

# Sustainable development goals disclosure and analyst forecast quality

Analyst  
forecast and  
SDGs

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Received 28 July 2023  
Revised 23 December 2023  
26 February 2024  
Accepted 3 April 2024

## Abstract

**Purpose** – This study aims to investigate the relationship between corporate sustainable development goals (SDGs) disclosure and analyst forecast quality.

**Design/methodology/approach** – The study focuses on a sample of 95 Italian-listed companies preparing the mandatory non-financial declaration (NFD) according to the Global Reporting Initiative (GRI) standards over a five-year period (2017–2021), corresponding to an unbalanced sample of 438 observations. Analyst forecast quality was proxied by earnings forecast accuracy (FA) and earnings forecast dispersion (FD), built on data retrieved from the Refinitiv database. A manual content analysis was performed on NFDs to derive an SDG disclosure score (SDGD) for each sampled company.

**Findings** – This study provides empirical evidence suggesting that voluntary SDG disclosure matters to the capital market in that it helps enhance the information environment of companies, evidenced by improved analyst forecast quality. In particular, this study highlighted that SDG disclosure positively influences analyst FA while negatively affecting analyst FD.

**Research limitations/implications** – This study focuses on the Italian context, which has idiosyncratic characteristics regarding the structure of the financial market, the composition of corporate ownership and experience in non-financial reporting practices.

**Practical implications** – This study indicates to corporate managers that following GRI standards may represent the right way to better integrate SDG disclosure in corporate non-financial reports and increase the relevance of such information for investors and other capital market participants.

**Originality/value** – To the best of the authors' knowledge, this is the first study that empirically examines the association between SDG disclosure and analyst forecast quality.

**Keywords** Sustainable development goals, SDGs, analyst forecast quality, analyst forecast dispersion, non-financial reporting

**Paper type** Research paper

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Journal of Applied Accounting  
Research  
Vol. 26 No. 6, 2025  
pp. 1-25  
Emerald Publishing Limited  
0967-5426  
DOI [10.1108/JAAR-07-2023-0223](https://doi.org/10.1108/JAAR-07-2023-0223)

## 1. Introduction

In recent years, more than a quarter of total assets under portfolio management (e.g. Blackrock, Vanguard and State Street) have been allocated to sustainable companies focusing on social responsibility (Ng and Rezaee, 2020; Diener, 2023). In their asset allocation plans, investors, pension funds and asset managers are increasingly recognising the relevance of sustainable investment to risk-adjusted returns, being acutely cognizant of the interdependence between sustainable development and commercial success (Hussainey and Salama, 2010; Deloitte, 2017; BlackRock, 2020; Ernst and Young, 2020). Accordingly, credible and transparent information on non-financial performance has become central in the investment decision-making process (Ng and Rezaee, 2020; Ernst and Young, 2020; Wang *et al.*, 2017). However, there is still a distance between investors' information needs and company non-financial disclosure quality and extent, especially for voluntary information such as those related to sustainable development goals (SDGs) (Deloitte, 2017; Christensen *et al.*, 2021; Adams and Abhayawansa, 2022).

The introduction of SDGs within the 2030 Agenda settled by the United Nations (UN) has represented a breakthrough moment for companies and capital markets as it has shed light on the strict connection between long-term value creation and corporate commitment to sustainable development (Deloitte, 2017; UNDP, 2021; Pizzi *et al.*, 2023; Nicolò *et al.*, 2024). So, while businesses have been called to take a leading role in addressing major sustainability challenges encapsulated in SDGs to create a better future for all, investors and other capital market actors looked at the benefits of focusing on SDGs and their impact on both return and risk (Deloitte, 2017; UNDP, 2021; Nicolò *et al.*, 2023, 2024). Recent surveys and reports have highlighted that investors are growingly embracing SDG disclosures to better inform their decision-making processes but still demand more accurate information to track companies' progress towards SDG achievement more effectively (GRI, 2018; PwC, 2019; Ernst and Young, 2020).

In this scenario of uncertainty, it is crucial to consider the role of financial analysts – so-called “sell-side analysts” – as powerful market actors that play a pivotal role in supporting investment decisions (García-Sánchez *et al.*, 2020; García-Sánchez *et al.*, 2021; Luo and Wu, 2022). They are experts who forecast firms' future performance and offer investment advice by evaluating the target stocks and information firms provide through different channels (Luo *et al.*, 2015; Luo and Wu, 2022). So, they can be considered market intermediaries who act to reduce information asymmetry between external investors and insiders (Luo and Wu, 2022). Prior research has evidenced that analysts consider and integrate Corporate Social Responsibility (CSR) and Environmental Social and Governance (ESG) ratings with traditional financial information to forecast firms' earnings and provide investment recommendations (e.g. Dhaliwal *et al.*, 2012; Luo and Wu, 2022; Shan *et al.*, 2023). However, much remains to learn about how financial analysts deal with voluntary SDG disclosure in their earnings forecasts.

Therefore, given these premises, this study contributes to SDG disclosure and analyst forecast literature streams, investigating the effects of voluntary SDG disclosure on analyst forecast quality. More specifically, this paper aims to identify if analysts' forecasts are more accurate and have a lower dispersion due to the SDG-added information value.

Considering that investors' expectations are unobservable, analysts' earnings forecasts are usually employed to represent market expectations of firm performance and evaluate investors' perceptions about the usefulness of certain information (Yu, 2010; Ioannou and Serafeim, 2015; Bernardi and Stark, 2018). Therefore, in this paper, we use analyst forecast accuracy (FA) and forecast dispersion (FD) as proxies of the usefulness of voluntary SDG information for investors and capital market actors at large.

To this end, the study investigates a sample of 95 Italian-listed non-financial companies preparing the mandatory non-financial declaration (NFD) according to the global reporting initiative (GRI) standards over a five-year period (2017–2021), corresponding to an unbalanced sample of 438 observations. Analyst forecast quality was proxied by earnings FA (Capstaff *et al.*, 1998; Ho and Tsay, 2004; Orens and Lybaert, 2007) and earnings FD (Shan *et al.*, 2023),

built on data retrieved from the Refinitiv Eikon database. A content analysis based on the GRI linkage document “Linking the SDGs and the GRI Standards” (GRI, 2020) was performed on NFDs to derive an SDG disclosure score (SDGD) for each sampled company.

Findings highlight that disclosing SDG information is incrementally useful for sell-side analysts. Specifically, high levels of SDG disclosure enhance analyst earnings FA while reducing FD.

This study provides manifold contributions to both SDG disclosure and analyst forecast literature streams. First, prior literature on SDG disclosure examined the extent or quality of voluntary SDG disclosure, mainly assuming a stakeholder-oriented perspective (e.g. Van der Waal and Thijssens, 2020; Diaz-Sarachaga, 2021; Erin and Bamigboye, 2021; Erin *et al.*, 2022). Other explored SDG disclosure’s antecedents linked to governance mechanisms (e.g. Pizzi *et al.*, 2021a; Zampone *et al.*, 2022; Arena *et al.*, 2023), firm-level factors (e.g. Pizzi *et al.*, 2021a; Arena *et al.*, 2023), institutional pressures (e.g. Galeazzo *et al.*, 2023) and country-level drivers (e.g. Bose and Khan, 2022). In contrast, this study is innovative as it focuses on the consequences of SDG disclosure from investors’ perspective. Specifically, to the best of the authors’ knowledge, this is the first study that empirically analyses the usefulness of voluntary SDG disclosure for financial analysts whose forecasts are a primary information source for investment decisions.

Second, the literature on analyst forecasts has examined how analysts react to the provision of financial disclosure (e.g. Lang and Lundholm, 1996; Hope, 2003). As well, scholars have examined the relationship between the issuance of stand-alone non-financial reports (e.g. CSR and Integrated Reporting [IR]) (e.g. Dhaliwal *et al.*, 2012; Garrido-Miralles *et al.*, 2016; Bernardi and Stark, 2018; Zhou *et al.*, 2017) or ESG ratings (e.g. Luo and Wu, 2022; Schiemann and Tietmeyer, 2022) and analyst FA. Hence, this study is original as it expands prior literature, providing hitherto undocumented evidence specifically referring to voluntary SDG disclosure and its association with analyst FA and FD.

The remainder of this article is structured as follows. The following section is devoted to a literature review. The third section outlines the theory and hypothesis. The fourth section describes the sampling process and research methodology. The fifth section presents the main results, followed by their discussion in the sixth section. The last section draws conclusions, implications and directions for further research.

## 2. Literature review

In 2015, member countries of the UN adopted the 2030 Agenda containing 17 SDGs and 169 associated targets, a global governance plan in response to major social and environmental issues, like combating climate change, protecting oceans and forests, making cities more sustainable and ending poverty and hunger (UN, 2015; van der Waal and Thijssens, 2020). While the 2030 Agenda called for collective action to preserve the planet for present and future generations, it encouraged private sector organisations to assume a leading role in addressing SDG challenges, recognising their role as key levers of job creation and inclusive economic growth and crucial sources of innovation, technology and finance (Deloitte, 2017; OXFAM *et al.*, 2018; van der Waal and Thijssens, 2020). This generated unprecedented pressures on companies to undertake an urgent metamorphosis based on integrating SDGs at the core of the strategies, business models and operations (PwC, 2019; Silva, 2021; Zampone *et al.*, 2022).

For this reason, embracing broader corporate reporting practices that enable investors and other stakeholders to track companies’ progress towards SDGs achievement has become pivotal to enduring commercial success and preserving legitimacy (Deloitte, 2017; Garcia-Sanchez *et al.*, 2020). SDGs, in particular, have stimulated investors to raise their game when it comes to evaluating company performance using non-financial disclosure, as they have

begun to see a clear link between sustainable development and corporate success (Deloitte, 2017; Ernst and Young, 2020; Nicolò *et al.*, 2023, 2024). Particularly, they have become increasingly aware of the growth opportunities and benefits associated with responsible and inclusive practices concerning SDGs (PwC, 2019).

Schramade (2017) asserts that companies should invest in the SDGs for at least two reasons: rewards to society and returns to shareholders. So, it would be beneficial to invest in those SDGs that will raise the value of the company's stock to its shareholders to maximise the synergies between social and economic goals (Schramade, 2017; Jamali *et al.*, 2022). From this perspective, the SDGs are more than just a blueprint for making the world a better place for all. They are also a lever to unlock sizeable market opportunities (PwC, 2019; Jamali *et al.*, 2022). Thus, investors and other market participants have started to pay special attention to businesses that contribute to and provide solutions for the SDGs since they are more likely to be well-positioned for changes in the competitive and regulatory contexts in the future and experience less expensive disruption (Schramade, 2017; GRI and UNGC, 2018). Even while they do not provide a precise framework for assessing how they influence specific investments, the SDGs offer investors a uniform lens through which to examine ESG impact – both positive and negative – and evaluate companies' contribution towards sustainable development (Schramade, 2017; GRI and UNGC, 2018; PwC, 2019).

SDG disclosure needs to be significant, material and of high quality to be value-relevant for investors and analysts (Garcia-Sanchez *et al.*, 2020; Jamali *et al.*, 2022; Galeazzo *et al.*, 2023), as disclosure represents the “critical link between the big-picture ambitions and the data that shows what action has been taken to achieve those ambitions and what progress is being made” (KPMG, GRI, UNEP, 2016, p. 2). Accordingly, the 2030 Agenda in the specific target 12.6 explicitly encouraged companies to “integrate sustainability information into their reporting cycle” (UN, 2015, p. 22). Also, a conjunct project by the GRI, UN Global Compact (UNGC) and World Business Council For Sustainable Development (WBCSD) gave rise to a guide for supporting companies in aligning their strategies and measuring and managing their contribution to the SDGs as well as in incorporating meaningful and credible SDG disclosures in sustainability reports (GRI, 2015; GRI and UNGC, 2018).

