

# Integrated reporting and the Corporate Sustainability Reporting Directive: bridging the gap or growing apart?

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## Abstract

**Purpose** – This study aims to examine, through the lens of legitimacy theory, the compliance of integrated reports – prepared according to the framework prior to the introduction of the Corporate Sustainability Reporting Directive (CSRD) – with the European Sustainability Reporting Standards (ESRS). Additionally, it seeks to assess the impact of firm size and industry environmental sensitivity on this level of compliance.

**Design/methodology/approach** – This study employs manual content analysis to evaluate the compliance of integrated reports with the ESRS disclosure requirements. Using a sample of 166 European Union companies that published an integrated report in 2023, compliance levels are assessed by systematically coding the presence or absence of the required information in each report. Additionally, a linear regression model is used to examine the impact of firm size and industry environmental sensitivity on the level of compliance.

**Findings** – The results reveal a relatively low average level of compliance with the ESRS. They also demonstrate a positive effect of firm size and industry environmental sensitivity on compliance levels. Thus, larger companies and those operating in environmentally sensitive industries are more likely to align their integrated reports with the ESRS disclosure requirements.

**Originality/value** – This study makes a significant contribution to the literature by addressing the gap between current reporting practices based on the <IR> framework and the more detailed ESRS requirements introduced by the CSRD. It provides some of the first empirical evidence on integrated reporting compliance with the ESRS and expands knowledge of the factors influencing this compliance level. Furthermore, it extends the application of legitimacy theory, framing compliance with ESRS as a strategic response to evolving regulatory expectations.

**Keywords** Integrated reporting, Corporate sustainability reporting directive, CSRD, Legitimacy theory

**Paper type** Research paper

## 1. Introduction

In recent years, the global response to environmental challenges has gained unprecedented momentum. The Paris Agreement on Climate Change and the adoption of the 2030 Agenda



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and the Sustainable Development Goals by the United Nations General Assembly in 2015 marked a pivotal moment in raising social awareness of the challenges related to climate change and sustainable development. These milestones were followed by several initiatives at the European level, such as the 2018 Action Plan on Sustainable Finance (European Commission, 2018), the European Green Deal of 2019 (European Commission, 2019a), and the European Climate Law of 2021 (European Parliament and Council of the European Union, 2021).

In line with these advancements, European sustainability disclosure regulations are also evolving (Hristov and Searcy, 2025; Hummel and Jobst, 2024). The foundation for a European mandate on sustainability disclosure was laid by the Non-Financial Reporting Directive (NFRD) (European Parliament and Council of the European Union, 2014), adopted by the European Union in 2014. This Directive, effective from the 2017 financial year, required public interest entities within the European Union, meeting specific size and financial criteria, to disclose non-financial information, including diversity data. Further European regulatory actions followed the NFRD, such as the Sustainable Finance Disclosure Regulation (European Parliament and Council of the European Union, 2019), which mandates financial market participants and advisors to report on sustainability risks, the Taxonomy Regulation (European Parliament and Council of the European Union, 2020), which establishes a classification system for sustainable economic activities, and the Capital Requirements Regulation, which integrates disclosure standards related to climate change risks (European Parliament and Council of the European Union, 2019).

A significant turning point in sustainability disclosure came with the adoption of the Corporate Sustainability Reporting Directive (CSRD) in November 2022 (European Parliament and Council of the European Union, 2022), set to replace the NFRD from the 2024 financial year onwards. The CSRD embeds sustainability into business models (Fornasari and Traversi, 2024; Hristov and Searcy, 2025) and significantly increases the number of companies required to report on sustainability, with estimates suggesting that approximately 50,000 companies across the European Union will be impacted by 2025 (Hummel and Jobst, 2024). Moreover, the CSRD introduces more comprehensive and detailed reporting requirements, such as the principle of double materiality, the integration of sustainability information into management reports, mandatory external assurance, digital tagging of reported data, and, crucially, the obligation to report in line with the European Sustainability Reporting Standards (ESRS). The ESRS encompass a wide range of environmental, social, and governance issues, including climate change, biodiversity, and human rights. They also reflect ongoing discussions with the International Sustainability Standards Board (ISSB) and the Global Reporting Initiative (GRI) to ensure strong alignment and interoperability between European Union and global reporting standards.

