The global economic crisis triggered by the COVID-19 pandemic has thrust companies into an unprecedented situation. Therefore, it is of interest to understand the role that ESG activities play in these circumstances (Hwang et al., 2021).

Given the contemporary relevance and heightened awareness of sustainability, it becomes essential to discern whether, during a downturn in the main operations of a company, investing in ESG activities is a worthwhile endeavor that can enhance the situation or whether it merely represents an additional expense. Previous literature relates the idea that economic crises are accompanied by a reduction in ESG spending as the priorities of enterprises change (Kavoura & Sahinidis, 2015). Hwang et al. (2021) also discuss what role ESG management plays in the financial performance of firms and how these types of activities could be a tool to overcome the economic crisis caused by the COVID-19 pandemic. Whelan et al. (2021) also assert that ESG investing tends to offer protection during downturns, providing asymmetric benefits.

In light of the situation stemming from the COVID-19 pandemic, we analyze the role of ESG in the crisis situation during the pandemic. To this end, we propose the following hypotheses:

H4. Companies with a higher level of ESG present a higher level of resilience in periods of crisis.

H5. ESG (Environmental, social, labor and governance) dimensions positively influence the level of resilience during periods of crisis.

2.4 | ESG disclosure and committees

ESG disclosure consists of companies sharing and communicating their ESG-related activities to different stakeholders (Buallay et al., 2020). The growing attention to ESG and increased company involvement in these activities implies effective communication of ESG initiatives. As a result, companies are extending their communication beyond economic-financial information to address stakeholders and report on the societal responsibilities they undertake (Kuzey et al., 2021; Maqbool & Zameer, 2017). It is not enough to merely implement ESG activities, it is essential to make them visible and communicate them (Arendt & Brettel, 2010). The importance of this issue is so evident that it is becoming increasingly common to see companies developing ethical codes and public reports in which they communicate their ESG activities or are evaluated by third parties (Bučiūnienė & Kazlauskaitė, 2012). Such practices also address the informational needs of stakeholders (Baraibar-Diez & Sotorrio, 2018).

This relevance is also notable in the literature. Palazuelos et al. (2022) conducted a literature review to trace the evolution of research on non-financial information over the last twenty years. The results clearly show that, in the last decades this topic has gained importance. In the year 2000, there were no papers published on this subject, but by 2020, a substantial portion of articles indexed in the JCR and Scopus databases addressed with this topic. However, its considerable presence in economic literature began around 2018, which indicates the relevance of the subject we are dealing with. Several studies analyze the relationship between ESG (including disclosure and communication) and financial performance (Baraibar-Diez & Sotorrio, 2018; Brammer & Pavelin, 2016). The advantages of such actions are that the more information a firm discloses about ESG, the more committed the firm is to ESG spending (Maqbool & Zameer, 2017). Moreover, transparency and performance increase, while costs and risk decrease (Lindgreen et al., 2009; Maignan & Ferrell, 2001; Orlitzky et al., 2003). It is important to emphasize, as Whelan et al. (2021) conclude in their meta-analysis, the necessity of accompanying ESG disclosure with a strategy, as ESG disclosure on its own does not drive financial performance.

Baraibar-Diez and Sotorrio (2018) study the relationship between ESG and corporate reputation, finding that reputation improves when ESG activities are not only performed but also disclosed (Buallay et al., 2020). Some authors state the importance of ESG disclosure in

improving financial performance and thus gaining a competitive advantage (McWilliams et al., 2006; Porter & Kramer, 2006). ESG disclosure has implications for stakeholder trust and, if utilized effectively, supports organizational sustainability (Buallay et al., 2020). Moreover, ESG disclosure leads to positive attitudes and increased productivity among internal stakeholders (Giang & Dung, 2022).

If the process of disclosing non-financial information is already complex, it becomes even more challenging when contextualized within SMEs. As mentioned above, these types of companies have several peculiarities, and the fact that they are small means an additional cost when publicly communicating ESG activities (Brammer & Millington, 2006; Ting, 2021). SMEs tend to use informal channels for communication with their stakeholders, due to their close relationships with them. Nowadays, especially with the scope of social networks, it has become increasingly convenient to communicate information without the necessity for professional reporting (Yang & Basile, 2022). Ting (2021) makes a comparison between SMEs and large companies, asserting that while large companies may potentially communicate actions that are not actually performed, SMEs perform these actions, albeit facing challenges in effectively communicating them.

Consequently, and considering the results obtained from previous studies, the following hypothesis is established:

H6. ESG disclosure positively influences the performance of companies.

Many international regulations and guidelines recommend establishing an ESG committee as one of the first stages in implementing an effective sustainability policy (Baraibar-Diez & Odriozola, 2019). This is due to the numerous positive effects it can bring to a company. The existence of these committees improves company performance by focusing on environmental, social and governance aspects. This leads to the adoption of sustainable practices, effective risk management, and the creation of long-term value, thereby attracting investors and instilling confidence in the market.

Consequently, we propose the following hypothesis:

H7. The existence of an ESG committee positively influences the performance of companies.

3 | METHODOLOGY AND DATA

This section studies the impact of ESG implementation on the performance and risk of a sample of Spanish companies. To analyze the relationship between ESG implementation and business performance and risk, it is necessary to develop an indicator to measure the level of ESG activity implementation by companies, because standardized metrics tailored for SMEs are not readily accessible. This section, therefore, explains the construction of various indices to measure ESG implementation by companies, as well as the different dimensions that constitute it. Additionally, it provides details about the data used and the independent variables under analysis.



3.1 | Sample and data description

The data for this paper has been obtained from two sources the economic and financial data have been collected from SABI (Iberian Balance Analysis System) database and the ESG data have been obtained through a survey. We employed the same ESG index throughout the analysis period (2018–2020) because it is a variable that does not undergo short-term changes. Thus, the same value is utilized for the studied years, assuming that differences in the level of ESG implementation of the companies remains constant during certain periods.

The initial sample is made up of 538 Spanish companies (from the northern region), comprising 402 small companies (74.72%) and 136 medium or large companies (25.28%). After considering those included in SABI database, the sample has been reduced to 509 companies. Despite this reduction, it remains highly representative of the population in the region (245.660 companies) because the confidence level is higher than 95%. The electronic survey was sent to a random sample of companies and carried out in the months of July to November 2019. The survey utilized dichotomous questions to assess the degree of ESG implementation across its various dimensions. It was directed to the management of the company, using the company directory provided by the Galician Institute for Economic Promotion (IGAPE).

The number of valid responses in our study (509) surpasses that of other surveys employed in similar studies focused on gathering information about the ESG performance level of companies. For instance, Sideri (2023) had 43 responses, Liu et al. (2022) had 304 responses, and Tran and Nguyen (2021) had 280 responses.