Nevertheless, empirical studies evidenced that companies are still slow to realise the potential of SDG disclosure as they encounter difficulties in integrating SDG concerns with the fundamental business goal of increasing shareholder wealth (Van der Waal and Thijssens, 2020; Diaz-Sarachaga, 2021; Erin and Bamigboye, 2021; Erin *et al.*, 2022). The lack of regulatory enforcement and management commitment, as well as the macroeconomic characters of some SDGs, like 1 and 2 – for which it is difficult to find “win-win opportunities” – represent significant barriers curbing firms from providing SDG disclosure (Van der Waal and Thijssens, 2020; Diaz-Sarachaga, 2021; Erin and Bamigboye, 2021; Erin *et al.*, 2022). Many firms adopted a symbolic approach towards SDG disclosure driven by impression management and reputation rationales aimed at manipulating stakeholders' perceptions (Heras-Saizarbitoria *et al.*, 2022; Silva, 2021; Manes-Rossi and Nicolò, 2022). In particular, companies failed to disclose information on specific indicators related to SDGs (Heras-Saizarbitoria *et al.*, 2022; Lodhia *et al.*, 2023; Manes-Rossi and Nicolò, 2022), “cherry-picking” only the SDGs with which they feel comfortable (OXFAM *et al.*, 2018; Heras-Saizarbitoria *et al.*, 2022). Overall, boilerplate and superficial SDG disclosures prevail, driven by the strategic intent of conveying an image of an SDG-committed firm even in the absence of actual changes to internal processes and strategies (Van der Waal and Thijssens, 2020; Garcia-Meca and Martinez-Ferrero, 2021; Heras-Saizarbitoria *et al.*, 2022; Silva, 2021; Nicolò *et al.*, 2023). Therefore, the lack of SDG disclosure or its scarce quality and significance may impair investors' decision-making processes, preventing them from investing resources in sustainable companies, as well as may generate distrust and tensions among other stakeholders, posing severe threats to companies' reputation and

continued viability (van der Waal and Thijssens, 2020; Silva, 2021; Nicolò *et al.*, 2023). As a result, the market opportunities potentially stemming from SDGs might be seriously compromised.

Nevertheless, while the debate on SDG reporting is burgeoning, prior research mainly focused on investigating the extent and quality of SDG disclosure. Other scholars provided further insights concerning the factors influencing SDG disclosure, like governance mechanisms (e.g. Pizzi *et al.*, 2021a; Zampone *et al.*, 2022; Arena *et al.*, 2023), firm-level factors (e.g. Pizzi *et al.*, 2021a; Arena *et al.*, 2023), institutional pressures (e.g. Galeazzo *et al.*, 2023) and country-level drivers (e.g. Bose and Khan, 2022) or the association between SDG disclosure and ESG performance (e.g. Nicolò *et al.*, 2024). However, little is known about whether and how SDG disclosure provided by firms is relevant for capital market participants, as investigating corporate SDG disclosure behaviours and their determinants does not allow for evaluating how they react to SDG disclosure.

Therefore, this paper intends to fill this critical research gap, investigating how financial analysts – fundamental capital markets’ actors — react to voluntary SDG disclosure provisions and, thus, if voluntary SDG disclosure currently provided by companies is able to increase the quality of their earnings forecast.

### 3. Theory and hypothesis development

Financial (sell-side) analysts are fundamental and influential users of corporate reports and a major group of information intermediaries (Yu, 2010; Ioannou and Serafeim, 2015). Accounting and financial market literature assert that financial analysts play a primary role in capital markets as information catalysts and external monitors (Garrido-Miralles *et al.*, 2016; García-Sánchez *et al.*, 2021). They are well-educated experts in investment and information analysis, usually acting on behalf of asset managers, brokerage houses and investors at large to monitor and assess the performance of firms over time (Healy and Palepu, 2001; Ioannou and Serafeim, 2015; Luo and Wu, 2022). More specifically, they scrutinise and process both public and private corporate information to forecast firms’ future performance (i.e. expected earnings) and offer investment recommendations in terms of buying, selling or holding companies’ shares (Healy and Palepu, 2001; Luo *et al.*, 2015; Garrido-Miralles *et al.*, 2016). So, they can be considered as “surrogate investors” (Zuckerman, 1999, p. 1408), as their forecasts and recommendations constitute a crucial information source for investors, affecting their resource allocation process and, in turn, stock prices (Ioannou and Serafeim, 2015; Luo *et al.*, 2015; García-Sánchez *et al.*, 2019).

According to the voluntary disclosure theory, the ability of analysts to perform effective and relevant forecasts strictly depends on the quality and significance of the information they gather from companies (Lang and Lundholm, 1996; Beyer *et al.*, 2010; Zhou *et al.*, 2017). *Ex ante* firms’ insiders like managers have an informational advantage regarding the company’s performance compared to outsiders like investors and analysts, which makes it difficult for the latter to make inferences about the profitability of firm investment opportunities (Healy and Palepu, 2001; Beyer *et al.*, 2010). This tends to generate dysfunctions in the market, such as illiquidity, mispricing and high cost of capital, as analysts and, in turn, investors, do not have the information necessary to make forecasts (Vanstraelen *et al.*, 2003; Beyer *et al.*, 2010). Such drawbacks are exacerbated when managers strategically withhold information when they deem it costly or potentially harmful to their competitive advantage (Verrecchia, 1983; Beyer *et al.*, 2010; García-Sánchez *et al.*, 2020). Therefore, according to the voluntary disclosure theory, more and better disclosure is crucial to enhance the company’s information environment and facilitate analysts’ understanding of its prospects (Beyer *et al.*, 2010; Zhou *et al.*, 2017). More specifically, as the extent and quality of the information obtained from the company increase, the analysts’ ability to process and interpret disclosures in a similar and



informed manner and assess the company's actual and future performance increases (Lang and Lundholm, 1996; Hope, 2003; Schiemann and Tietmeyer, 2022). Accordingly, corporate disclosure is likely to be conducive to higher analysts' earnings FA (difference between actual and forecasted earnings) and lower FD (variability in earnings' forecasting among analysts), reducing, in turn, investors' uncertainty and boosting their confidence towards companies (Lang and Lundholm, 1996; Orens and Lybaert, 2007; Yu, 2010; Zhou *et al.*, 2017; Garcia-Sanchez *et al.*, 2020). Hence, more or better disclosure may help analysts in performing their crucial role of market intermediaries and bridging the information asymmetry between corporate insiders and outsiders, creating beneficial effects on capital markets (Adhikari, 2016; García-Sánchez *et al.*, 2021; Luo and Wu, 2022; Schiemann and Tietmeyer, 2022).

Early empirical evidence documented that higher levels of financial disclosure are associated with greater analyst forecast quality. In particular, Lang and Lundholm (1996) observed that more financial disclosure led to more accurate analyst earnings forecasts and reduced dispersion. Similarly, Hope (2003) evidenced that firm-level financial disclosures are positively related to FA and negatively related to analyst FD, pinpointing that such disclosures provide helpful information to analysts and, in turn, for investors. However, in the last decades, a gradual awareness of the relevance of ESG issues in driving corporate performance and financial viability emerged in all segments of capital markets, giving rise to a shift in the underlying logic of firms' evaluation and asset allocation process that motivated growing pressures on companies to receive non-financial information (Garcia-Sanchez *et al.*, 2020; Muslu *et al.*, 2019; Billio *et al.*, 2021). Socially responsible investment (SRI) experienced a massive surge in interest, and sustainability indices emerged at stock exchanges as well as ESG rating agencies (Hussainey and Salama, 2010; BlackRock, 2020; Billio *et al.*, 2021). The introduction of the 2030 Agenda has represented a cornerstone in this evolving scenario as it has put companies *vis-à-vis* with the urgency to integrate SDGs in their strategies, business models and reporting cycles, sparking much attention among investors interested in understanding how companies transform their competitive advantage concerning the SDGs into business results and on how relevant the SDGs are to companies' long-term success (Schramade, 2017; GRI and UNGC, 2018; Nicolò *et al.*, 2023).

Following these circumstances, scholars provided anecdotal evidence that analysts increasingly use non-financial information to forecast companies' future earnings. More specifically, Orens and Lybaert (2007) highlighted that Belgian financial analysts using more forward-looking and internal-structure information provide more accurate forecasts of companies. Scholars (Dhaliwal *et al.*, 2012; Garrido-Miralles *et al.*, 2016) also observed that the voluntary issuance of stand-alone CSR is conducive to higher FA, especially in stakeholder-oriented countries (Dhaliwal *et al.*, 2012), although it does not influence analyst earnings FD (Garrido-Miralles *et al.*, 2016). Another strand of studies (Zhou *et al.*, 2017; Bernardi and Stark, 2018) provided empirical evidence supporting the relevance of IR for capital market participants in South Africa. In particular, Zhou *et al.* (2017) observed that higher-quality IR increased analyst earnings FA while reducing their dispersion. Bernardi and Stark (2018) highlighted that the mandatory adoption of IR among South African listed firms improved the relationship between ESG disclosure and analyst FA. Also, Muslu *et al.* (2019) noted that higher-quality voluntary CSR disclosure enables analysts to enhance the accuracy of their forecasts as well as Luo and Wu (2022) observed that ESG ratings increase analysts' FA in the context of Chinese listed firms. Furthermore, Shan *et al.* (2023) found that firms with superior CSR performance experience higher forecast quality through the mediation effect of corporate governance, while Schiemann and Tietmeyer (2022) evidenced that ESG disclosure mitigates uncertainty caused by ESG controversies, enhancing analyst FA. Last, Pizzi *et al.* (2024) noted that disclosing sustainability information by integrating the Sustainability Accounting Standards Board (SASB) and GRI standards does not increase analyst FA.

Nonetheless, despite a burgeoning literature shedding light on the usefulness of non-financial information for analyst forecasting, empirical evidence on the interplay between SDG disclosure and analyst forecast quality is still scant. Some surveys (PwC, 2019; Ernst and Young, 2020) have highlighted an increasing capital market participants' appetite for SDG information. Most of the investors surveyed by Ernst and Young (2020) declared that they use SDG information to understand how companies' commitment to SDGs is likely to drive long-term value creation. Additionally, according to a survey conducted by PricewaterhouseCoopers (PwC), 67% of private equity firms identify and prioritise SDGs that are pertinent to their investments, and 43% take proactive measures to monitor and report portfolio business performance about the SDGs (PwC, 2019). However, in both cases, investors remain concerned about the credibility and quality of information. Last, Garcia-Sanchez *et al.*'s (2020) study evidenced a relationship between analyst sell recommendations and the adoption of SDG Compass.

Therefore, based on the predictions of the voluntary disclosure theory and evidence from prior research, this study assumes that SDG disclosure will improve companies' information environment by improving analysts' understanding of companies' prospects. Hence, we expect that more transparency on SDGs will positively impact analyst forecast quality, specifically increasing their accuracy and reducing the dispersion of their forecasts.

Thus, the following hypotheses are posited:

*H1a.* There is a positive relationship between corporate SDG disclosure and analyst FA.