The requirement to adhere to the new standards presents significant challenges for companies, particularly since the European Commission only adopted the delegated act on the first set of ESRS in July 2023 (European Commission, 2023). The key challenge lies in the complexity of the ESRS, which demand both quantitative and qualitative data across a wide array of sustainability topics, including strategy, governance, materiality assessments, and performance metrics. In response, companies must revisit their processes for gathering and reporting information to comply with the stringent requirements of both the CSRD and the ESRS.

These challenges have also caught the attention of scholars, who have analyzed European regulatory developments in sustainability disclosure (Hummel and Jobst, 2024), conducted comparisons between various standards (Makarenko and Makarenko, 2023), and offered valuable guidelines and frameworks for implementing the requirements of the CSRD (Hristov and Searcy, 2025). However, there remains a noticeable gap in research assessing the alignment of disclosure documents prepared by companies before the introduction of the CSRD with the ESRS. Addressing this gap is crucial for understanding the extent to which prior reporting practices align with the evolving regulatory landscape and for identifying areas where companies may face challenges in adapting to the new requirements.

This study aims to fill this important gap by analyzing, under the lens of legitimacy theory, the compliance between the content of integrated reports, prepared in accordance with the <IR> framework prior to the introduction of the CSRD, and the ESRS. In addition, this study seeks to assess the impact of firm size and industry environmental sensitivity on this level of compliance. The focus on integrated reports is motivated by their unique ability to offer a holistic view of a company's performance, combining financial and non-financial information in a single framework (Vitolla *et al.*, 2020). This reporting approach not only aligns with the principles of integrated thinking but also inherently supports the integration of sustainability considerations into corporate decision-making (Vitolla *et al.*, 2019). Furthermore, as noted by Setia *et al.* (2024), although the <IR> framework emphasizes financial materiality, companies often disclose information from an impact materiality perspective as well, demonstrating its capacity to address both financial and social concerns.

This study contributes to the academic literature by addressing the limited research on the CSRD and examining the compliance gap between reporting practices under the <IR> framework and the stricter ESRS requirements. It provides empirical evidence on the effectiveness of integrated reporting in meeting these enhanced regulatory demands while exploring the influence of firm size and industry environmental sensitivity on compliance levels. Additionally, this study broadens the application of legitimacy theory, framing compliance as part of corporate efforts to maintain legitimacy amid changing regulatory and societal expectations.

The remainder of this work is organized as follows: Section 2 provides the background of the study. Section 3 introduces the theoretical framework and develops the research hypotheses. Section 4 outlines the research methodology. Section 5 presents and discusses the results. Finally, Section 6 offers the conclusions.

## 2. Background

In September 2014, the European Union enacted the NFRD (European Parliament and Council of the European Union, 2014), requiring large public-interest companies (including group parent companies) with more than 500 employees (on a consolidated basis for groups), to report on non-financial matters and diversity. The objective of the NFRD was to enhance the consistency, relevance, and comparability of non-financial and diversity information reported by these companies and groups, and to support the transition toward a sustainable global economy (European Parliament and Council of the European Union, 2014).

The NFRD expanded the scope of the management report by requiring the inclusion of a non-financial statement covering, at minimum, information on environmental matters, social and employee-related issues, respect for human rights, and the fight against active and passive corruption. It also broadened the scope of the corporate governance statement for European Union companies listed on regulated markets, making it mandatory to disclose diversity-related information (European Parliament and Council of the European Union, 2014).

The NFRD entered into force for financial years beginning on January 1, 2017, or during the 2017 calendar year (European Parliament and Council of the European Union, 2014). Moreover, each Member State was required to transpose the Directive into its national legislation, with Article 4 granting some discretion in implementation (European Parliament and Council of the European Union, 2014). This resulted in significant differences in how the Directive was adopted by Member States. In subsequent years, the European Commission issued further non-binding guidelines (European Commission, 2017, 2019b), which also elaborated on the principle of double materiality, anticipating the need for companies to consider both financial and impact materiality.