3.2 | ESG measures

3.2.1 | Measuring ESG implementation through an index

A review of the papers published in recent years on ESG and SMEs shows that there is no clear criterion for measuring this variable. First of all, the difference observed in the number of items used by each study to measure ESG is striking, indicating that there is no unanimity among researchers in deciding which criteria to consider when measuring ESG activities. The article that uses the fewest items applies four and the one that uses the most thirty-one. It should also be noted that each of these studies uses different scales, to such an extent that there are practically no more than four papers that coincide, being the most used the one of Turker (2009). Having analyzed this, we are in line with Barauskaite and Streimikiene (2021), who highlight the need to establish uniform ESG assessment tools and indicators to measure the ESG performance of companies. This is a very complicated task, since as we said earlier, ESG is composed of different dimensions, and the measurement used must consider all of them (Martinez-Conesa et al., 2017; Qu er e et al., 2018). The findings of Allouche and Laroche (2005) suggest that ESG should be investigated considering each of its dimensions, as each of them may not influence financial performance in the same way.

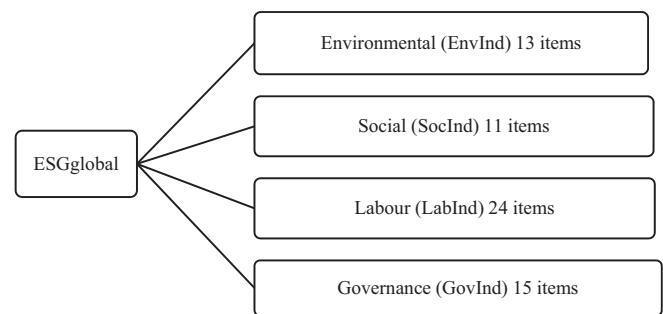


FIGURE 1 ESG index structure. Source: Own elaboration.

This paper develops an index to measure the degree of ESG implementation, with the following interpretation. Companies with a higher score are those that have implemented a greater number of good practice actions and are considered to be the most ESG-involved companies. Self-reported ESG data is known to be biased due to various factors, including cognitive biases such as confirmation bias, social desirability bias, etc. In fact, although eliminating these biases poses a significant challenge, multiple precautions have been implemented to minimize their impact (indirect questioning, ensuring the anonymity and confidentiality of submitted responses, using simple language, and providing relevant examples in questionnaire development, employing dichotomous variables instead of item scales, and testing the survey questionnaire on a limited sample group as part of a pilot study, among other measures). For instance, in contrast to Liu et al. (2022), who employed a seven-point Likert scale, where respondents assessed the perceived level of activities on a scale ranging from “very low” (rated as 1) to “very high” (rated as 7), we employ dichotomous variables as indicators of the degree of ESG activity implementation. This approach is chosen for its lesser subjectivity and clearer in their evaluation.

The composition of our ESG index (Figure 1), which consists of 63 variables is detailed below. Additionally, partial indicators are also considered for each of the four differentiated dimensions: Environmental, social, labor and governance. The development of this index is necessary given the difficulty of replicating existing indexes for small companies.

The construction of each of these indicators is described in detail in Appendix A.

3.2.2 | Methodology to build the indices

The construction of the indices can be approach through various methods, and the outcomes may be sensitive to how the indices are computed. In this paper, the multiple criteria decision analysis (MCDA) index tool proposed by Cinelli et al. (2021) is employed. The process involves two key steps: normalization and aggregation (Table 1). The first step ensures comparability of indicators and dimensions on the same scale, and the second step combines the normalized indicators. The different aggregation alternatives allow different levels of trade-offs to be applied between indicators.

TABLE 1 Methods employed in developing the index.

Normalization methods		Aggregation methods	
Percentile	$I_{ic} = \frac{a_i + 0.5fx_{ic}}{N}$	Additive	$score_c = \sum_{i=1}^n I_{ic} w_i$
Min – Max	$I_{ic} = \frac{x_{ic} - \min(x_i)}{\max(x_i) - \min(x_i)}$	Geometric	$score_c = \prod_{i=1}^n I_{ic}^{w_i}$
Standardization	$I_{ic} = \frac{x_{ic} - x_{ic=\bar{c}}}{\sigma_{ic=\bar{c}}}$	Harmonic	$score_c = \frac{\prod_{i=1}^n w_i}{\sum_{i=1}^n I_{ic}^{w_i}}$

Note: I_{ic} , the normalized value of indicator i for alternative c ; x_{ic} , the value of indicator i for alternative c ; a_i , the amount of values lower or equal to itself; fx_{ic} , the frequency of indicators with same value x_{ic} ; N , the number of alternatives; $x_{ic=\bar{c}}$, the average value of indicator i across all alternatives; $\sigma_{ic=\bar{c}}$ the standard deviation of indicator i across all alternatives; $\min(x_i)$, the minimum value of indicator i across all alternatives; $\max(x_i)$, the maximum value of indicator i across all alternatives; $score_c$, composite score for alternative c ; w_i , weight of indicator i .

Source: Own elaboration.

TABLE 2 Summary statistics for different methods.

Variable	Obs	Mean	Std. dev.	Min	Max
ESGglobal	1041	32.762	12.111	1	59
Addstd	1041	0.5258	0.1975	0	1
AddMinmax	1041	0.5211	0.1966	0	1
HarmStd	1041	0.5408	0.1795	0	1
HarmMinm1	1041	0.4407	0.1974	0	1
HarmMinm2	1041	0.3953	0.2324	0	1
GeomStd	1041	0.5414	0.1866	0	1
GeomMinm1	1041	0.4948	0.1908	0	1
GeomMinm2	1041	0.4847	0.1974	0	1

Note: With the exception of the first variable, each one represents an index made as the combination of an aggregation and normalization method. ESGglobal: Is the not normalized index; Addstd: additive + standardized; AddMinmax: Additive + Min – max; HarmStd: Harmonic + Standardized; HarmMinm1: Harmonic + Min – Max; HarmMinm2: Harmonic + Min – Max2; GeomStd: Geometric + Standardized; GeomMinm1: Geometric + Min – Max; GeomMinm2: Geometric + Min – Max2. Source: Own elaboration.

Ten different alternatives have been estimated, resulting from the combination of four normalization methods (percentile, standardized, categorical and logistic) with three aggregation techniques (additive, geometric and harmonic). Geometric and harmonic means reduce the offset between indicators (Langhans et al., 2014). However, there is no predefined rule for selecting the best alternative (Carrino, 2016) and according to Gasser et al. (2020), it is possible to construct a composite index by combining indices estimated through different normalization and aggregation techniques. The robustness of the estimated indices has been assessed through sensitivity and uncertainty analysis to evaluate the stability of the ratings and to consider the variability of the results based on preferences (methods used for normalization and aggregation).

3.2.3 | Summary statistics of the indices

Table 2 shows the descriptive statistics for the several global ESG indices calculated using different combinations of normalization and aggregation. As can be seen in the following table, the chosen method

influences both the means and the standard deviations of the index values. These variations may result in different outcomes when studying the impact of ESG indices on corporate fundamentals.

Specifically, we can see how the main differences are observed between the harmonic method and the others. Across the various methods employed, the mean value ranges from 0.3953 (HarmMin2: Harmonic + Min – Max2) to 0.5414 (GeomStd: Geometric + Standardized). The harmonic method shows slightly lower values (0.4407 and 0.3953) compared to the rest of the data. Regarding the standard deviation, differences are also noticeable, with this value ranging between 0.17 and 0.19. However, for the harmonic data it is 0.2324.