*H1b.* There is a negative relationship between corporate SDG disclosure and analyst FD.

## 4. Research methodology

### 4.1 Sampling process

The present study focuses on Italian-listed firms. According to Hung and Subramanyam (2007, p. 674), examining accounting practices in a single country helps avoid potential biases and shortcomings that are likely to arise from comparing countries with different institutional environments. Accordingly, Italy represents a unique research context as it is a European Continental civil law country characterised by a unique regulatory framework in which national Generally Accepted Accounting Principles (GAAP) coexist with International Accounting Standards (IAS)/International Financial Reporting Standards (IFRS) in a frame of relatively weaker investor protection (Allegrini and Greco, 2013; Nobes and Parker, 2012; Harjoto and Rossi, 2019). Italian companies – particularly those listed – are also characterised by high ownership concentration with the presence of large controlling shareholders (Allegrini and Greco, 2013). From an institutional standpoint, Italy is a stakeholder-oriented country where – since 2004 – the government has launched different centralised and decentralised programs to encourage corporate culture and understanding of social, environmental and sustainability concerns (La Porta *et al.*, 1998; Ferri, 2017; Harjoto and Rossi, 2019). The Italian context is specifically interesting because of the adoption of a mixed “carrot” and “stick” approach (CSR Europe and GRI, 2017; Mio *et al.*, 2021; Nicolò *et al.*, 2022) in transposing Directive 95/2014/EU (Non-Financial Reporting Directive – NFRD) through the Italian Legislative Decree no. 254/2016. In particular, while leaving discretion to companies in selecting the most suitable reporting framework and disclosure format (stand-alone non-financial report (NFR) or management commentary within financial statements), also ensuring the possibility to apply the “safe harbour” principle (i.e. the opportunity, in exceptional cases, to omit information that would be seriously prejudicial to the commercial position of the undertaking), it imposes penalties for non-compliance or failure to submit within the timeframe (CSR Europe and GRI, 2017). Also, Italy is among the few countries

requiring independent assurance for the NFD (CSR Europe and GRI, 2017; La Torre *et al.*, 2018). It is worth noticing that, as for the NFRD, SDGs are out of the scope of the Italian Legislative Decree no. 254/2016; so, their disclosure remains voluntary (Pizzi *et al.*, 2021b). However, scholars (Carungu *et al.*, 2021; Pizzi *et al.*, 2021a,b; Posadas *et al.*, 2023) argue that many large firms in Italy have consolidated experience in voluntary disclosure practices. Therefore, introducing the regulation did not have uniform effects on all Italian companies due to heterogeneous non-financial backgrounds (Carungu *et al.*, 2021; Pizzi *et al.*, 2021a,b; Posadas *et al.*, 2023).

Based on these premises, this study focuses on Italian firms listed on the Milan Stock Exchange that were mandated to produce a NFD between 2017 and 2021 under Legislative Decree 254/2016, transposing the NFRD. This specific period was chosen for three reasons: (1) Italian Legislative Decree no. 254/2016 obliged Italian Public Interest Entities (PIEs) with more than 500 employees to produce an NFD starting from the fiscal year 2017 (Pizzi *et al.*, 2023; 2021a, b; Venturelli *et al.*, 2022); and (2) 2016 represents the first year the SDGs were adopted (UN, 2015; Manes-Rossi and Nicolò, 2022). So, it was considered that businesses need more time to familiarise themselves with SDGs and incorporate them into their reporting procedures. Accordingly, 2016 was excluded; (3) 2021 represents the latest fiscal year for which data on SDG disclosure levels could be gathered.

The initial population consisted of 180 Italian-listed firms that issued an NFD during the 2017–2021 period, yielding a total of 747 observations. Consistent with prior studies (Diaz-Sarachaga, 2021; Pizzi *et al.*, 2021a, b), only companies preparing their NFD according to the GRI Standards were selected to enhance the comparability of data. This choice’s rationale also stems from the evidence that GRI Standards are the most widely used sustainability reporting standards companies use to disclose non-financial information (Adams and Abhayawansa, 2022; KPMG, 2022), especially in Italy (Deloitte, 2022). Additionally, in partnership with UNGC and WBCSD, the GRI has developed a specific guide to help companies measure and report their contributions to the SDGs, also providing a specific tool map that links each SDG and related targets to relevant GRI Standards and disclosures (GRI, 2015; GRI and UNGC, 2018; GRI, 2022). Accordingly, 44 observations corresponding to firms that did not adopt GRI Standards (or adhered to the former GRI G4) were removed, leading to 703 observations.

Last, the sample was further filtered by eliminating financial companies (124 observations) due to their different regulatory environment, ownership characteristics and accounting reporting rules (Orens and Lybaert, 2007; Luo and Wu, 2022) and companies with missing data on the Refinitiv database (141 observations), which was used to gather financial data necessary to measure analyst FA and FD. Table 1 resumes the sampling process.

After this skimming process, the final sample consists of 95 Italian-listed companies operating in 11 different industry sectors (according to the Italian Stock Exchange “Borsa Italiana” classification), corresponding to an unbalanced sample of 438 observations (see Table 2).

**Table 1.**  
Sample selection step-  
by-step procedure

	Firms	Observations
<i>Sample selection criteria</i>		
Initial population	180	747
(–) Firms that do not disclose SDG information utilizing the GRI Standards		(44)
(–) Financial firms		(124)
(–) Firms with missing data		(141)
Total	95	438
<b>Source(s):</b> Authors’ elaboration		



**Table 2.**Breakdown of sample  
by industry and year

	Freq	Percent
<i>Panel A (Industry)</i>		
Basic materials	12	2.74
Consumer discretionary	120	27.40
Consumer goods	11	2.51
Consumer services	6	1.37
Consumer staples	12	2.74
Energy	19	4.34
Health care	30	6.85
Industrials	153	34.93
Technology	25	5.71
Telecommunications	11	2.51
Utilities	39	8.90
<i>Total</i>	<i>438</i>	<i>100.00</i>
<i>Panel B (Year)</i>		
2017	66	15.07
2018	95	21.69
2019	91	20.78
2020	94	21.46
2021	92	21.00
<i>Total</i>	<i>438</i>	<i>100.00</i>

**Source(s):** Authors' elaboration

#### 4.2 Dependent variables

The dependent variable is represented by the analyst forecast quality, proxied by two variables based on the Refinitiv database: analyst *FA* and analyst *FD*. High analyst forecast quality is associated with high *FA* and less *FD*.

*FA* represents the ability of analysts to predict firms' future earnings based on information gathered from companies (Lang and Lundholm, 1996; Orens and Lybaert, 2007; Yu, 2010). The more informative the disclosure, the higher the accuracy of analyst forecasts (Lang and Lundholm, 1996; Orens and Lybaert, 2007; Yu, 2010). Consistent with prior research (Capstaff *et al.*, 1998; Ho and Tsay, 2004; Orens and Lybaert, 2007), *FA* was proxied by the absolute percentage of earnings per share (EPS) *FA*, i.e. the absolute value of the difference between the actual EPS and the forecasted EPS, divided by the actual EPS.

*FD* constitutes the divergence of analysts' expectations about firms' future earnings, reflected in their forecasts (Lang and Lundholm, 1996; Zhou *et al.*, 2017; Shan *et al.*, 2023). It expresses the variability in EPS analysts' forecast estimates relative to the stock market price at the end of the year. Thus, high analyst forecast quality corresponds to a low level of *FD* (Zhou *et al.*, 2017; Shan *et al.*, 2023). Consistent with prior research (Lee and Liu, 2011; Shan *et al.*, 2023), *FD* was calculated as the standard deviation of analysts' EPS mean forecasts scaled by the absolute value of the mean EPS at the fiscal year-end.

The calculation formulas of the dependent variables are reported in Equation (1).

$$\begin{aligned}
 FA &= \frac{|Actual(EPS) - Mean(EPS)|}{|Actual(EPS)|} \\
 FD &= \frac{Standard\ deviation\ of\ Mean(EPS)}{|Mean(EPS)|}
 \end{aligned}
 \tag{1}$$

4.3 Independent variable

The independent variable is represented by the SDG disclosure score (*SDGD*), which measures the level of SDG disclosure conveyed by the sampled firms within their NFD.

Consistent with scholars (Tsalis *et al.*, 2020; Diaz-Sarachaga, 2021; Pizzi *et al.*, 2021a, b) to assess the level of SDG disclosure and build the *SDGD*, a manual content analysis was performed on the NFD of sampled companies. It is one of the most widespread research methods used in accounting research to examine publicly available information in a reliable, cheaper and faster way (Guthrie *et al.*, 2004; Michelin and Parbonetti, 2012). The content analysis was performed using the tool map included in the document “Linking the SDGs and the GRI Standards” [1] (GRI, 2020). It establishes the correspondence between each SDG and related targets with indicators and disclosures prescribed by the GRI Standards (GRI, 2016). Accordingly, the manual content analysis was conducted on the GRI Content Index contained within each NFD published by sample firms to mitigate subjectivity bias and enhance the reliability of the results (Tsalis *et al.*, 2020; Pizzi *et al.*, 2021a, b). This is a key section within a GRI-based NFD that reports all the GRI indicators included in the report and provides cross-references to where this information can be found in the document. Hence, the GRI Content Index was carefully analysed to ascertain the number of related GRI Standards and disclosures reported by the company for each SDG and related target. In cases where multiple disclosures existed concerning the same SDG, these were treated as a single occurrence [2].

As a result, a disclosure index was developed for each of the 17 SDGs as a ratio between the number of indicators (disclosures) reported by the firm and the number of indicators and disclosures required by the GRI linkage document (GRI, 2020). Finally, we derived an aggregate disclosure index (*SDGD*) expressing each firm’s overall level of SDG disclosure. This index is calculated as the mean of the scores obtained for each SDG and the total number of SDGs (17), as shown in Equation (2).

$$SDGD = \frac{\sum_{i=1}^{17} \text{GRI indicators reported}}{\text{GRI indicators required}} \cdot \frac{1}{17} \tag{2}$$

where:

GRI indicators reported  $i$  = Number of GRI indicators reported by the firm concerning SDG  $[i]$ ;

GRI indicators required  $i$  = Number of GRI indicators required by the GRI linkage document.

4.4 Control variables

This study incorporated some control variables from prior literature on analyst forecast quality to enhance the reliability of the analysis and reduce potential omitted variable biases.