The NFRD has been repeatedly criticized for its shortcomings in terms of comparability, consistency, and reliability of the required information, as well as for the limited number of companies it covers (La Torre *et al.*, 2018; Hummel and Jobst, 2024). These limitations underscored the need for a substantial revision of the Directive, leading to the European

Union's proposal of a new CSRD in April 2021 (European Commission, 2021), which was finalized and published in December 2022 (European Parliament and Council of the European Union, 2022; Pizzi and Coronella, 2024; Zampone *et al.*, 2024).

The CSRD introduces a phased implementation for different categories of companies within the European Union. Starting in 2025 (for the 2024 financial year), it will apply to companies already subject to the NFRD, including listed companies, banks, and insurance firms that have had an average of more than 500 employees during the financial year and have exceeded at least one of the following thresholds by the balance sheet date: €20 million in assets or €40 million in net revenue.

From 2026 (for the 2025 financial year), the Directive will extend to large unlisted companies that, by the balance sheet date (including on a consolidated basis), have exceeded at least two of the following criteria: more than 250 employees, €20 million in assets, or €40 million in net revenue.

In 2027 (for the 2026 financial year), the scope will further expand to cover listed small and medium-sized enterprises (SMEs), small credit institutions, and captive insurance companies. However, SMEs will have the option to delay compliance through an opt-out mechanism for an additional two years – until January 2029 (for the 2028 financial year) – provided they disclose the reasons for opting out.

Finally, from 2029 (for the 2028 financial year), the Directive will also apply to non-European companies operating within the European Union. Specifically, it will cover companies and branches whose ultimate parent company is established outside the European Union and has generated more than €150 million in net revenue within the European Union in each of the previous two consecutive financial years, if at least one of the following conditions is met: a subsidiary meets the size thresholds of the CSRD, or a branch has generated more than €40 million in net revenue in the preceding financial year.

The implementation of these criteria led to a substantial increase in the number of companies subject to the requirements compared to the NFRD. Other significant updates, which will be explored in detail later, include the expansion of reporting obligations to entities throughout the value chain, a stronger emphasis on double materiality, new guidelines on the content and location of disclosures, the use of digital tagging, and the introduction of mandatory assurance. Moreover, an important development is the European Commission's delegation of the task of developing the reporting standards to the European Financial Reporting Advisory Group (EFRAG).

In light of these developments, companies will need to expand their reporting beyond the traditional scope of financial statements, incorporating information on material impacts, risks, and opportunities throughout the entire value chain – both upstream and downstream. In cases where information gaps related to the value chain arise during the first three years of implementation, companies will be required to disclose their efforts, the reasons for the gaps, and their plans to obtain the missing data.

Additionally, companies must report sustainability information from two perspectives: the inside-out approach, which examines the impact of their activities on people and the environment, and the outside-in approach, which considers how sustainability factors affect the company and its performance. They will need to disclose relevant information from both perspectives, as well as information considered significant from either one alone.

The CSRD requires companies to disclose a comprehensive range of detailed information. Specifically, they must provide a description of their business model and corporate strategy, highlighting how they manage sustainability-related risks and opportunities. Companies must also explain how their business model and strategy take into account the interests of key stakeholders and describe the implementation of their sustainability strategy. Additionally, they are required to report on their environmental, social, and governance (ESG) objectives and the progress made toward achieving them. A detailed explanation of the role played by the company's governing bodies in these areas is also required. Information on the existence of incentive systems linked to sustainability issues must be disclosed, along with a description of

the company's sustainability policies. Companies are also expected to outline their sustainability due diligence processes, including the identification and monitoring of the main negative impacts related to their operations and value chain, as well as the actions taken to prevent and mitigate these impacts. Furthermore, they must describe the key sustainability-related risks and the strategies used to manage them, together with details on the intangible resources that contribute to long-term value creation. Finally, companies must include relevant indicators for all the aforementioned information.