Moreover, in the correlation analysis (Table 3), most correlations exceed 90%, except when comparing the additive models without normalization and those normalized with the Percentile-Harmonic combination. In the latter case, despite still having very high values, the correlation decreases to 0.71–0.72. Taking into account the different variants when creating an index, it becomes evident that validating models using different calculated indices may yield varied results. Except for those using the harmonic mean, the results are closely related, and the effect is therefore similar. For the main analysis, we will use the first index, and the harmonic will be employed in the robustness section.

3.3 | Variables and descriptive statistics

Given that our sample comprises SMEs, we have employed measures tailored for this type of companies. The dependent variables include performance and risk measures based on accounting, which have been utilized in prior studies (Mahoney & Roberts, 2007; Margolis & Walsh, 2001; Otero-González et al., 2021) (Table 4).

Table 5 shows the descriptive statistics and definitions of the variables used in our paper.

Table 6 shows the mean differences between companies with a high level of ESG implementation (ESG = 1), for those with values higher than the median in the specific index, versus the companies with a low level of ESG implementation (ESG = 0) when the value is below the median. We analyze the effect of each of the ESG sub-dimensions: Environmental, social, labor and governance on business

TABLE 3 Correlations between the alternative indices.

	ESGglobal	Addstd	AddMinmax	HarmStd	HarmMinm1	HarmMinm2	GeomStd	GeomMin1	GeomMinm2
ESGglobalew	1								
Addstd	0.9623	1							
AddMinmax	0.9483	1.00	1.00						
HarmStd	0.8912	0.95	0.95	1.00					
HarmMinm1	0.7607	0.85	0.86	0.93	1.00				
HarmMinm2	0.6071	0.71	0.72	0.82	0.97	1.00			
GeomStd	0.9453	0.99	0.99	0.98	0.90	0.77	1.00		
GeomMinm1	0.9028	0.97	0.97	0.97	0.95	0.85	0.98	1.00	
GeomMinm2	0.8448	0.92	0.93	0.96	0.98	0.93	0.95	0.98	1.00

Note: With the exception of the first variable, each one represents an index made as the combination of an aggregation and normalization method.

ESGglobal: Is the not normalized index; Addstd: Additive + Standardized; AddMinmax: Additive + Min – max; HarmStd: Harmonic + Standardized; HarmMinm1: Harmonic + Min – Max; HarmMinm2: Harmonic + Min – Max2; GeomStd: Geometric + Standardized; GeomMinm1: Geometric + Min – Max; GeomMinm2: Geometric + Min – Max2.

Source: Own elaboration.

TABLE 4 Variables.

Dependent variables	Definition
Financial profitability (ROE)	Operating income/Average Equity
Economic profitability (ROA)	EBIT/ Average Total assets
Cashflow of total assets (CashflowTA)	Cashflow operations/Average total assets
Increase in profitability	(Profit on current year–Profit on previous year)/ Profit on previous year
Return on assets adjusted by risk (ROAadj)	ROA/ROA volatility
Return on equity adjusted by risk (ROEadj)	ROE/ROE volatility
Independent variables	Definition
Size (logTA)	Logarithm of total assets
Family	Self-declared in the survey
Solvency	Equity/Non-current assets
Growth	Growth rate in sales and operating revenue
ESG	Index previously explained

Source: Own elaboration.

performance. Specifically, the table shows a comparison between the expectation of the managers regarding the ESG effect and the actual outcomes.

We can observe that regarding environmental ESG there are no significant differences in terms of increased costs, with a difference of 0.0045, favoring companies with low ESG involvement. However, there are significant differences regarding the variables increased profitability, financial cost reduction, increased sales, improved reputation and resilience in pandemic. These variables exhibit higher values for companies more committed to ESG, which confirms that

managers are more optimistic about the efficacy of these tools in enhancing financial performance. Companies with a higher degree of implementation in environmental ESG activities show significant differences compared to those with less implementation in terms of ROA, cash flow and revenue growth, being higher for those with higher environmental level. However, no differences are observed in terms of ROE, and risk-adjusted return.

Similar patterns are observed in the social dimension, where differences are more pronounced than in the preceding case. For the question of increased costs, the difference is not significant, while for increased profitability, reduced financial costs, increased sales, improved reputation, and resilience to pandemics the situation is still better for companies with a high social index. These variables have a higher value for companies with more social implementation, confirming the optimism of the managers about the potential of these activities to improve financial metrics in their companies. Surprisingly, and contrary to the beliefs of managers, no significant difference is found between the two types of companies in terms of actual data.

For the labor dimension, all the analyzed variables show a significant mean difference between the two levels considered. The increase in cost is the only variable that shows a positive difference, that is, managers believe that companies with lower ESG implementation suffer a higher increase in the costs related to this activity. As for the other variables, -increased profitability, reduced financial costs, increased sales, improved reputation, and resilience to pandemics-, the situation is favorable for companies with higher implementation. Therefore, the implementation of activities in the labor dimension brings great value to the companies, as evidenced by the significant mean differences across all parameters. Regarding actual data, significant differences are observed only in terms of income growth; the other variables are not significant.

Finally, regarding the governance dimension, we can observe, as in the previous case, significant mean differences in all variables. Cost increase is the only variable that shows a positive difference, that is, managers consider that companies with a lower level of

TABLE 5 Descriptive statistics of the main variables.

Variable	Obs	Mean	Std. dev.	Min	Max
ESGglobal	2432	32.76275	12.11137	1	59
Lablnd	3058	11.16547	5.667435	0	23
Soclnd	3249	5.618036	2.803443	0	11
Envlnd	2943	4.27421	3.274425	0	12
Govlnd	2445	12.27403	3.761964	0	16
ROA	1401	0.0576	0.1059	-0.9094	1.4685
CashflowTA	1401	0.0720	0.0953	-0.8279	1.0916
ROE	1401	0.2365	5.4846	-13.0515	1.7257
Growth	1372	0.0369	0.2773	-0.9728	1.7257
ROAadj	1384	1.7325	2.9827	-6.5223	8.2787
ROEadj	1362	1.4877	4.0525	-4.5714	7.4160
logTA	1401	14.6009	1.6669	9.8121	24.3058
Family	1198	0.5634	0.4962	0.0000	1.0000
Solvency	1401	0.4710	0.2939	-4.1842	0.9938

Note: ESGglobal: index to measure the degree of ESG implementation, more details are provided in Appendix A; Lablnd: index to measure the degree of labor ESG, more details are provided in Appendix A; Soclnd: index to measure the degree of social ESG, more details are provided in Appendix A; Envlnd: index to measure the degree of environmental ESG, more details are provided in Appendix A; Govlnd: index to measure the degree of governance ESG, more details are provided in Appendix A; ROA: economic profitability; CashflowTA: cashflow of total assets; ROE: financial profitability; Growth: growth rate in sales; ROAadj: return on assets adjusted by risk; ROEadj: return on equity adjusted by risk; logTA: size of the company; Family: 1 if the company is owned and managed by a family, 0 otherwise; Solvency: Solvency ratio.