More specifically, we control several firm-characteristics, including firm size (*SIZE*), measured as the natural logarithm of total assets (Dhaliwal *et al.*, 2012; Zhou *et al.*, 2017; Luo and Wu, 2022); firm market-to-book ratio (*MTB*), measured by the market capitalization scaled by the book value of equity for the fiscal year-end (Bernardi and Stark, 2018; Luo and Wu, 2022); firm profitability (*ROA*), proxied by the Return on Assets (*ROA*) (Bernardi and Stark, 2018; Luo and Wu, 2022; Nicolò *et al.*, 2022); firm profitability volatility (*PV*), calculated as the standard deviation of the *ROA* in the previous five years (Shan *et al.*, 2023); firm negative earnings (*NE*), a dummy variable that equals 1 if the firm reports negative earnings in the year and 0 otherwise (Dhaliwal *et al.*, 2012; Schiemann and Tietmeyer, 2022); firm leverage (*LEV*), proxied by the ratio between total liabilities and total assets (Bernardi and Stark, 2018); Ownership concentration (*OWN*), gauged by the proportion of the number of

shares owned by largest shareholders (Lin *et al.*, 2015); and firm age (*AGE*), calculated as the natural logarithm of the number of years since the firm's foundation (Wang *et al.*, 2017). We also control some firm governance characteristics linked to the board of directors that can influence analyst forecast quality, including board size (*BS*), proxied by the natural logarithm of the total number of board directors (Michelon and Parbonetti, 2012; Luo and Wu, 2022); CEO Duality (*BCEOD*), measured by a binary variable that equals 1 if the CEO is also the Chairman of the board and 0 otherwise (Michelon and Parbonetti, 2012; Luo and Wu, 2022); Board independence (*BI*), proxied by the proportion of independent directors on the board (Michelon and Parbonetti, 2012; Nicolò *et al.*, 2022; Pizzi *et al.*, 2023); and Board meetings (*BM*), measured as the natural logarithm of the number of meetings held annually by the board (Michelon and Parbonetti, 2012; Garcia-Sanchez *et al.*, 2020; Luo and Wu, 2022).

Control variables *SIZE*, *MTB*, *ROA*, *PV*, *NE* and *LEV* were gathered from the Refinitiv Database. Governance control variables (*OWN*, *BS*, *BCEOD*, *BI* and *BM*) were directly obtained from firms' Corporate Governance reports. Last, *AGE* was derived from firms' websites.

#### 4.5 Model specification

To test the study's hypothesis, following previous studies (e.g. Hope, 2003; Vanstraelen *et al.*, 2003; Yu, 2010; Dhaliwal *et al.*, 2012; Ioannou and Serafeim, 2015; Zhou *et al.*, 2017), two dependency models based on OLS pooled regressions have been estimated, as shown in the following equations.

$$\begin{aligned}
 FA = & \beta_0 + \beta_1 SDGD_t + \beta_2 SIZE_{t-1} + \beta_3 MTB_{t-1} + \beta_4 ROA_{t-1} + \beta_5 PV_{t-1} + \beta_6 NE_{t-1} \\
 & + \beta_7 LEV_{t-1} + \beta_8 OWN_{t-1} + \beta_9 AGE_{t-1} + \beta_{10} BS_t + \beta_{11} BCEOD_{t-1} + \beta_{12} BI_{t-1} \\
 & + \beta_{13} BM_{t-1} + \beta_{14} Year_t + \beta_{15} Industry + \varepsilon
 \end{aligned}
 \tag{Model 1}$$

$$\begin{aligned}
 FD = & \beta_0 + \beta_1 SDGD_t + \beta_2 SIZE_{t-1} + \beta_3 MTB_{t-1} + \beta_4 ROA_{t-1} + \beta_5 PV_{t-1} + \beta_6 NE_{t-1} \\
 & + \beta_7 LEV_{t-1} + \beta_8 OWN_{t-1} + \beta_9 AGE_{t-1} + \beta_{10} BS_t + \beta_{11} BCEOD_{t-1} + \beta_{12} BI_{t-1} \\
 & + \beta_{13} BM_{t-1} + \beta_{14} Year_t + \beta_{15} Industry + \varepsilon
 \end{aligned}
 \tag{Model 2}$$

A model selection test has been performed to determine the most suitable model between OLS pooled regression and random effects. The appropriateness of the model was assessed using the Breusch–Pagan Lagrange multiplier test, a widely recognised statistical instrument. The null hypothesis tested the appropriateness of the pooled regression model, while the alternative hypothesis examined the suitability of the random effects model. The test results revealed a significant chi-squared probability value below the 5% significance level, leading to rejection of the alternative hypothesis. Consequently, the OLS pooled regression model was deemed more appropriate for this study's analysis.

A lag on the control variables was applied to mitigate reverse causality concerns. Finally, we include a year-fixed effect (*YEAR\_FE*) to attenuate the impact of macroeconomic fluctuations while also accounting for industry effects (*INDUSTRY\_FE*) to address industry-specific unobservable factors that may influence analysts' *FA* and *FD*. To manage potential outliers, all continuous variables have been winsorised at the 1st and 99th percentiles (Dhaliwal *et al.*, 2012; Zhou *et al.*, 2017; Luo and Wu, 2022).

Table 3 resumes the description of all variables.

Acronym	Variable	Measurement	Source	References
FA	Forecast accuracy	Absolute value of the difference between the actual EPS and the forecasted EPS divided by the actual EPS	Refinitiv	<a href="#">Capstaff et al. (1998)</a> , <a href="#">Ho and Tsay (2004)</a> , <a href="#">Orens and Lybaert (2007)</a> <a href="#">Lee and Liu (2011)</a> , <a href="#">Shan et al. (2023)</a>
FD	Forecast dispersion	Standard deviation of analysts' EPS mean forecasts scaled by the absolute value of the mean EPS	Refinitiv	
SDGD	SDG disclosure	Disclosure Index based on the degree of adherence to the GRI indicators required by the document "Linking the SDGs and the GRI Standards"	NFD	
SIZE	Size of firm	The natural logarithm of the total assets	Refinitiv	<a href="#">Dhaliwal et al. (2012)</a> , <a href="#">Zhou et al. (2017)</a> , <a href="#">Luo and Wu (2022)</a> <a href="#">Bernardi and Stark (2018)</a> , <a href="#">Luo and Wu (2022)</a> <a href="#">Bernardi and Stark (2018)</a> , <a href="#">Luo and Wu (2022)</a> , <a href="#">Nicolò et al. (2022)</a> <a href="#">Shan et al. (2023)</a>
MTB	Market-to-book ratio	Market capitalization scaled by the book value of equity for the fiscal year-end	Refinitiv	
ROA	Profitability	The ratio between net income and total assets	Refinitiv	
PV	Profitability volatility	Standard deviation of the ratio between net income and total assets (ROA) in the past five years	Refinitiv	<a href="#">Dhaliwal et al. (2012)</a> , <a href="#">Schiemann and Tietmeyer, 2022</a> <a href="#">Bernardi and Stark (2018)</a> <a href="#">Lin et al. (2015)</a>
NE	Negative earnings	A binary variable that equals 1 if a firm reports negative earnings in the year and 0 otherwise	Refinitiv	
LEV	Level of indebtedness	The ratio between total liabilities and total assets	Refinitiv	
OWN	Ownership concentration	The proportion of the number of shares owned by the largest shareholders	Corporate Governance Report	<a href="#">Wang et al. (2017)</a> <a href="#">Michelon and Parbonetti (2012)</a> , <a href="#">Garcia-Sanchez et al. (2020)</a> , <a href="#">Luo and Wu (2022)</a> <a href="#">Michelon and Parbonetti (2012)</a> , <a href="#">Luo and Wu (2022)</a> <a href="#">Michelon and Parbonetti (2012)</a> , <a href="#">Nicolò et al. (2022)</a> , <a href="#">Pizzi et al. (2023)</a> <a href="#">Michelon and Parbonetti (2012)</a> , <a href="#">Garcia-Sanchez et al. (2020)</a> , <a href="#">Luo and Wu (2022)</a>
AGE	Age of firm	Natural logarithm of the number of years since the firm's foundation	Company website	
BS	Board size	Natural logarithm of the total number of board directors	Corporate Governance Report	
BCEOD	Board CEO duality	Binary variable that equals 1 if the CEO is also the Chairman of the board and 0 otherwise	Corporate Governance Report	
BI	Board independence	The proportion of independent directors on the board	Corporate Governance Report	
BM	Board meetings	The natural logarithm of the number of meetings held annually by the board	Corporate Governance Report	

**Table 3.**  
Description of  
variables

**Source(s):** Authors' elaboration

## 5. Results

### 5.1 Descriptive results

**Table 4** presents the descriptive statistics for dependent, independent and control variables.

The mean of *FA* is 1.26, with a minimum value of 0 and a maximum of 16.456. *FD* values range from 0 to 0.707, with an average value of 0.106. Regarding the *SDGD*, on average, each company reports about 38% of GRI indicators related to the SDGs. The minimum *SDGD* value is 11.283, while the maximum is 89.123. Regarding firm-level control variables, the statistics reveal that the average firm *SIZE* is approximately 13.929. *MTB* ranges from −0.76 to 9.79, whereas *ROA* oscillates from −66.74 to 60.42, with a mean value of 8.79. *PV* average value is about 8.942, while *LEV* corresponds to about 0.633. Last, *OWN* values span from 5.077 to 89.991, while *AGE* average value is about 3.851.

Concerning governance-level control variables, companies' average board size (*BS*), expressed as a natural logarithm, is about 2.268 directors. On average, about 48.82% of sample firms' board directors are independent (*BI*). Furthermore, in a minority of companies (23.31%), the CEO also serves as the Chairman of the board of directors (*BCEOD*). Last, the mean value of *BM* is about 2.239.

### 5.2 Correlation analysis

**Table 5** shows the outcome of the Pearson Correlation Matrix for dependent and independent variables. As expected, a positive and significant correlation was found between *FA* and *SDGD* ( $p < 0.01$ ), while a negative and significant correlation occurred between *FD* and *SDGD* ( $p < 0.01$ ). Other correlations have been observed among control variables. However, all the correlation values shown in **Table 5** are below the critical threshold of 0.8, indicating the absence of multicollinearity problems (Farrar and Glauber, 1967; Gujarati, 2009). The VIF test corroborated such evidence as no VIF value is higher than 10 (see **Table 6**) (Farrar and Glauber, 1967; Gujarati, 2009; Schiemann and Tietmeyer, 2022).

### 5.3 Multivariate results

**Table 6** outlines the results of the regression models estimated to test hypotheses **H1a** and **H1b**.

Results from **Model (1)** evidence a statistically significant and positive association between *FA* and *SDGD* (coefficient = 0.0259,  $p$ -value<0.01), suggesting that voluntary SDG disclosure provided by Italian-listed companies enhances analyst *FA*. This result confirms

Continuous variables	Mean	Std. Dev	Min	Max	Binary variables	0 (%)	1 (%)
FA	1.26	2.671	0	16.456	NE	84.31	15.69
FD	0.106	0.144	0	0.707	BCEOD	75.69	24.31
SDGD	38.626	16.027	11.283	89.123			
SIZE	13.929	1.567	11.476	18.721			
MTB	2.203	1.95	−0.76	9.79			
ROA	8.79	17.268	−66.74	60.42			
PV	8.942	8.585	−4.91	23.47			
LEV	0.633	0.166	0.204	1.191			
OWN	49.554	19.201	5.077	89.991			
AGE	3.851	0.721	0	5.215			
BS	2.268	0.248	1.609	2.833			
BI	48.819	16.072	16.667	88.889			
BM	2.239	0.453	0	3.526			