Regarding location, companies falling within the scope of the CSRD are required to include sustainability information in a clearly identifiable section of the Management Report. This information must be linked to financial matters and disclosed simultaneously. As a result, the publication of a separate sustainability report will no longer be permitted. The CSRD also mandates the digitalization of sustainability information, requiring companies to make such disclosures accessible in digital format.

Additionally, the CSRD requires limited assurance for sustainability information, to be provided by an accredited statutory auditor or audit firm. It also anticipates a potential shift toward reasonable assurance in the future. Lastly, the CSRD mandates the adoption of a single reporting standard to ensure greater comparability between disclosures. Companies will therefore be required to apply the ESRS, developed by the EFRAG. In this regard, the European Commission adopted the first set of ESRS in July 2023 ([European Commission, 2023](#)).

### 3. Theory and hypotheses development

Legitimacy theory is widely used in accounting research to explain why organizations disclose specific types of information and engage in socially accepted behaviors ([Chen and Roberts, 2010](#); [Nicolò \*et al.\*, 2021](#); [Manes-Rossi and Nicolò, 2022](#)). This theory is based on the idea that companies must align with societal norms and expectations to maintain their legitimacy and retain stakeholder support ([Patten, 1992](#)). To uphold their social contract, companies strive to ensure that stakeholders perceive their activities as legitimate ([Suchman, 1995](#); [O'Donovan, 2002](#)).

[Suchman \(1995\)](#) introduced two broad strands of legitimacy theory: the strategic and institutional approaches. This study integrates both perspectives, building on the idea of viewing "strategic and institutional aspects of legitimacy theory as two sides of the same coin" ([Luft Mobus, 2005](#), p. 511). From the strategic perspective ([Dowling and Pfeffer, 1975](#); [Pfeffer and Salancik, 1978](#); [Suchman, 1995](#)), legitimacy is regarded as an operational resource that organizations actively manage to achieve their goals. Sustainability disclosure, in this sense, serves as a tool to influence stakeholder perceptions regarding the social and environmental impact of corporate activities ([Lindblom, 1994](#); [Gray \*et al.\*, 1995](#); [Cho, 2009](#); [Raimo \*et al.\*, 2021](#)). Such disclosure is made in response to environmental pressures and aims to legitimize the company's actions and continued existence ([Guthrie and Parker, 1989](#)). In line with this perspective, certain companies – such as those operating in environmentally sensitive sectors, those with poorer environmental performance, or those undergoing corporate crises – are likely to engage in more extensive sustainability disclosure ([Deegan and Gordon, 1996](#); [Deegan and Rankin, 1996](#); [Deegan \*et al.\*, 2000](#); [Patten, 1992, 2002](#); [Cho and Patten, 2007](#); [Cho, 2009](#)). These firms strategically employ sustainability disclosure to manage legitimacy by responding to increased scrutiny, compensating for negative performance, or restoring their image after reputational damage – providing additional information to mitigate potential legitimacy threats ([Raimo \*et al.\*, 2021](#)).

In contrast, the institutional perspective views legitimacy as a set of socially constructed beliefs that reflect how external institutions shape and permeate organizations at all levels ([Suchman, 1995](#)). Unlike the strategic perspective, the institutional view assumes that legitimacy cannot be directly influenced by the organization itself but is instead the result of

adaptation to the broader institutional field (DiMaggio and Powell, 1983). In this regard, Meyer and Rowan (1977) and DiMaggio and Powell (1983) argue that corporate dynamics are shaped by social norms, beliefs, rituals, and symbols, and that companies conform to these institutionalized expectations to ensure organizational legitimacy and survival. This process is driven by coercive, normative, and mimetic pressures, which encourage companies to adopt actions and practices aligned with recognized institutional patterns (DiMaggio and Powell, 1983). Coercive pressures arise from regulatory requirements and societal expectations, compelling companies to adjust their behavior to comply with external demands (DiMaggio and Powell, 1983; Kılıç *et al.*, 2021). Normative pressures stem from professional norms and standards that shape expectations within a specific field (DiMaggio and Powell, 1983; Kılıç *et al.*, 2021), leading companies to align with industry best practices and ethical principles. Mimetic pressures occur when companies imitate the practices of successful competitors, especially in context of uncertainty (DiMaggio and Powell, 1983; Kılıç *et al.*, 2021). The institutional view of legitimacy emphasizes compliance with legal regulations as a key driver of organizational legitimacy. Regulations are fundamental components of institutions (Ruef and Scott, 1998) and can be understood as providing the explicit terms of the social contract (Gray *et al.*, 1996). Legal requirements related to sustainability disclosure represent socially constructed systems of values and beliefs. Conformance with these regulations enables companies to manage their legitimacy by demonstrating alignment with societal norms (Meyer and Rowan, 1977; Ruef and Scott, 1998). Even in situations where companies face specific legitimacy crises, compliance with legal obligations remains a vital strategy for restoring or maintaining legitimacy (Chelli *et al.*, 2014).