Source: Own elaboration.

implementation suffer a higher increase in the costs derived from this activity. As for the other variables, profitability increase, financial cost reduction, sales increase, reputation improvement and resilience in pandemics, it should be noted that in this case, the differences are less pronounced than in the labor one. This implies that managers perceive ESG activities related to governance as having a less noticeable effect on the results of the company. Surprisingly, and contrary to the opinions held by managers, the governance dimension does not show significant differences between the two types of companies and has no influence on any of the variables considered.

After analyzing these results, we can conclude that managers trust in the implementation of ESG activities as a tool to enhance business effectiveness. Consequently, Table 7 shows the results obtained about the global index. Finally, the global index does show a significant difference between these two groups in the ROE risk adjusted.

4 | MODELS AND RESULTS

The aim of this paper is to analyze the influence of ESG implementation and its individual dimensions on the performance and risk of the studied companies. To achieve this, after estimating the implementation indices, several regression models with cluster-robust standard errors have been estimated (both pooled and random effects) considering the year and the sector as control variables, along with other independent variables outlined in Table 5. Lagged variables have been

considered to control potential reverse causality concerns. The model to be estimated is as follows:

$$Y_{it} = \beta_0 + \beta_1 Index_i + \sum_{j=2}^5 \beta_j X_{it} + \delta_t Year_i + \mu_i + \epsilon_{it}$$

where:

Y_{it} = for company i at year t , alternatively represents the performance or risk metrics defined above.

$Index_i$ = for the company i , alternatively represents the implementation of ESG activities and the social, labor, environmental and governance dimensions separately, defined above.

X_{it} = variables related to size, family ownership, debt, growth and sector, defined above.

$Year_i$ = dummy time variables.

μ_i captures persistent cross-sectional heterogeneity.

ϵ_{it} = Error term.

The results of the estimated models are shown below. Table 8 analyses the effect of each ESG component on the profitability and risk of the company. The results show that the environmental index has a significant and positive effect on ROE and cash flow but does not exhibit a significant impact on ROA, growth or risk adjusted return. These findings align with previous research such as Velte (2017) or Iwata and Okada (2011). In contrast to our study, Aydogmus et al. (2022) found a positive relationship between this variable and ROA. Nevertheless, Xie et al (2019) conducted a comprehensive

TABLE 6 Expectations of the managers regarding the implementation of ESG activities for each dimension: Environmental, social, labor and governance.

	Expected data				Actual data		
	EnvInd				EnvInd		
	ESG = 1	ESG = 0	Diff.		ESG = 1	ESG = 0	Diff.
Increases cost	2.6072	2.6117	0.0045	ROA	0.0669	0.0547	-0.0122**
Increases profitability	2.9897	2.4187	-0.5710***	CashflowTA	0.0812	0.0678	-0.0133***
Financial cost reduction	2.3152	2.1302	-0.1851***	ROE	0.0978	0.0816	-0.0161
Increase of sales	2.6279	2.2711	-0.3568***	Growth	0.0593	0.0267	-0.0326*
Reputation improvement	3.9948	3.2993	-0.6955***	ROAadj	1.8014	1.7338	-0.0676
Resilience in pandemic	3.8837	3.6529	-0.2308***	ROEadj	1.4436	1.4006	-0.043
	SocInd				SocInd		
	ESG = 1	ESG = 0	Diff.		ESG = 1	ESG = 0	Diff.
	Increases cost	2.6027	2.6834		0.0807	ROA	0.0617
Increases profitability	3.0293	2.4204	-0.6089***	CashflowTA	0.0742	0.073	-0.0011
Financial cost reduction	2.408	2.0805	-0.3275***	ROE	0.0833	0.094	0.0107
Increase of sales	2.728	2.2379	-0.4901***	Growth	0.0487	0.039	-0.0098
Reputation improvement	4.016	3.2719	-0.7441***	ROAadj	1.8648	1.7341	-0.1306
Resilience in pandemic	4.0027	3.5778	-0.4248***	ROEadj	1.4531	1.4734	0.0203
	LabInd				LabInd		
	ESG = 1	ESG = 0	Diff.		ESG = 1	ESG = 0	Diff.
	Increases cost	2.4617	2.8695		0.4077***	ROA	0.0629
Increases profitability	2.9679	2.4421	-0.5258***	CashflowTA	0.076	0.073	-0.003
Financial cost reduction	2.3037	2.1347	-0.1690**	ROE	0.0919	0.0864	-0.0055
Increase of sales	2.6198	2.2716	-0.3482***	Growth	0.054	0.0263	-0.0277*
Reputation improvement	4.042	3.1916	-0.8504***	ROAadj	1.7434	1.8689	0.1255
Resilience in pandemic	4.0272	3.5179	-0.5093***	ROEadj	1.4514	1.5572	0.1059
	GovInd				GovInd		
	ESG = 1	ESG = 0	Diff.		ESG = 1	ESG = 0	Diff.
	Increases cost	2.4943	2.7346		0.2402***	ROA	0.0602
Increases profitability	2.8267	2.5288	-0.2979***	CashflowTA	0.074	0.0741	0.0001
Financial cost reduction	2.2926	2.1193	-0.1733**	ROE	0.0926	0.0881	-0.0045
Increase of sales	2.5455	2.3169	-0.2286***	Growth	0.0355	0.0477	0.0122
Reputation improvement	3.7784	3.3992	-0.3792***	ROAadj	1.8166	1.804	-0.0126
Resilience in pandemic	3.8182	3.6626	-0.1556**	ROEadj	1.4946	1.3627	-0.1319

Note: This table shows the differences in means (Diff) between the companies with high ESG for each dimension higher than the mean (ESG = 1) and those with lower values than the mean (ESG = 0). * Significant at 10%. ** Significant at 5%. *** Significant at 1%.

Source: Own elaboration.

analysis of this variable, detailing and scrutinizing the impact of each ESG activity on ROA, and they found that most activities do not exhibit significant effect on ROA, which supports our results.

The social index has a significant effect on the same variables, ROE and CFLOW, but with a negative sign, and it also shows no significant impact on ROA, growth or risk adjusted return. This finding is consistent with research by Nollet et al. (2016) and Alareeni & Hamdan (2020). The latter confirm that disclosure of social practices will also have a negative impact on financial performance.

Regarding the labor index, there is a positive effect on ROE, ROA and cash flow, but no discernible relationship with growth or risk-adjusted return has been found. These results reflect the importance of considering this variable regardless of the social index. The results obtained by Tarmuji et al. (2016), Velte (2017) or Aydogmus et al. (2022), support the positive relationship between social activities and economic performance. However, this association might be attributed to the absence of a distinction between labor and other social activities. Upon closer examination, separating these activities reveals a shift in the observed results.

TABLE 7 Differences between companies with high and low ESG implementation.

ESGglobal					
	ESG = 1	ESG = 0	Diff.	Std. error	Obs.
ROA	0.0637	0.0598	-0.0039	0.0054	910
CashflowTA	0.0773	0.0744	-0.0029	0.0051	910
ROE	0.0918	0.0931	0.0013	0.0109	910
Growth	0.048	0.0368	-0.0112	0.0184	910
ROAadj	1.8166	1.7112	-0.1054	0.1346	910
ROEadj	1.5595	1.2059	-0.3536***	0.1132	910

Note: This table shows the differences in means (Diff) between the companies with high ESG (level higher than de median) for each dimension (ESG = 1) and those with lower values than the mean (ESG = 0). * Significant at 10%. ** Significant at 5%. *** Significant at 1%.