**Source(s):** Authors' elaboration

**Table 4.**  
Descriptive statistics



Table 5.  
Bivariate correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) FA	1.000														
(2) FD	0.043	1.000													
(3) SDGD	0.155***	-0.124***	1.000												
(4) SIZE	-0.030	-0.108**	0.462***	1.000											
(5) MTB	-0.126***	-0.072	-0.022	0.003	1.000										
(6) ROA	-0.245***	-0.130***	-0.062	0.007	0.393***	1.000									
(7) PV	-0.204***	-0.091 *	0.048	0.039	0.550***	0.607***	1.000								
(8) NE	0.195***	0.068	0.013	-0.098**	-0.208***	-0.654***	-0.463***	1.000							
(9) LEV	0.165***	0.008	0.142***	0.125***	-0.122***	-0.204***	-0.268***	0.268***	1.000						
(10) OWN	0.034	0.074 *	-0.205***	-0.279***	0.069*	0.022	-0.089**	0.087**	-0.013	1.000					
(11) AGE	0.023	0.055	0.253***	0.224***	-0.112***	-0.075*	-0.123***	0.032	0.059	0.035	1.000				
(12) BS	0.002	0.042	0.174***	0.394***	0.119***	-0.043	0.011	0.005	-0.032	-0.124***	0.029	1.000			
(13) BCEOD	-0.059	0.119***	-0.136***	-0.195***	0.083*	0.103**	0.106**	-0.012	-0.209***	0.099**	0.029	-0.135***	1.000		
(14) BI	0.043	-0.161 ***	0.340***	0.512***	0.031	0.022	0.009	-0.043	0.189***	-0.274***	0.049	0.077*	-0.222***	1.000	
(15) BM	0.079*	0.083*	0.183***	0.145***	-0.097**	-0.131***	-0.092**	0.103**	0.192***	-0.169***	-0.039	0.037	-0.214***	0.302***	1.000
Note(s): *** $p < 0.01$ , ** $p < 0.05$ , * $p < 0.1$															
Source(s): Authors' elaboration															

					Analyst forecast and SDGs
	FA <sub>t</sub>	(1) VIF	FD <sub>t</sub>	(2) VIF	
SDGD <sub>t-1</sub>	0.0259*** (0.00932)		−0.00158** (0.000613)		
<i>(Control variables)</i>					
SIZE <sub>t-1</sub>	−0.153* (0.0897)	2.25	−0.00239 (0.00853)	2.21	15
MTB <sub>t-1</sub>	0.0145 (0.105)	1.62	0.00142 (0.00468)	1.62	
ROA <sub>t-1</sub>	−0.0291* (0.0154)	2.45	−0.00156** (0.000680)	2.45	
PV <sub>t-1</sub>	−0.0148 (0.0157)	2.34	−0.00149 (0.00131)	2.30	
NE <sub>t-1</sub>	0.121 (0.591)	1.99	−0.0391 (0.0248)	2.04	
LEV <sub>t-1</sub>	1.092 (0.872)	1.33	−0.0518 (0.0761)	1.32	
OWN <sub>t-1</sub>	0.00574 (0.00738)	1.23	0.000322 (0.000478)	1.23	
AGE <sub>t-1</sub>	−0.199 (0.200)	1.16	0.0159 (0.0132)	1.18	
BS <sub>t-1</sub>	0.204 (0.630)	1.24	0.0684 (0.0576)	1.24	
BCEOD <sub>t-1</sub>	−0.171 (0.234)	1.19	0.0368 (0.0278)	1.21	
BI <sub>t-1</sub>	0.00587 (0.00890)	1.82	−0.00133* (0.000696)	1.82	
BM <sub>t-1</sub>	−0.0457 (0.370)	1.29	0.0279 (0.0190)	1.31	
Year FE	Included		Included		
Sector FE	Included		Included		
Constant	2.320 (1.918)		−0.0475 (0.142)		
Observations	438		409		
R-squared	10.8%		13.9%		
<b>Note(s):</b> OLS regression model with standard error clustered by firm. Robust standard error in parentheses. *** <i>p</i> < 0.01, ** <i>p</i> < 0.05, * <i>p</i> < 0.1 <b>Source(s):</b> Authors' elaboration					<b>Table 6.</b> Hypothesis testing results

hypothesis [H1a](#) and aligns with prior similar studies (e.g. [Dhaliwal et al., 2012](#); [Garrido-Miralles et al., 2016](#); [Zhou et al., 2017](#); [Luo and Wu, 2022](#)) that detected a positive impact of CSR or IR disclosure or issuance of stand-alone NFR on analyst FA. [Table 6](#) also shows a statistically negative and significant association between *FD* and *SDGD* (coefficient = −0.00158, *p*-value<0.05), indicating that voluntary SDG disclosure provided by Italian-listed companies reduces analyst FD. This result supports hypothesis [H1b](#) and is consistent with prior studies finding a negative association between financial disclosure (e.g. [Lang and Lundholm, 1996](#); [Hope, 2003](#)) or IR disclosure ([Zhou et al., 2017](#)) and analyst FD.

Last, regarding control variables, regression model results evidenced a negative relationship between *SIZE* (*p*-value<0.1), *ROA* (*p*-value<0.1) and *FA*. Also, a negative association between *ROA* (*p*-value<0.05), *BI* (*p*-value<0.1) and *FD* was detected.

## 6. Discussion

The introduction of the NFRD has been accompanied by increasing scepticism among academics before and after its introduction because of some limitations that undermined its effectiveness (La Torre *et al.*, 2018; Carungu *et al.*, 2021; Pizzi *et al.*, 2021a, b). In particular, the binding nature of the NFRD appeared to be mitigated by the adoption of a principle-based approach and the flexibility granted to Member States to impose specific requirements regarding some key aspects, including disclosure format and reporting framework choice, content definition, independent assurance request and potential penalties to apply for non-compliance (Carungu *et al.*, 2021; Mio *et al.*, 2021). Therefore, while some countries adopted a “carrot” approach aimed at diminishing the cost of disclosure (for example, requiring assurance or permitting the omission of some information in exceptional cases under the “safe harbour principle”), others adopted a “stick” approach (for example, imposing non-compliance penalties) (Mio *et al.*, 2021). The Italian approach in transposing Directive 95/2014/EU could be defined as mixed, as while requiring assurance and permitting the use of different reporting formats and frameworks, it imposes fines for the omission of relevant information (Carungu *et al.*, 2021; Mio *et al.*, 2021). Also, it does not require disclosure of companies’ contributions towards SDGs (Pizzi *et al.*, 2021b; Manes-Rossi and Nicolò, 2022). Therefore, in line with voluntary disclosure theory’s tenets, the decision of Italian companies to disclose SDG information rests on a cost-benefit analysis, where companies that are more scrutinised and are expected to be positively rewarded by the markets and stakeholders are expected to be more incentivised to convey SDG disclosure (Healy and Palepu, 2001; Zhou *et al.*, 2017; Nicolò *et al.*, 2024).

Accordingly, this study’s findings evidence that analysts respond positively to the voluntary provision of SDG disclosures by Italian listed companies; so, it could be stated that SDG disclosure is helpful for sell-side analysts when preparing their earnings forecast estimates. As Li and Yang (2016, p. 935) stated, “A firm’s voluntary disclosure decision is an equilibrium outcome of its underlying incentives and disincentives for disclosure.”. From this theoretical standpoint, the results of this study pinpoint that Italian-listed companies perceive more incentives than disincentives in providing additional disclosure beyond mandatory requirements. This could be related to the assumption that analysts work as “surrogate investors” in that their forecasts and recommendations directly impact investors’ appetite for a firm’s shares (Ioannou and Serafeim, 2015). So, considering that investors have become increasingly cognizant of the growth opportunities and benefits linked to responsible and inclusive practices related to SDGs, Italian companies appear to be more motivated to convey voluntary information on SDGs that is useful for analysts. In this way, reinforcing their SDG transparency enables sell-side analysts to obtain a more comprehensive picture of their performance and generate more accurate earnings forecasts. This, in turn, is expected to reduce the information asymmetry between corporate insiders and outsiders, making capital allocation more efficient and the market more liquid. This insight aligns with Dhaliwal *et al.* (2012), who advocated that analysts represent the conduit by which socially responsible companies might benefit economically from their sustainability-related plans and strategies via the positive opinions expressed on their sustainability practices.

Findings also show that voluntary SDG disclosure reduces noise in the analysts’ interpretation of corporate information and, thus, disagreements in their forecasts. This result aligns with voluntary disclosure theory and corroborates the abovementioned considerations. Also, in this case, it could be stated that Italian-listed companies are aware of the market benefits arising from improving their information environment regarding voluntary SDG disclosure. In particular, analyst FD can be interpreted as a measure of investors’ uncertainty about a company’s future economic performance (Vanstraelen *et al.*, 2003), where investors usually consider more than one analyst’s opinion to make resource-allocation decisions. Thus, more convergent opinions about company’s future economic

performance are likely to reduce investors' uncertainty and increase their confidence in companies, resulting, in turn, in beneficial effects for the entire capital market (Lang and Lundholm, 1996; Orens and Lybaert, 2007; Yu, 2010; Zhou *et al.*, 2017; Garcia-Sanchez *et al.*, 2020). Considering that sell-side analysts are likely to perceive if voluntary information is credible or not or if it is opportunistically conveyed by managers to manipulate investors and other stakeholder opinions, this finding is also important in the context of prior research on voluntary SDG disclosure. From this perspective, previous research noted that, despite the increasing capital market participants' attention to corporate SDG commitment (PwC, 2019; Ernst and Young, 2020), most companies' SDG disclosure is still shallow and driven by impression management purposes (e.g. Heras-Saizarbitoria *et al.*, 2022; Silva, 2021; Lodhia *et al.*, 2023; Manes-Rossi and Nicolò, 2022). In contrast, this study highlights that in the Italian context, essential market intermediaries like analysts perceive voluntary SDG disclosure provided by Italian-listed companies as beneficial for their forecasts. In this view, it is crucial to note that some scholars noted how the existence of companies with consolidated experience in non-financial reporting had limited the coercive effect of the NFRD on so-called late adopters (Carungu *et al.*, 2021; Pizzi *et al.*, 2021a; Posadas *et al.*, 2023). More specifically, NFR quality was found to be higher in early adopters already preparing stand-alone sustainability reports according to the GRI standards before the NFRD than in late adopters who adjusted their financial statements to include non-financial information after the NFRD entered into force (Carungu *et al.*, 2021). Particularly, Pizzi *et al.* (2021a) observed that Italian early adopters are more prone to include voluntary SDG information in their NFR than late adopters. Lastly, Deloitte's report (Deloitte, 2022) evidenced that most Italian-listed firms prepare a separate NFD (usually a sustainability report) following GRI Standards and are increasing their efforts to provide voluntary SDG information. Therefore, collectively, this study also widens prior research conducted in Italy, confirming that Italian-listed companies are consolidating their experience in NFR practises under GRI Standards regardless of last regulation, increasing their appetite for voluntary SDG disclosure that is useful for market participants like sell-side analysts.

## 7. Conclusions

In the last decades, global challenges like climate change, biodiversity loss, overconsumption of natural resources, pollution, human rights inequality and ethical scandals have elicited firms to revise their societal role, putting sustainability at the core of their value creation processes and reporting systems. Accordingly, capital market participants like investors, analysts, pension funds and asset managers have started to attach more importance to sustainable investing in asset allocation plans, pressing companies to be more accountable for their non-financial performance. The launch of the 2030 Agenda and related SDGs has represented a watershed moment in this evolving scenario as it has called businesses to play a leading role in navigating major social and environmental challenges the world faces. As a consequence, investors and other capital market actors' appetite for corporate SDG disclosure has increased.

Nevertheless, while academic literature on corporate SDG disclosure is burgeoning, there is still much to learn about if and how SDG disclosure matters for capital markets. Prior studies mainly assume the stakeholders' perspective, investigating the extent and quality of corporate voluntary SDG disclosure under the legitimacy theory's paradigm, while others examined its antecedents. So, little is known about the consequences of SDG disclosure from an investor's standpoint.