The adoption of the NFRD in the European Union serves as a key example of coercive pressure exerted on companies subject to the Directive (Pedersen *et al.*, 2013; Nicolò *et al.*, 2020). By requiring large companies to disclose non-financial information, the NFRD aligned with growing societal expectations for corporate transparency (Traxler *et al.*, 2023). Companies viewed these obligations as essential for maintaining legitimacy, with non-compliance posing risks of sanctions and reputational harm (Chelli *et al.*, 2014; Traxler *et al.*, 2023). The Directive significantly shaped corporate approaches to sustainability disclosure (Tiron-Tudor *et al.*, 2019; Aureli *et al.*, 2020; Carungu *et al.*, 2021), leading to overall improvements in non-financial reporting (Traxler *et al.*, 2023). The introduction of the CSRD is expected to further intensify coercive pressures, compelling companies to align more closely with evolving legal and societal expectations regarding transparency in sustainability performance. Within this framework, compliance to the ESRS can be viewed as a direct response to such pressures, even in anticipation of the mandatory requirements introduced by the CSRD. The obligation to adhere to these new standards creates a strong incentive for companies to proactively align their disclosure practices, thereby meeting regulatory expectations and safeguarding their legitimacy in the eyes of regulators, stakeholders, and society at large. Consequently, as a result of these coercive pressures, some companies may exhibit higher levels of alignment between their integrated reports and the ESRS.

However, the extent of this early compliance may vary across companies, depending on specific organizational characteristics. This study, by integrating both institutional and strategic perspectives, investigates how factors such as company size and industry environmental sensitivity shape corporate responses to these coercive pressures. This approach highlights the dynamic interaction between external regulatory demands and internal strategic behavior.

According to legitimacy theory, larger companies are more visible to the public and, as a result, face greater pressure to demonstrate social and environmental responsibility (Cowen *et al.*, 1987). Due to their size, these companies are subject to heightened scrutiny from a broader range of stakeholders (Inchausti, 1997), many of whom may be particularly interested in the organization's sustainability practices (Patten, 1991, 1992; Branco and

Rodrigues, 2008). This increased visibility and stakeholder attention create stronger incentives for larger firms to manage their legitimacy by providing extensive and transparent disclosures (Cowen *et al.*, 1987; Patten, 1991, 1992; Alsaeed, 2006; Nicolò *et al.*, 2022a). In this context, integrated reports aligned with the ESRS can serve as a strategic tool for legitimacy management. Larger companies are motivated to comply with the detailed ESRS requirements as part of their efforts to legitimize their operations. By demonstrating transparency and a proactive commitment to sustainability, these firms not only meet external expectations but also mitigate the risks associated with public and regulatory scrutiny. Anticipating a future regulatory obligation can also act as a signal of responsibility and leadership, allowing larger companies to address current legitimacy concerns while positioning themselves as forward-thinking and prepared to meet evolving regulatory demands. In doing so, they can further strengthen their legitimacy and reputation in the eyes of both regulators and the broader public. Therefore, based on the theoretical arguments outlined above and the assumptions of legitimacy theory, the following hypothesis is proposed:

- H1.* Larger companies are more likely to exhibit higher levels of compliance with the ESRS in their integrated reports.