Source: Own elaboration.

TABLE 8 Estimated model with ESG dimensions.

Variable	ROE	ROA	CFLOW	GROWTH	ROAadj	ROEadj
EnvInd	0.0035*	0.0009	0.0018*	-0.0002	0.0242	0.0283
SocInd	-0.0051**	-0.0012	-0.0028**	-0.0021	-0.0046	-0.023
LabInd	0.0029**	0.0014**	0.0010*	0.0046	0.0112	0.0232
GovInd	-0.0009	-0.0007	0.0002	-0.0034	-0.0476**	-0.025
LogTA	-0.0108**	-0.0036**	-0.0043**	-0.0263**	0.1192***	0.0771*
Family	0.0129	-0.0022	0.0061	0.0118	0.1226	-0.0101
Solvency	-0.0553**	0.0221***	0.0235***	-0.0882	-0.2548	0.3788
Growth	-0.0013	-0.0016	0.0006	-	-0.0660**	-0.0182
Year	YES	YES	YES	YES	YES	YES
Sector	YES	YES	YES	YES	YES	YES
_cons	0.2654***	0.0899***	0.1225***	0.5282***	-0.0194	-0.337
N	764	776	777	779	776	764
r2	0.0512	0.0552	0.0644	0.0348	0.0584	0.0532

Note: This table shows the estimates of the models using panel regression models for each dimension of the index. Year and Sector are dummies for fixed effects. * Significant at 10%. ** Significant at 5%. *** Significant at 1%.

Source: Own elaboration.

Furthermore, it is noteworthy that ESG governance leads to a decrease in risk-adjusted return, without exhibiting a relationship with the other variables. Therefore, it can only be stated that environmental and labor ESG positively influence the performance of the company, so Hypothesis 2 can only be partially accepted. This contradicts prior research conducted by Velte (2017) and Aydogmus et al. (2022), which notably focused on large companies rather than SMEs.

Table 9 shows the results of the effect of the implementation of ESG activities at the global level. However, it is noteworthy that when this variable is analyzed, no significant effect on the dependent variable is observed. This may be due to the fact that while each sub-dimension within the set of ESG activities exerts a different effect, when the dimensions are unified into an index, these relationships offset each other. In fact, considering previous results, social and governance ESG activities have a negative effect on profitability, while environmental and labor ESG have a positive effect. Therefore, according to our estimations, when ESG is evaluated globally, the effect on performance and risk is not significant, so Hypothesis 1

cannot be accepted. These results diverge from studies by Martinez-Conesa et al. (2017), Melo et al. (2020), and Velte (2017), which advocate for a positive relationship between these variables. One possible explanation, in addition to the offset among the different components, could be the prevalence of a significant number of small companies in our sample. At the same time, non-linear relationships might contribute to the non-significance of the parameters for the ESGglobal variable. Both these effects are considered in the following sections.

4.1 | Analysis of the relevance of firm size

Table 10 analyses the effect of the degree of ESG activity implementation taking into account the company size. The inclusion of a variable representing company size in the model, specifically the degree of development or implementation of ESG activities for small companies, significantly alters the results. It is observed that, in the case of

Variable	ROE	ROA	CFLOW	GROWTH	ROAadj	ROEadj
ESGglobal	0.0008	0.0004	0.0003	0.0004	-0.0019	0.0051
logTA	-0.0102*	-0.0035**	-0.0039**	-0.0252*	0.1180***	0.0796*
Family	0.0134	-0.0019	0.0066	0.0102	0.1395	0.0022
Solvency	-0.0596**	0.0196**	0.0228***	-0.1194	-0.325	0.3171
Growth	-0.0006	-0.0011	0.0009	-	-0.0499	-0.0062
Year	YES	YES	YES	YES	YES	YES
Sector	YES	YES	YES	YES	YES	YES
_cons	0.2403***	0.0774***	0.1076***	0.4480**	-0.3053	-0.613
N	759	776	777	779	776	764
r2	0.0422	0.0422	0.0494	0.0105	0.0432	0.0417

Note: This table shows the estimates of the models using panel regression models for the global ESG. * Significant at 10%. ** Significant at 5%. *** Significant at 1%. Source: Own elaboration.

Variable	ROE	ROA	CFLOW	GROWTH	ROAadj	ROEadj
ESGglobal	0.0011*	0.0006*	0.0004	0.0024	0.0175**	0.0214**
ESGsmall	-0.0008*	-0.0005**	-0.0002	-0.0025*	-0.0239***	-0.0232***
logTA	-0.0142**	-0.0061**	-0.0049*	-0.0428**	-0.0318	-0.0599
Family	0.013	-0.001	0.0086	0.0138	0.0572	-0.0472
Solvency	-0.0696**	0.0216***	0.0212***	-0.1051	-0.226	0.4081
Growth	-0.0023	-0.0014	0.0008	-	-0.0597*	-0.0124
Year	YES	YES	YES	YES	YES	YES
Sector	YES	YES	YES	YES	YES	YES
_cons	0.3180***	0.1259***	0.1264***	0.6976**	1.9821**	1.4683*
N	695	710	711	715	711	699
r2	0.0497	0.0521	0.0585	0.0114	0.061	0.0618

Note: This table shows the estimates of the models using panel regression models considering the size of the companies. To perform this analysis, the sample is classified according to size, creating a dummy variable to identify small companies. The ESGsmall variable captures the interaction of ESGglobal with the small business dummy. * Significant at 10%. ** Significant at 5%. *** Significant at 1%. Source: Own elaboration.

small companies, the effect of ESG activity implementation on the analyzed variables is predominantly negative. Specifically, the results show a negative and significant impact on ROE, ROA, growth, ROAadj, and ROEadj. Therefore, our results are in line with Hypothesis 3, supporting the notion that small firms encounter greater challenges than large companies in capitalizing on the outcomes of implementing ESG activities. Given the larger representation of small companies in our sample, these findings align with the meta-analysis by Khan's (2022), illustrating the challenges smaller enterprises face in making such activities profitable.

4.2 | Effects during the pandemic period

The following Table 11 shows the importance of ESG activities during an economic crisis, particularly examining the role of global ESG and

TABLE 9 Estimated model for global ESG.

TABLE 10 Effect of the degree of ESG implementation considering the size of the companies.

each of its dimensions in the context of the economic downturn caused by the COVID-19 pandemic. The results indicate that only the labor index reflects a positive and significant relationship in all the models. This means that actions at the labor level are associated with a higher level of resilience and performance in unstable contexts. However, neither the global index nor the environmental or governance index are relevant in these situations. Thus, only social and labor ESG activities contribute to an elevated level of resilience during crisis periods. Consequently, it is not possible to accept Hypothesis 4 (global index) and only partially Hypothesis 5. This disparity could be attributed to the emphasis on ESG commitment by companies, which positively influences employees in the workplace. This includes increased motivation, stronger identification with the company, and heightened commitment, ultimately reducing turnover intentions. These attitudes significantly impact business performance (Garrido-Ruso & Aibar-Guzmán, 2022).