With this in mind, this paper extends the scope of prior literature, providing fresh insight into the relevance of voluntary SDG disclosure for the capital market. In particular, this study examines the voluntary SDG disclosure practices of a sample of Italian-listed companies

preparing their NFD following GRI Standards to shed light on the association between SDG disclosure and analyst forecast quality. Financial analysts are well-educated experts who play a decisive role as intermediaries in capital markets, alleviating the information asymmetry between companies and external investors. Their earnings forecasts and recommendations represent a fundamental source of information for investors, influencing their behaviours and, in turn, stock prices. So, analyst FA and FD represent two important variables expressive of the quality of firms' information environment and the usefulness of corporate information for investors' decision-making processes.

Therefore, this study provides empirical evidence suggesting that voluntary SDG disclosure matters to the capital market in that it helps enhance the information environment of companies, evidenced by improved analyst forecast quality. In particular, findings highlight that SDG disclosure positively influences analyst FA. This evidence supports the arguments of voluntary disclosure theory as it unveils that sampled Italian-listed companies consider that market incentives of providing additional disclosure beyond mandatory requirements outweigh disincentives related to voluntary disclosure costs. So, they tend to offer more information on their commitment towards SDGs that can help analysts conduct more accurate forecasts and, in turn, facilitate investors' decision-making processes.

Also, this study provides empirical evidence witnessing that voluntary SDG disclosure provided by selected Italian-listed companies reduces analyst FD. Considering that analyst FD can be interpreted as a measure of investors' uncertainty, this result corroborates the prior one, putting into light that voluntary SDG disclosure provided by companies under inquiry might benefit the entire capital market in the Italian context. Specifically, investors may benefit from more uniform analysts' opinions about corporate future economic performance, making more informed decisions.

The study's findings also have various practical implications while standing at the intersection between different literature streams, including SDG disclosure and analyst forecast quality. In particular, this study underlines that integrating SDGs into corporate non-financial reports could effectively demonstrate sustainable conduct to stakeholders and improve the dialogue with investors, especially in light of the exponential growth of impact and socially responsible investing. Prior research noted that SDG disclosure has some caveats due to its unregulated nature and multidimensional character covering different social, environmental and economic issues. So, many firms only provide generic and boilerplate SDG disclosure for legitimacy purposes, making it arduous for investors to precisely track companies' progress towards SDG achievement. Accordingly, this study indicates to corporate managers that following GRI Standards may represent the right way to effectively integrate SDG disclosure in corporate NFRs and increase the relevance of such information for investors and other capital market participants. From this standpoint, this study would speak directly to policymakers and regulators as, consistent with prior evidence (e.g. Carungu *et al.*, 2021; Pizzi *et al.*, 2021a, b; Posadas *et al.*, 2023), we noted that coercive measures may not represent the *panacea* for spurring businesses to improve their non-financial transparency. Indeed, while analysing a mandatory NFR context, this study focused on voluntary information that is out of the scope of NFRD. However, the results obtained are encouraging as they evidence that the companies' appetite for disclosing non-financial information – such as their commitment towards SDGs – might be motivated by perceived financial or market incentives rather than binding norms. This is particularly relevant considering that we are in the post-NFRD era, where a new regulation (Corporate Sustainability Reporting Directive) and standards (European Sustainability Reporting Standards – ESRS) will dramatically impact the corporate accounting scenario in the following years. So, this study's results would offer stimuli to policymakers and regulators to reflect on the need to balance the need to standardise corporate NFR practices with that to ensure the right incentive for companies to avoid passive or symbolic compliance with



regulation and stimulate a proactive approach towards non-financial transparency. In our opinion, the excess of regulatory initiatives (e.g. CSRD with ESRS; EU taxonomy; Sustainable Finance Disclosure Regulation) might create serious overload problems for companies, generating effects contrary to expectations with negative consequences for capital market participants.

Last, financial analysts can derive valuable insights from SDG disclosure when crafting their forecasts, mainly when assessed against established sustainability reporting standards. The comparability of data captured through GRI Standards, coupled with the mandatory assurance of said information, facilitates the application of more standardised criteria in the provision of forecasts.

This study is subject to certain limitations, which also pave the way for future research opportunities.

Firstly, this is the first exploratory study on the association between SDG disclosure and analyst forecast quality. For this reason, the study focused on a single country with specific characteristics, like Italy. So, future research may expand on this study's results to investigate other institutional settings or specific sectors. Secondly, this study did not examine the analyst's valuation process. So, future studies may undertake interviews or surveys to gather further insight into how analysts perceive SDG disclosure and use it to make forecasts. Thirdly, another limitation lies in omitting sustainability performance as an additional factor that could influence analyst forecast quality or voluntary SDG disclosure. Future research efforts could address this aspect, building upon the findings obtained in our study. Finally, analyst forecast quality was proxied by analyst FA and FD. However, alternative approaches have been developed in the literature that can be used to conduct future research in the context of SDG disclosure and analyst forecast quality.

## Notes

1. Despite not being the most recent mapping document, it is the latest available that allows linking each of the 17 SDGs to the GRI Standards (GRI, 2016, 2020), considering the period under inquiry. The most recent document (GRI, 2022) allows linking the SDG indicators with the current GRI Universal Standards (GRI, 2021) whose applicability starts from the 1st of January, 2023 onwards. So, it is unsuitable for this study.
2. For example, in the context of disclosing the impact on SDG1, certain GRI standards (202–1, 203–2, 207–1, 207–2, 207–3 and 207–4) are listed multiple times, resulting in a list of 16 indicators, which includes 9 instances of duplication. Consequently, the total number of indicators considered relevant to SDG1 is reduced to 7, meaning the total number of distinct indicators after eliminating redundancies.

## References

- Adams, C.A. and Abhayawansa, S. (2022), "Connecting the COVID-19 pandemic, environmental, social and governance (ESG) investing and calls for 'harmonisation' of sustainability reporting", *Critical Perspectives on Accounting*, Vol. 82, 102309, doi: [10.1016/j.cpa.2021.102309](https://doi.org/10.1016/j.cpa.2021.102309).
- Adhikari, B.K. (2016), "Causal effect of analyst following on corporate social responsibility", *Journal of Corporate Finance*, Vol. 41, pp. 201–216, doi: [10.1016/j.jcorpfin.2016.08.010](https://doi.org/10.1016/j.jcorpfin.2016.08.010).
- Allegrini, M. and Greco, G. (2013), "Corporate boards, audit committees and voluntary disclosure: evidence from Italian listed companies", *Journal of Management and Governance*, Vol. 17 No. 1, pp. 187–216, doi: [10.1007/s10997-011-9168-3](https://doi.org/10.1007/s10997-011-9168-3).
- Arena, M., Azzone, G., Ratti, S., Urbano, V.M. and Vecchio, G. (2023), "Sustainable development goals and corporate reporting: an empirical investigation of the oil and gas industry", *Sustainable Development*, Vol. 31 No. 1, pp. 12–25, doi: [10.1002/sd.2369](https://doi.org/10.1002/sd.2369).

- Bernardi, C. and Stark, A.W. (2018), "Environmental, social and governance disclosure, integrated reporting, and the accuracy of analyst forecasts", *The British Accounting Review*, Vol. 50 No. 1, pp. 16-31, doi: [10.1016/j.bar.2016.10.001](https://doi.org/10.1016/j.bar.2016.10.001).
- Beyer, A., Cohen, D.A., Lys, T.Z. and Walther, B.R. (2010), "The financial reporting environment: review of the recent literature", *Journal of Accounting and Economics*, Vol. 50 Nos 2-3, pp. 296-343, doi: [10.1016/j.jacceco.2010.10.003](https://doi.org/10.1016/j.jacceco.2010.10.003).
- Billio, M., Costola, M., Hristova, I., Latino, C. and Pelizzon, L. (2021), "Inside the ESG ratings: (Dis) agreement and performance", *Corporate Social Responsibility and Environmental Management*, Vol. 28 No. 5, pp. 1426-1445, doi: [10.1002/csr.2177](https://doi.org/10.1002/csr.2177).
- BlackRock (2020), "Sustainability goes mainstream, 2020 global sustainable investing survey", available at: <https://img.lair.co/cms/2021/05/28202727/blackrock-sustainability-survey.pdf> (accessed 6 January 2023).
- Bose, S. and Khan, H.Z. (2022), "Sustainable development goals (SDGs) reporting and the role of country-level institutional factors: an international evidence", *Journal of Cleaner Production*, Vol. 335, 130290, doi: [10.1016/j.jclepro.2021.130290](https://doi.org/10.1016/j.jclepro.2021.130290).
- Capstaff, J., Rees, W. and Paudyal, K. (1998), "Analysts' forecasts of German firms' earnings: a comparative analysis", *Journal of International Financial Management and Accounting*, Vol. 9 No. 2, pp. 83-116, doi: [10.1111/1467-646x.00032](https://doi.org/10.1111/1467-646x.00032).
- Carungu, J., Di Pietra, R. and Molinari, M. (2021), "Mandatory vs voluntary exercise on non-financial reporting: does a normative/coercive isomorphism facilitate an increase in quality?", *Meditari Accountancy Research*, Vol. 29 No. 3, pp. 449-476, doi: [10.1108/medar-08-2019-0540](https://doi.org/10.1108/medar-08-2019-0540).
- Christensen, H.B., Hail, L. and Leuz, C. (2021), "Mandatory CSR and sustainability reporting: economic analysis and literature review", *Review of Accounting Studies*, Vol. 26 No. 3, pp. 1176-1248, doi: [10.1007/s11142-021-09609-5](https://doi.org/10.1007/s11142-021-09609-5).
- CSR Europe and GRI (2017), "Member state implementation of directive 2014/95/EU. A comprehensive overview of how member states are implementing the EU directive on non-financial and diversity information", available at: <https://www.accountancyeurope.eu/wp-content/uploads/1711-NFRpublication-GRI-CSR-Europe.pdf>.
- Deloitte (2017), "2030 Purpose: good business and a better future connecting sustainable development with enduring commercial success. January 2017", available at: <https://www.deloitte.com/global/en/issues/work/purpose-2030-good-business-better-future.html> (accessed 6 January 2023).
- Deloitte (2022), "Osservatorio Nazionale sulla Rendicontazione Non Finanziaria, 5ª edizione, Novembre 2022. Università di Pavia, Dipartimento di Scienze Economiche e Aziendali", available at: <https://www2.deloitte.com/it/it/pages/audit/articles/osservatorio-nazionale-sulla-rendicontazione-non-finanziaria-5-edizione.html> (accessed 8 December 2023).
- Dhaliwal, D.S., Radhakrishnan, S., Tsang, A. and Yang, Y.G. (2012), "Nonfinancial disclosure and analyst forecast accuracy: international evidence on corporate social responsibility disclosure", *The Accounting Review*, Vol. 87 No. 3, pp. 723-759, doi: [10.2308/accr-10218](https://doi.org/10.2308/accr-10218).
- Diaz-Sarachaga, J.M. (2021), "Shortcomings in reporting contributions towards the sustainable development goals", *Corporate Social Responsibility and Environmental Management*, Vol. 28 No. 4, pp. 1299-1312, doi: [10.1002/csr.2129](https://doi.org/10.1002/csr.2129).
- Diener, J. (2023), "Impact case or impact washing? An analysis of investors' strategies to influence corporate behavior", *Sustainability Accounting, Management and Policy Journal*, Vol. 14 No. 5, pp. 1002-1021, doi: [10.1108/sampj-02-2022-0088](https://doi.org/10.1108/sampj-02-2022-0088).
- Erin, O.A. and Bamigboye, O.A. (2021), "Evaluation and analysis of SDG reporting: evidence from Africa", *Journal of Accounting and Organizational Change*, Vol. 18 No. 3, pp. 369-396, doi: [10.1108/jaoc-02-2020-0025](https://doi.org/10.1108/jaoc-02-2020-0025).
- Erin, O.A., Bamigboye, O.A. and Oyewo, B. (2022), "Sustainable development goals (SDG) reporting: an analysis of disclosure", *Journal of Accounting in Emerging Economies*, Vol. 12 No. 5, pp. 761-789, doi: [10.1108/jaee-02-2020-0037](https://doi.org/10.1108/jaee-02-2020-0037).