According to legitimacy theory, companies operating in environmentally sensitive industries – subject to heightened scrutiny from environmental groups, regulators, and the public – face greater external pressures to justify their sustainability practices and impacts (Patten, 1991, 1992; Deegan and Gordon, 1996; Liu and Anbumozhi, 2009). The more attention an industry receives from environmental lobby groups and concerned stakeholders, the greater the need for companies within that industry to manage their legitimacy by providing extensive and transparent disclosures (Deegan and Gordon, 1996; Nicolò *et al.*, 2022a). In this context, integrated reports aligned with the ESRS can serve as a strategic tool for legitimacy management. Companies in environmentally sensitive sectors are motivated to comply with the detailed ESRS requirements as part of their efforts to legitimize their operations. By demonstrating transparency and a proactive commitment to sustainability, these firms can mitigate legitimacy threats and enhance their reputation among stakeholders. Anticipating a future regulatory obligation can also act as a signal of responsibility and leadership, allowing companies in environmentally sensitive sectors to address current legitimacy concerns while positioning themselves as forward-thinking and prepared to meet evolving regulatory demands. In doing so, they can further strengthen their legitimacy and reputation in the eyes of both regulators and the broader public. Therefore, based on the theoretical arguments outlined above and the assumptions of legitimacy theory, the following hypothesis is proposed:

- H2.* Companies operating in environmentally sensitive industries are more likely to exhibit higher levels of compliance with the ESRS in their integrated reports.

#### 4. Research methodology

The sample of this study consists of 166 European Union companies that published an integrated report in 2023. The identification process began with the “Reporters” section of the Integrated Reporting website (available at: <https://examples.integratedreporting.ifrs.org/ir-reporters/>), which lists publicly listed companies whose most recent reports meet both of the following criteria: (1) the report explicitly references the “Integrated Reporting Framework” (or “IIRC”), and (2) the report includes a “value creation” model or references to “capitals”. It is important to note that no quality assessment was conducted when compiling this list of reporters. From the complete list, companies were excluded if they had not published their report in English or if data for the independent and control variables were not available in the Refinitiv Eikon or Orbis databases. This process resulted in a final sample of 166 companies.

The dependent variable of this study is the *CSRD\_compliance\_level*, which reflects the degree of alignment of integrated reports with the ESRS. This variable was measured using content analysis, defined as “a research technique for the objective, systematic, and quantitative description of the manifest content of communication” (Berelson, 1952, p. 18). In other words, content analysis enables the coding of texts, documents, and communications by identifying recurring themes and assessing the frequency and context of the information presented (Krippendorff, 1980). Content analysis is widely used in academic research (Vitolla et al., 2020; Raimo et al., 2022; Nicolò et al., 2025) due to its efficiency and practicality compared to other techniques such as surveys or interviews (Schiuma et al., 2024). In particular, this study employed manual content analysis, chosen over automated techniques to ensure greater accuracy and contextual understanding of the information (Garzoni et al., 2024). Manual content analysis enables a more accurate interpretation of disclosures, capturing language variations and synonyms often missed by automated tools (L’Abate et al., 2024a). The coding and aggregation of data were performed using Excel spreadsheets, which facilitated the systematic organization of information and supported efficient data management throughout the research process.

The compliance level was assessed by identifying whether the information required by the ESRS was disclosed within the integrated reports, as outlined in Table 1. Specifically, the analysis focused exclusively on topical standards, excluding the cross-cutting standards (General Requirements and General Disclosures). As a result, the assessment included five environmental standards (Climate Change; Pollution; Water and Marine Resources; Biodiversity and Ecosystems; Resource Use and Circular Economy), four social standards (Own Workforce; Workers in the Value Chain; Affected Communities; Consumers and End-Users), and one governance standard (Business Conduct). For each of these standards, only the disclosure requirements were evaluated, as the datapoints were deemed too detailed for the scope of this study. In total, 88 disclosure requirements from 10 standards were examined. The presence of the required information in each report was coded as 1, and its absence as 0. Accordingly, the dependent variable ranges from 0 to 88, reflecting the overall level of compliance with the ESRS.