TABLE 11 Effect of the degree of ESG implementation during the pandemic period.

Pandemic resilience					
Variable	ESGglobal	EnvInd	SocInd	LabInd	GovInd
ESGglobal	0.007				
EnvInd		0.0023			
SocInd			0.0424*		
LabInd				0.0281**	
GovInd					-0.0121
Controls	YES	YES	YES	YES	YES
_cons	3.2632***	2.7713***	2.7729***	3.1540***	2.7967***
N	232	273	299	282	271
r2	0.0925	0.0729	0.09	0.0853	0.078
ROA					
Variable	ESGglobal	EnvInd	SocInd	LabInd	GovInd
ESGglobal	0.0008				
EnvInd		0.0021			
SocInd			0.0026		
LabInd				0.0020*	
GovInd					-0.0007
Controls	YES	YES	YES	YES	YES
_cons	0.1369**	0.1355**	0.1316**	0.1183**	0.1186**
N	232	273	299	282	271
r2	0.1109	0.0779	0.0922	0.0924	0.0777
CONTROLS	YES	YES	YES	YES	YES
ROE					
Variable	Mglob	MEnvirInd	MSocInd	MLabInd	MGobInd
ESGglobal	0.0009				
EnvInd		0.0032			
SocInd			0.0031		
LabInd				0.0033*	
GovInd					0.0002
Controls	YES	YES	YES	YES	YES
_cons	0.1579	0.1918*	0.2053**	0.1305	0.12
N	232	273	299	282	271
r2	0.0518	0.0398	0.0437	0.0405	0.0251
Cash flow					
Variable	Mglob	MEnvirInd	MSocInd	MLabInd	MGobInd
ESGglobal	0.0005				
EnvirInd		0.0013			
SocInd			0.0011		
LabInd				0.0016*	
GobInd					-0.0002
Controls	YES	YES	YES	YES	YES
_cons	0.1282**	0.1355**	0.1253**	0.1111**	0.1169**
N	232	273	299	282	271
r2	0.0742	0.0654	0.0744	0.0738	0.0663

Note: This table shows the estimates of the models using panel regression model for the global ESG and for each dimension of the index during the pandemic period. Controls: variables of control have been included in the regression model but are omitted for simplicity in presentation. * Significant at 10%. ** Significant at 5%. *** Significant at 1%.

Source: Own elaboration.

4.3 | Strategy and disclosure

In addition to engaging in ESG activities, it is crucial to understand the outcomes when companies adopt specific ESG-related measures, such as ESG disclosure or the establishment of dedicated ESG committees. Table 12 shows that the existence of an ESG committee in companies has a significant and negative effect on ROE. Conversely, the disclosure of ESG reports has a significant and positive effect on growth. Consequently, ESG disclosure positively influences the results of companies, validating Hypothesis 6. However, the existence of an ESG committee exerts a negative influence on the results of companies, so we cannot accept Hypothesis 7. It is noteworthy that while disclosing ESG activities appears beneficial for companies, maintaining a specific ESG committee does not yield a positive outcome. This discrepancy might stem from the perceived high costs associated with sustaining a

committee. These outcomes resonate with findings from Dalal and Thaker (2019), Chen and Xie (2022) or Carnini Pulino et al. (2022), indicating that ESG disclosure positively influences financial outcomes of companies.

5 | ROBUSTNESS AND RESULTS

In light of the preceding results, we have estimated a new model that includes a quadratic relationship between both variables. The analysis reveals the existence of a quadratic relationship for the variables ROA and Growth, as well as ROAadj and ROEadj (Table 13). These findings improve the estimated model, suggesting that for intermediate levels of implementation of ESG activities, there is a negative effect, and at high levels, there are more positive effects. Considering that the

Variable	ROE	ROA	CFLOW	GROWTH	ROAadj	ROEadj
ESGcommittee	-0.0293*	-0.0033	-0.0097	0.0124	0.139	-0.1881
ESGreporting	0.0096	0.0061	0.0066	0.0839**	-0.0888	0.0085
logTA	-0.0105*	-0.0041**	-0.0035**	-0.0254*	0.1237***	0.1099**
Family	0.011	0.0039	0.0098**	0.0061	0.1361	-0.0643
Solvency	-0.0561**	0.0236***	0.0268***	-0.0809	-0.1673	0.2671
Growth	0.0001	-0.0009	0.0016		-0.0601**	-0.0121
Year	YES	YES	YES	YES	YES	YES
Sector	YES	YES	YES	YES	YES	YES
_cons	0.2834***	0.1043***	0.1123***	0.4971**	-0.4447	-0.6657
N	898	913	915	916	912	894
r2	0.0498	0.0513	0.0676	0.0393	0.0334	0.0306

TABLE 12 Effects of ESG committee and ESG reporting.

Note: This table shows the estimates of the models using panel regression models considering ESG committee and reporting. ESGcommittee: dummy variable to identify companies with ESG committee; ESGreporting: dummy variable to identify companies with ESG reporting. * Significant at 10%. ** Significant at 5%. *** Significant at 1%.

Source: Own elaboration.

TABLE 13 Estimated model with quadratic effects.

Variable	ROE	ROA	CFLOW	GROWTH	ROAadj	ROEadj
ESGglobalnew	-0.0019	-0.0019*	-0.0003	0.0077*	-0.1412***	-0.0734**
ESGglobalsq	0.0000	0.00002**	0.0000	-0.0001*	0.0022***	0.0012**
logTA	-0.0106**	-0.0039**	-0.0040**	-0.0240*	0.0888**	0.0627
Family	0.0139	-0.002	0.0065	0.0103	0.1392	0.0035
Solvency	-0.0592**	0.0208***	0.0231***	-0.1223	-0.242	0.3558
Growth	-0.0006	-0.0011	0.0009		-0.0482	-0.0054
Year	YES	YES	YES	YES	YES	YES
Sector	YES	YES	YES	YES	YES	YES
_cons	0.2855***	0.1158***	0.1178***	0.3278	2.0862***	0.7457
N	759	776	777	779	776	764
r2	0.0434	0.0478	0.0498	0.0113	0.0788	0.0548

Note: This table shows the estimates of the models using panel regression models with quadratic effects. * Significant at 10%. ** Significant at 5%. *** Significant at 1%.

Source: Own elaboration.

TABLE 14 Estimated model with harmonic means.

Variable	ROE	ROA	CFLOW	GROWTH	ROAadj	ROEadj
ESGglobalArm	0.0776	-0.0095	-0.0251	0.5571**	-0.115	1.0458
ESGglobalArmsq	-0.1057	-0.009	0.0085	-0.7318**	-0.4835	-1.6536
logTA	-0.0088	-0.0028*	-0.0033**	-0.0291*	0.0970**	0.0790*
Family	0.0154	-0.0008	0.0076	0.0146	0.1539	0.0227
Solvency	-0.0620**	0.0200**	0.0233***	-0.1188	-0.311	0.3074
Growth	0.0001	-0.0007	0.0013		-0.0451	-0.0013
YEAR	YES	YES	YES	YES	YES	YES
SECTOR	YES	YES	YES	YES	YES	YES
_cons	0.2266***	0.0858***	0.1180***	0.4662**	0.0982	-0.4591
N	764	776	777	779	776	764
r2	0.0358	0.0424	0.0511	0.0158	0.0474	0.0456

Note: This table shows the estimates of the models using panel regression models with harmonic means and quadratic effects. * Significant at 10%. ** Significant at 5%. *** Significant at 1%.