- Ernst and Young (2020), "How will ESG performance shape your future?", available at: [https://assets.ey.com/content/dam/ey-sites/ey-com/en\\_gl/topics/assurance-pdfs/ey-global-institutional-investor-survey-2020.pdf](https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/assurance-pdfs/ey-global-institutional-investor-survey-2020.pdf) (accessed 31 January 2023).
- Farrar, D.E. and Glauber, R.R. (1967), "Multicollinearity in regression analysis: the problem revisited", *The Review of Economics and Statistics*, Vol. 49 No. 1, pp. 92-107, doi: [10.2307/1937887](https://doi.org/10.2307/1937887).
- Ferri, L.M. (2017), "The influence of the institutional context on sustainability reporting. A cross-national analysis", *Social Responsibility Journal*, Vol. 13 No. 1, pp. 24-47, doi: [10.1108/srj-11-2015-0172](https://doi.org/10.1108/srj-11-2015-0172).
- Galeazzo, A., Miandar, T. and Carraro, M. (2023), "SDGs in corporate responsibility reporting: a longitudinal investigation of institutional determinants and financial performance", *Journal of Management and Governance*, Vol. 28, pp. 1-24, doi: [10.1007/s10997-023-09671-y](https://doi.org/10.1007/s10997-023-09671-y).
- García-Meca, E. and Martínez-Ferrero, J. (2021), "Is SDG reporting substantial or symbolic? An examination of controversial and environmentally sensitive industries", *Journal of Cleaner Production*, Vol. 298, 126781, doi: [10.1016/j.jclepro.2021.126781](https://doi.org/10.1016/j.jclepro.2021.126781).
- García-Sánchez, I.M., Aibar-Guzman, B., Aibar-Guzman, C. and Rodríguez-Ariza, L. (2020), "'Sell' recommendations by analysts in response to business communication strategies concerning the sustainable development goals and the SDG compass", *Journal of Cleaner Production*, Vol. 255, 120194, doi: [10.1016/j.jclepro.2020.120194](https://doi.org/10.1016/j.jclepro.2020.120194).
- García-Sánchez, I.M., Hussain, N., Khan, S.A. and Martínez-Ferrero, J. (2021), "Do markets punish or reward corporate social responsibility decoupling?", *Business and Society*, Vol. 60 No. 6, pp. 1431-1467, doi: [10.1177/0007650319898839](https://doi.org/10.1177/0007650319898839).
- García-Sánchez, I.M., Gómez-Miranda, M.E., David, F. and Rodríguez-Ariza, L. (2019), "Analyst coverage and forecast accuracy when CSR reports improve stakeholder engagement: the global reporting initiative-international finance corporation disclosure strategy", *Corporate Social Responsibility and Environmental Management*, Vol. 26 No. 6, pp. 1392-1406, doi: [10.1002/csr.1755](https://doi.org/10.1002/csr.1755).
- Garrido-Miralles, P., Zorio-Grima, A. and García-Benau, M.A. (2016), "Sustainable development, stakeholder engagement and analyst forecasts' accuracy: positive evidence from the Spanish setting", *Sustainable Development*, Vol. 24 No. 2, pp. 77-88, doi: [10.1002/sd.1607](https://doi.org/10.1002/sd.1607).
- GRI (2015), "SDG Compass: the guide for business action on the SDGs", available at: [https://sdgcompass.org/wp-content/uploads/2016/05/019104\\_SDG\\_Compass\\_Guide\\_2015\\_v29.pdf](https://sdgcompass.org/wp-content/uploads/2016/05/019104_SDG_Compass_Guide_2015_v29.pdf) (accessed 1 December 2023).
- GRI (2016), "Consolidated set of GRI sustainability reporting standards 2016", available at: <https://www.globalreporting.org/how-to-use-the-gri-standards/resource-center/>
- GRI (2018), "In focus: addressing investor needs in business reporting on the SDGs", available at: <https://www.globalreporting.org/media/sphmq4r0/addressing-investor-needs-sdgs-reporting.pdf> (accessed 1 August 2023).
- GRI (2020), "Linking the SDGs and the GRI standards. Last updated March 2020", available at: <https://www.globalreporting.org/media/lbvnxb15/mapping-sdgs-gri-update-march.pdf> (accessed 15 November 2023).
- GRI (2021), "GRI universal standards", available at: <https://www.globalreporting.org/how-to-use-the-gri-standards/> (accessed 15 November 2023).
- GRI (2022), "Linking the SDGs and the GRI standards. Last updated May 2022", available at: <https://www.globalreporting.org/umbraco/Surface/ResourceCentre/PopupResource?id=8585> (accessed 15 November 2023).
- GRI and United Nations Global Compact (2018), "Integrating the SDGs into corporate reporting. A practical guide", available at: <https://unglobalcompact.org/library/5628> (accessed 6 June 2023).
- Gujarati, D.N. (2009), *Basic Econometrics*, McGraw-Hill Education, New York, NY.

- Guthrie, J., Petty, R., Yongvanich, K. and Ricceri, F. (2004), "Using content analysis as a research method to inquire into intellectual capital reporting", *Journal of intellectual capital*, Vol. 5 No. 2, pp. 282-293.
- Harjoto, M.A. and Rossi, F. (2019), "Religiosity, female directors, and corporate social responsibility for Italian listed companies", *Journal of Business Research*, Vol. 95, pp. 338-346, doi: [10.1016/j.jbusres.2018.08.013](https://doi.org/10.1016/j.jbusres.2018.08.013).
- Healy, P.M. and Palepu, K.G. (2001), "Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature", *Journal of Accounting and Economics*, Vol. 31 Nos 1-3, pp. 405-440, doi: [10.1016/s0165-4101\(01\)00018-0](https://doi.org/10.1016/s0165-4101(01)00018-0).
- Heras-Saizarbitoria, I., Urbietta, L. and Boiral, O. (2022), "Organizations' engagement with sustainable development goals: from cherry-picking to SDG-washing?", *Corporate Social Responsibility and Environmental Management*, Vol. 29 No. 2, pp. 316-328, doi: [10.1002/csr.2202](https://doi.org/10.1002/csr.2202).
- Ho, L.-C.J. and Tsay, J. (2004), "Analysts' forecasts of Taiwanese firms' earnings: some empirical evidence", *Review of Pacific Basin Financial Markets and Policies*, Vol. 7 No. 4, pp. 571-597, doi: [10.1142/s0219091504000238](https://doi.org/10.1142/s0219091504000238).
- Hope, O.K. (2003), "Disclosure practices, enforcement of accounting standards, and analysts' forecast accuracy: an international study", *Journal of Accounting Research*, Vol. 41 No. 2, pp. 235-272, doi: [10.1111/1475-679x.00102](https://doi.org/10.1111/1475-679x.00102).
- Hung, M. and Subramanyam, K.R. (2007), "Financial statement effects of adopting international accounting standards: the case of Germany", *Review of Accounting Studies*, Vol. 12 No. 4, pp. 623-657, doi: [10.1007/s11142-007-9049-9](https://doi.org/10.1007/s11142-007-9049-9).
- Hussainey, K. and Salama, A. (2010), "The importance of corporate environmental reputation to investors", *Journal of Applied Accounting Research*, Vol. 11 No. 3, pp. 229-241, doi: [10.1108/09675421011088152](https://doi.org/10.1108/09675421011088152).
- Ioannou, I. and Serafeim, G. (2015), "The impact of corporate social responsibility on investment recommendations: analysts' perceptions and shifting institutional logics", *Strategic Management Journal*, Vol. 36 No. 7, pp. 1053-1081, doi: [10.1002/smj.2268](https://doi.org/10.1002/smj.2268).
- Jamali, D., Barkemeyer, R., Samara, G. and Markovic, S. (2022), "The SDGs: a change agenda shaping the future of business and humanity at large", *Business Ethics, the Environment and Responsibility*, Vol. 31 No. 4, pp. 899-903, doi: [10.1111/beer.12483](https://doi.org/10.1111/beer.12483).
- KPMG (2022), "Big shifts, small steps", *Survey of Sustainability Reporting 2022*, available at: <https://kpmg.com/xx/en/home/insights/2022/09/survey-of-sustainability-reporting-2022.html>
- KPMG, GRI, UNEP (2016), "Carrots Sticks Global trends in sustainability reporting regulation and policy", available at: <https://www.carrotsandsticks.net/>
- La Porta, R.L., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R.W. (1998), "Law and finance", *Journal of Political Economy*, Vol. 106 No. 6, pp. 1113-1155, doi: [10.1086/250042](https://doi.org/10.1086/250042).
- La Torre, M., Sabelfeld, S., Blomkvist, M., Tarquinio, L. and Dumay, J. (2018), "Harmonising non-financial reporting regulation in Europe: practical forces and projections for future research", *Meditari Accountancy Research*, Vol. 26 No. 4, pp. 598-621, doi: [10.1108/medar-02-2018-0290](https://doi.org/10.1108/medar-02-2018-0290).
- Lang, M.H. and Lundholm, R.J. (1996), "Corporate disclosure policy and analyst behavior", *Accounting Review*, Vol. 71 No. 4, pp. 467-492.
- Lee, D.W. and Liu, M.H. (2011), "Does more information in stock price lead to greater or smaller idiosyncratic return volatility?", *Journal of Banking and Finance*, Vol. 35 No. 6, pp. 1563-1580, doi: [10.1016/j.jbankfin.2010.11.002](https://doi.org/10.1016/j.jbankfin.2010.11.002).
- Li, X. and Yang, H.I. (2016), "Mandatory financial reporting and voluntary disclosure: the effect of mandatory IFRS adoption on management forecasts", *The Accounting Review*, Vol. 91 No. 3, pp. 933-953, doi: [10.2308/accr-51296](https://doi.org/10.2308/accr-51296).
- Lin, K.J., Tan, J., Zhao, L. and Karim, K. (2015), "In the name of charity: political connections and strategic corporate social responsibility in a transition economy", *Journal of Corporate Finance*, Vol. 32, pp. 327-346, doi: [10.1016/j.jcorpfin.2014.10.007](https://doi.org/10.1016/j.jcorpfin.2014.10.007).