Source: Own elaboration.

highest level is achieved mainly by large companies, it appears that the main benefits are derived only when the company deploys an intense ESG activity, and the effect is more negative for intermediate levels. This result aligns with the one concerning the impact of ESG on small companies.

Given what we have observed previously, the results are sensitivity to the aggregation methods. Consequently, we attempted to utilize harmonic means, and it is evident that the effect changes considerably with respect to the additive aggregation method. Employing this method enhances the correlations and, consequently, the significance, as illustrated in Table 14. These results show that ESG is sensitive to the method used to estimate sustainability.

Finally, to conclude this section, all the information summarized regarding the proposed hypotheses and the obtained results is included in Table 15.

6 | IMPLICATIONS

6.1 | Theoretical implications

The findings of this study have several crucial theoretical implications. Initially, the varied measures utilized in gathering ESG data contribute to the “measurement problem”, potentially explaining the absence of conclusive outcomes in understanding the relationship between ESG and financial performance (Bahta et al., 2021; Galant & Cadez, 2017; Salam et al., 2020). Therefore, there is a need to establish a standardized indicator that resolves this issue, enabling a consistent analysis of the ESG variable and its dimensions across all studies, thus ensuring comparability among companies (Lahouel et al., 2021). Establishing common standards in ESG measurement ensures transparency, comparability, and trust in the information provided by organizations, simplifies regulatory compliance, drives sustainability, and promotes corporate responsibility, facilitating more informed decisions for investors. This research introduces an index designed to measure ESG

TABLE 15 Summary of study results.

Hypothesis	Expected sign and result	Actual result
H ₁ : ESG implementation influences positively the financial performance.	Positive	No effect
H ₂ : ESG dimensions influence positively the performance of the company.	Positive	Environmental: Positive Social: Negative Labor: Positive Governance: Negative
H ₃ : SMEs find it more difficult than large companies to monetize the results from ESG implementation.	Positive	Positive
H ₄ : Companies with a higher level of ESG present a higher level of resilience in periods of crisis.	Positive	No effect
H ₅ : ESG (Environmental, social, labor and governance) dimensions influences positively the level of resilience in periods of crisis.	Positive	Environmental: No effect Social: Positive Labor: Positive Governance: No effect
H ₆ : ESG disclosure positively influences companies' performance.	Positive	Positive
H ₇ : The existence of an ESG committee positively influences companies' performance.	Positive	No effect

Source: Own elaboration.

comprehensively and individually across its sub-dimensions in an objective and detailed manner. Importantly, it is adaptable for implementation in companies of any size, offering a solution to the



prevailing challenges in measuring this variable. In addition, this index presents a novelty with respect to previous studies, the incorporation of an additional category referring to the labor sphere. In this way, the study allows for a more specific analysis of the impact of ESG actions, differentiating between those aimed at internal stakeholders and those aimed at external stakeholders. This approach enables a concentrated emphasis on employment matters.

Furthermore, this study extends the investigation into the relationship between ESG performance and financial outcomes in SMEs, providing a standardized framework for studying these enterprises. Addressing a significant gap in the literature, this research answers the call made by authors such as Reverte et al. (2016) and Choi et al. (2018) to broaden the examination of ESG to SMEs. Notably, our findings highlight the differential impact of ESG on performance between SMEs and larger firms, emphasizing the need for further research in this direction.

Moreover, this study introduces a fresh perspective on ESG analysis, showcasing its potential utility as a survival tool during crises, corroborating the findings of Magrizos et al. (2021). Furthermore, it responds to the necessity outlined by Shalhoob and Hussainey (2023) to explore the role of ESG disclosure specifically within SMEs.

6.2 | Practical implications

Regarding the practical implications of this research, the findings offer guidance to companies in identifying activities that yield the most benefits and determining the ESG sub-dimensions they should focus on depending on their goals (e.g., increased resilience, improved financial performance, risk reduction, etc). It is important for companies to focus on measures related to labor ESG, since caring for employees fosters a stronger sense of identification and commitment to the company, reduces turnover intentions, and leads to better staff performance, ultimately reflected in financial results (Garrido-Ruso & Aibar-Guzmán, 2022). Moreover, the importance of implementing environmental practices is emphasized, both by regulatory requirements and by the results evidenced in this study. These practices not only contribute to environmental sustainability but also enhance economic indicators. Therefore, companies should recognize that transitioning to a cleaner economy is not only ethically and legally necessary but also economically advantageous. However, they should not overlook the fact that, during times of crisis, measures targeted at employees yield positive outcomes. In contrast, managers should be aware the economic and financial impact of social actions may not fully reflect the efforts invested in them, as indicated by the results.

In addition, these findings bear significance for SMEs, underscoring the importance of understanding the extent to which they embrace ESG practices. The study reveals that engaging in these activities, as per current regulations, may lead to unfavorable outcomes for SMEs. The non-applicability of ESG outcomes from large corporations to SMEs highlights the necessity for tailored, simplified models catering to small businesses. Such models could mitigate excessive costs that may adversely affect performance. Consequently,

these models should streamline actions, focusing on those with lower costs that align with the size of the company.

Moreover, companies are encouraged to disclose their ESG activities, but they should carefully consider their efforts when setting up an ESG committee. For small companies, this can be very costly and with detrimental effect in the performance of the company. Consequently, this invites us to think about the need to establish simplified standards for SMEs, as suggested Santos et al. (2022).

Moreover, our research has significant implications for regulators and policymakers. This could involve tax benefits, subsidies, and mandatory disclosure requirements. Specifically, the positive impact on labor and social practices can guide the incentivization of ESG practices.

7 | CONCLUSIONS

The relationship between ESG and business performance has been extensively studied in recent years, revealing diverse perspectives on the relationship between these variables. Given the growing importance of sustainability in the contemporary business world, it is more important than ever to gain an in-depth understanding of this relationship and the implications of ESG implementation for companies. However, two key issues can be clearly identified in the existing literature. Firstly, the heterogeneity in ESG measurement, and, secondly, the scarcity of studies analyzing this relationship within small and medium-sized companies (Gallardo-Vázquez et al., 2013; Otero-González et al., 2021) despite their pivotal role in the economy (Le et al., 2021).

Responding to this need, this paper conducted an analysis of the influence of ESG activities on profitability and business risk within a sample of SMEs. To this end, an index was developed to assess the level of implementation of these activities in a sample of Spanish companies. The study analyses the impact of ESG activities, considering both their comprehensive influence and four individual dimensions (labor, social, environmental and governance), on business performance. Additionally, the role of these activities as tools for crisis management was explored. The study also delves into the repercussions of ESG disclosure and the presence of an ESG committee on company results.

The findings highlight the influence of the chosen methodology on the results, emphasizing the importance of considering the methodological approach in future analyses. In addition, it is important to distinguish the consequences of each of the ESG sub-dimensions. When analyzing the different dimensions and comparing them with the overall analysis, different effects are observed. Specifically, the labor and environmental dimensions show a positive effect when the entire study period is considered. Nevertheless, the overall effect is likely to be diffuse because it is offset by the different ESG dimensions or by the size variation between companies. Moreover, we can see how ESG is a tool that triggers a higher level of resilience in the context we are experiencing due to COVID-19. This is more noticeable in those companies that present a higher labor and social ESG

index. Furthermore, the results indicate that small companies face challenges in monetizing ESG efforts, potentially due to associated costs, economies of scale, or a lack of readiness to fully leverage these endeavors.

The outcomes of the study hold both theoretical and practical significance, advancing our understanding of the link between ESG performance and financial outcomes in SMEs. It contributes a standardized framework for exploring these connections, standing out as one of the most comprehensive investigations in the field. The research reveals a new utility for ESG activities as a tool for survival during crisis periods, in alignment with Magrizos et al. (2021). Additionally, the study introduces a universally applicable index for comprehensively measuring ESG, addressing the challenge of sustainability measurement. Furthermore, it responds to the imperative to examine the role of ESG disclosure in SMEs, as emphasized by Shalhoob and Hussainey (2023).

In practical terms, the results offer valuable guidance for companies in identifying activities that yield optimal benefits, emphasizing specific ESG sub-dimensions aligned with their goals, such as increased resilience or improved financial performance. This insight is particularly crucial for SMEs, encouraging mindful engagement in ESG due to its potential for both positive and negative outcomes. The study also encourages companies to disclose their ESG activities, urging caution in establishing ESG committees and prompting a thoughtful consideration of efforts. This consideration, in turn, underscores the need for simplified standards for SMEs, aligning with the proposal by Santos et al. (2022). The consequences of the study extend beyond companies, having significant relevance for regulators and policy-makers. These implications could involve considerations such as tax benefits, subsidies, and mandatory disclosure requirements, particularly focusing on the positive impact on labor and social practices to guide incentivization and regulation of ESG practices.

However, this study has certain limitations. Mainly, it should be mentioned that it is focused on a sample of Spanish companies, and thus, future researchers are encouraged to expand the sample size and conduct international studies to assess whether these effects hold in other geographical areas or if contextual variables should be considered. Furthermore, it is necessary to extend the sample to include a larger number of SMEs, which is precisely the predominant and most unknown type of company in this type of study. Finally, it should be noted that the assessment of the selected variables depends on the subjective judgments of the respondents, which may introduce cognitive biases, social desirability bias, among others. To increase the robustness of future research, it is advisable to explore various methods of information and data collection (independent verification or assurance methods to validate self-reported data, etc.), including the incorporation of case study approaches. This would contribute to a more complete understanding of the study results.

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APPENDIX A

A.1 | ESG index/sub-indices construction

The ESG Score (ESGglobal) has been calculated from the sum of 63 dummy variables (V_i), that is, $ESG_{global} = \sum_{i=1}^{63} V_i$, which can be included in the 4 sub-factors mentioned in the equation below, where each of them are briefly described in the next table.

$$ESG_{global} = EnvInd + SocInd + LabInd + GovInd$$

Environmental score
(EnvInd)

$$EnvInd = \sum_{i=1}^{13} V_i$$

The company establishes environmental objectives (V1), if the company establishes environmental objectives, it establishes corrective measures if they are not met (V2), it has indicators that allow it to measure the environmental impact of its activity (V3), it has received a sanction for non-compliance with environmental regulations in the last two years (V4), it develops actions or strategies to mitigate climate change (V5), it develops actions or strategies to adapt to climate change (V6), it develops actions or strategies on water and marine resources (V7), develops actions or strategies on the use of natural resources and circular economy (V8), develops actions or strategies on pollution (environmental, acoustic, etc.) (V9), develops actions or strategies on pollution (environmental, acoustic, etc.) protection of biodiversity and ecosystems (loss of biodiversity or impoverishment of ecosystems) (V10), develops actions or strategies on greenhouse gas reduction (V11), has environmental certification (V12), and considers environmental aspects in the business strategy (V13).

Social score (SocInd)

$$SocInd = \sum_{i=14}^{24} V_i$$

The company prioritizes its suppliers according to environmental, labor, social and good governance criteria (V14), collaborates with its suppliers to improve products/services (V15), develops responsible commercial and contractual communication practices (V16), informs its customers about the positive/negative impact of its products/services (V17), promotes CSR among its customers (V18), promotes responsible consumption among its customers (V19), identifies and evaluates the impacts of its activity in the territory in which it operates (V20), has an anti-corruption policy (V21), develops actions in favor of social development (V22), has a customer service department (V23) and uses information on stakeholders as a strategic management tool (V24).

Labor score (LabInd)

$$LabInd = \sum_{i=25}^{48} V_i$$

The company has an equality plan (V25), carries out actions to promote equality (V26), carries out actions to promote the inclusion of people with disabilities (V27), promotion based on previously defined criteria (V28), diversity policy in management/administration bodies (V29), diversity policy with company personnel (V30), promotes permanent contracts as the main option (V31), has a performance evaluation plan (V32), has mechanisms in place to improve employee satisfaction (V33), informs employees of objectives and strategies (V34), has a defined policy on key requirements for access to key positions (V35), has a continuous training policy for staff (V36), has measures to adapt schedules or leave for training (V37), offers online training (V38), has a salary policy in line with the principle of equality (V39), carries out recent studies on occupational risks and health (V40), has protocols to prevent harassment (V41), has training or awareness-raising measures on equality (V42), has a policy on the right to disconnection (V43), has flexible working hours (V44), working hours that coincide with school hours (V45), home office (V46), reduced working hours (V47), extended paternity/maternity leave (V48).

Corporate governance
score (GovInd)

$$GovInd = \sum_{i=49}^{63} V_i$$

There is adequate internal regulation of the functions of the administrative body (V49), the dedication of two directors is sufficient to perform the functions entrusted (V50), it is legally established (V51), The administrative body is of adequate size to respond effectively to the needs of the company (V52), The administrative body periodically evaluates the performance of the functions of its directors/managers/managers? (V53), the independence, integrity and objectivity of the management body are guaranteed (V54), there is adequate internal regulation of the duties of managers (V55), directors or officers are chosen on the basis of their technical qualification and professional experience (V56), ethical behavior rules are applied to two directors and two officers (V57), the company's administrators have sufficient information in due time and form to carry out their work (V58), or the administrative body has advisors or, where appropriate, independent advisors and consultants (V59), to reflect the financial and non-financial information to the true picture of the company (V60), the policies (management, financial, accounting, etc.) are subject to evaluations or reports prepared by independent professional advisors and consultants (V61), knowledge diversity criteria are applied for the appointment of two directors, board members and positions of responsibility (V62), gender diversity criteria are applied for the appointment of two directors, board members and positions of responsibility (V63).