- Lodhia, S., Kaur, A. and Kuruppu, S.C. (2023), "The disclosure of sustainable development goals (SDGs) by the top 50 Australian companies: substantive or symbolic legitimization?", *Meditari Accountancy Research*, Vol. 31 No. 6, pp. 1578-1605, doi: [10.1108/medar-05-2021-1297](https://doi.org/10.1108/medar-05-2021-1297).
- Luo, K. and Wu, S. (2022), "Corporate sustainability and analysts' earnings forecast accuracy: evidence from environmental, social and governance ratings", *Corporate Social Responsibility and Environmental Management*, Vol. 29 No. 5, pp. 1465-1481, doi: [10.1002/csr.2284](https://doi.org/10.1002/csr.2284).
- Luo, X., Wang, H., Raithel, S. and Zheng, Q. (2015), "Corporate social performance, analyst stock recommendations, and firm future returns", *Strategic Management Journal*, Vol. 36 No. 1, pp. 123-136, doi: [10.1002/smj.2219](https://doi.org/10.1002/smj.2219).
- Manes-Rossi, F. and Nicolò, G. (2022), "Exploring sustainable development goals reporting practices: from symbolic to substantive approaches—evidence from the energy sector", *Corporate Social Responsibility and Environmental Management*, Vol. 29 No. 5, pp. 1799-1815, doi: [10.1002/csr.2328](https://doi.org/10.1002/csr.2328).
- Michelon, G. and Parbonetti, A. (2012), "The effect of corporate governance on sustainability disclosure", *Journal of Management and Governance*, Vol. 16 No. 3, pp. 477-509, doi: [10.1007/s10997-010-9160-3](https://doi.org/10.1007/s10997-010-9160-3).
- Mio, C., Fasan, M., Marcon, C. and Panfilo, S. (2021), "Carrot or stick? An empirical analysis of the different implementation strategies of the EU directive on nonfinancial information across Europe", *Corporate Social Responsibility and Environmental Management*, Vol. 28 No. 6, pp. 1591-1605, doi: [10.1002/csr.2124](https://doi.org/10.1002/csr.2124).
- Muslu, V., Mutlu, S., Radhakrishnan, S. and Tsang, A. (2019), "Corporate social responsibility report narratives and analyst forecast accuracy", *Journal of Business Ethics*, Vol. 154 No. 4, pp. 1119-1142, doi: [10.1007/s10551-016-3429-7](https://doi.org/10.1007/s10551-016-3429-7).
- Ng, A.C. and Rezaee, Z. (2020), "Business sustainability factors and stock price informativeness", *Journal of Corporate Finance*, Vol. 64 No. 64, 101688, doi: [10.1016/j.jcorpfin.2020.101688](https://doi.org/10.1016/j.jcorpfin.2020.101688).
- Nicolò, G., Zampone, G., Sannino, G. and De Iorio, S. (2022), "Sustainable corporate governance and non-financial disclosure in Europe: does the gender diversity matter?", *Journal of Applied Accounting Research*, Vol. 23 No. 1, pp. 227-249, doi: [10.1108/jaar-04-2021-0100](https://doi.org/10.1108/jaar-04-2021-0100).
- Nicolò, G., Zanellato, G., Tiron-Tudor, A. and Tartaglia Polcini, P. (2023), "Revealing the corporate contribution to sustainable development goals through integrated reporting: a worldwide perspective", *Social Responsibility Journal*, Vol. 19 No. 5, pp. 829-857, doi: [10.1108/srj-09-2021-0373](https://doi.org/10.1108/srj-09-2021-0373).
- Nicolò, G., Zampone, G., De Iorio, S. and Sannino, G. (2024), "Does SDG disclosure reflect corporate underlying sustainability performance? Evidence from UN Global Compact participants", *Journal of International Financial Management and Accounting*, Vol. 35 No. 1, pp. 214-260, doi: [10.1111/jifm.12194](https://doi.org/10.1111/jifm.12194).
- Nobes, C. and Parker, R. (2012), *Comparative International Accounting*, 12th ed., Pearson Prentice Hall, Edinburgh.
- Orens, R. and Lybaert, N. (2007), "Does the financial analysts' usage of non-financial information influence the analysts' forecast accuracy? Some evidence from the Belgian sell-side financial analyst", *The International Journal of Accounting*, Vol. 42 No. 3, pp. 237-271, doi: [10.1016/j.intacc.2007.06.002](https://doi.org/10.1016/j.intacc.2007.06.002).
- Oxfam, M.R., Gneiting, U. and Agarwal, N. (2018), "Walking the talk: assessing companies' progress from SDG rhetoric to action", doi: [10.21201/2018.3378](https://doi.org/10.21201/2018.3378), available at: <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/620550/dpwalking-the-talk-business-sdgs-240918-en.pdf> (accessed 1 February 2023).
- Pizzi, S., Rosati, F. and Venturelli, A. (2021a), "The determinants of business contribution to the 2030 agenda: introducing the SDG reporting score", *Business Strategy and the Environment*, Vol. 30 No. 1, pp. 404-421, doi: [10.1002/bse.2628](https://doi.org/10.1002/bse.2628).



- Pizzi, S., Venturelli, A. and Caputo, F. (2021b), "The "comply-or-explain" principle in directive 95/2014/EU. A rhetorical analysis of Italian PIEs", *Sustainability Accounting, Management and Policy Journal*, Vol. 12 No. 1, pp. 30-50, doi: [10.1108/sampj-07-2019-0254](https://doi.org/10.1108/sampj-07-2019-0254).
- Pizzi, S., Principale, S., Fasiello, R. and Imperiale, F. (2023), "The institutionalisation of social and environmental accounting practices in Europe", *Journal of Applied Accounting Research*, Vol. 24 No. 5, pp. 816-838, doi: [10.1108/jaar-07-2022-0190](https://doi.org/10.1108/jaar-07-2022-0190).
- Pizzi, S., Caputo, F. and de Nuccio, E. (2024), "Do sustainability reporting standards affect analysts' forecast accuracy?", *Sustainability Accounting, Management and Policy Journal*, Vol. 15 No. 2, pp. 330-354, doi: [10.1108/sampj-04-2023-0227](https://doi.org/10.1108/sampj-04-2023-0227).
- Posadas, S.C., Ruiz-Blanco, S., Fernandez-Feijoo, B. and Tarquinio, L. (2023), "Institutional isomorphism under the test of non-financial reporting directive. Evidence from Italy and Spain", *Meditari Accountancy Research*, Vol. 31 No. 7, pp. 26-48, doi: [10.1108/medar-02-2022-1606](https://doi.org/10.1108/medar-02-2022-1606).
- Price Waterhouse Coopers (PwC) (2019), "Creating a strategy for a better world how the sustainable development goals can provide the framework for business to deliver progress on our global challenges", available at: <https://www.pwc.com/gx/en/sustainability/SDG/sdg-2019.pdf> (accessed 15 March 2023).
- Schiemann, F. and Tietmeyer, R. (2022), "ESG controversies, ESG disclosure and analyst forecast accuracy", *International Review of Financial Analysis*, Vol. 84, 102373, doi: [10.1016/j.irfa.2022.102373](https://doi.org/10.1016/j.irfa.2022.102373).
- Schramade, W. (2017), "Investing in the UN sustainable development goals: opportunities for companies and investors", *Journal of Applied Corporate Finance*, Vol. 29 No. 2, pp. 87-99, doi: [10.1111/jacf.12236](https://doi.org/10.1111/jacf.12236).
- Shan, Y.G., Yang, J.W., Zhang, J. and Chang, M. (2023), "Analyst forecast quality and corporate social responsibility: the mediation effect of corporate governance", *Meditari Accountancy Research*, Vol. 31 No. 3, pp. 675-705, doi: [10.1108/medar-02-2021-1200](https://doi.org/10.1108/medar-02-2021-1200).
- Silva, S. (2021), "Corporate contributions to the sustainable development goals: an empirical analysis informed by legitimacy theory", *Journal of Cleaner Production*, Vol. 292, 125962, doi: [10.1016/j.jclepro.2021.125962](https://doi.org/10.1016/j.jclepro.2021.125962).
- Tsalis, T.A., Malamateniou, K.E., Koulouriotis, D. and Nikolaou, I.E. (2020), "New challenges for corporate sustainability reporting: united Nations' 2030 Agenda for sustainable development and the sustainable development goals", *Corporate Social Responsibility and Environmental Management*, Vol. 27 No. 4, pp. 1617-1629, doi: [10.1002/csr.1910](https://doi.org/10.1002/csr.1910).
- UNDP (2021), "SDG impact standards enterprises. Integrating impact management into enterprises' decision-making to optimize their contribution to sustainable development and the SDGs. July, 2021", available at: <https://sdgimpact.undp.org/assets/SDG-Impact-Standards-for-Enterprises-Version1-EN.pdf> (accessed 17 May 2023).
- United Nations (2015), "Transforming our world: the 2030 agenda for sustainable development. Resolution adopted by the general assembly", available at: <https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981>.
- Van der Waal, J.W. and Thijssens, T. (2020), "Corporate involvement in sustainable development goals: exploring the territory", *Journal of Cleaner Production*, Vol. 252, 119625, doi: [10.1016/j.jclepro.2019.119625](https://doi.org/10.1016/j.jclepro.2019.119625).
- Vanstraelen, A., Zarzeski, M.T. and Robb, S.W. (2003), "Corporate nonfinancial disclosure practices and financial analyst forecast ability across three European countries", *Journal of International Financial Management and Accounting*, Vol. 14 No. 3, pp. 249-278, doi: [10.1111/1467-646x.00098](https://doi.org/10.1111/1467-646x.00098).
- Venturelli, A., Fasan, M. and Pizzi, S. (2022), "Guest editorial Rethinking non-financial reporting in Europe: challenges and opportunities in revising directive 2014/95/EU", *Journal of Applied Accounting Research*, Vol. 23 No. 1, pp. 1-7.
- Verrecchia, R.E. (1983), "Discretionary disclosure", *Journal of Accounting and Economics*, Vol. 5, pp. 179-194, doi: [10.1016/0165-4101\(83\)90011-3](https://doi.org/10.1016/0165-4101(83)90011-3).

- Wang, S., Wei, C. and Han, L. (2017), "Do business relationships affect the accuracy of analyst earnings forecasts? Evidence from China", *Asia-Pacific Journal of Financial Studies*, Vol. 46 No. 1, pp. 155-177, doi: [10.1111/ajfs.12164](https://doi.org/10.1111/ajfs.12164).
- Yu, M. (2010), "Analyst forecast properties, analyst following and governance disclosures: a global perspective", *Journal of International Accounting, Auditing and Taxation*, Vol. 19 No. 1, pp. 1-15, doi: [10.1016/j.intaccudtax.2009.12.001](https://doi.org/10.1016/j.intaccudtax.2009.12.001).
- Zampone, G., Nicolò, G., Sannino, G. and De Iorio, S. (2022), "Gender diversity and SDG disclosure: the mediating role of the sustainability committee", *Journal of Applied Accounting Research*, Vol. 25 No. 1, pp. 171-193, doi: [10.1108/jaar-06-2022-0151](https://doi.org/10.1108/jaar-06-2022-0151).
- Zhou, S., Simnett, R. and Green, W. (2017), "Does integrated reporting matter to the capital market?", *Abacus*, Vol. 53 No. 1, pp. 94-132, doi: [10.1111/abac.12104](https://doi.org/10.1111/abac.12104).
- Zuckerman, E. (1999), "The categorical imperative: securities analysts and the illegitimacy discount", *American Journal of Sociology*, Vol. 104 No. 5, pp. 1398-1438.

### Further reading

- Gu, Z., Li, Z. and Yang, Y.G. (2013), "Monitors or predators: the influence of institutional investors on sell-side analysts", *The Accounting Review*, Vol. 88 No. 1, pp. 137-169, doi: [10.2308/accr-50263](https://doi.org/10.2308/accr-50263).

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