The independent variables of this study are *Firm\_size* and *Industry\_environmental\_sensitivity*. *Firm\_size* was measured as the natural logarithm of total assets (Branco and Rodrigues, 2008; Zamponi et al., 2024). *Industry\_environmental\_sensitivity* was measured using a dummy variable equal to 1 for companies operating in environmentally sensitive industries, and 0 otherwise (Branco and Rodrigues, 2008; Nicolò et al., 2022a).

A set of control variables was included to improve the robustness of the econometric analysis. Specifically, the following control variables were considered: *Firm\_profitability*, *Firm\_financial\_leverage*, *Board\_size*, *Board\_gender\_diversity*, *CSR\_committee*, and *Firm\_age*. *Firm\_profitability* was measured by return on equity, calculated as the ratio of net income to shareholders’ equity (Nicolò et al., 2022b). *Firm\_financial\_leverage* was measured as the ratio of total debt to total equity (Andrade et al., 2014). *Board\_size* was computed as the total number of members on the board of directors (Vitolla et al., 2020; Zamponi et al., 2024), while *Board\_gender\_diversity* was measured as the percentage of female members on the board (Vitolla et al., 2020; Zamponi et al., 2024). *CSR\_committee* was measured using a dummy variable equal to 1 if the company had a dedicated corporate social responsibility committee, and 0 otherwise (L’Abate et al., 2024b). Finally, *Firm\_age* was calculated as the natural logarithm of the number of years since the company’s founding (Bansal, 2021).

This study employed a linear regression model to test the research hypotheses. The equation below outlines the proposed analytical model:

**Table 1.** ESRS

E1	<i>Climate change</i>
ESRS 2 GOV-3	Integration of sustainability related performance in incentive schemes
E1-1	Transition plan for climate change mitigation
ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model
ESRS 2 IRO-1	Description of the processes to identify and assess material climate-related impacts, risks and opportunities
E1-2	Policies related to climate change mitigation and adaptation
E1-3	Actions and resources in relation to climate change policies
E1-4	Targets related to climate change mitigation and adaptation
E1-5	Energy consumption and mix
E1-6	Gross Scopes 1,2,3 and Total GHG emissions
E1-7	GHG removals and GHG mitigation projects financed through carbon credits
E1-8	Internal carbon pricing
E1-9	Anticipated financial effects from material physical and transition risks and potential climate-related opportunities
E2	<i>Pollution</i>
ESRS 2 IRO-1	Description of the processes to identify and assess material pollution-related impacts, risks and opportunities
E2-1	Policies related to pollution
E2-2	Actions and resources related to pollution
E2-3	Targets related to pollution
E2-4	Pollution of air, water and soil
E2-5	Substances of concern and substances of high concern
E2-6	Anticipated financial effects from pollution-related impacts, risks and opportunities
E3	<i>Water and marine resources</i>
ESRS 2 IRO-1	Description of the processes to identify and assess material water and marine resources-related impacts, risks and opportunities
E3-1	Policies related to water and marine resources
E3-2	Actions and resources related to water and marine resources
E3-3	Targets related to water and marine resources
E3-4	Water consumption
E3-5	Anticipated financial effects from water and marine resources-related impacts, risks and opportunities
E4	<i>Biodiversity and ecosystems</i>
E4-1	Transition plan and consideration of biodiversity and ecosystems in strategy and business model
ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model
ESRS 2 IRO-1	Description of processes to identify and assess material biodiversity and ecosystem-related impacts, risks and opportunities
E4-2	Policies related to biodiversity and ecosystems
E4-3	Actions and resources related to biodiversity and ecosystems
E4-4	Targets related to biodiversity and ecosystems
E4-5	Impact metrics related to biodiversity and ecosystems change
E4-6	Anticipated financial effects from biodiversity and ecosystem-related risks and opportunities
E5	<i>Resource use and circular economy</i>
ESRS 2 IRO-1	Description of the processes to identify and assess material resource use and circular economy-related impacts, risks and opportunities
E5-1	Policies related to resource use and circular economy
E5-2	Actions and resources related to resource use and circular economy
E5-3	Targets related to resource use and circular economy
E5-4	Resource inflows
E5-5	Resource outflows
E5-6	Anticipated financial effects from resource use and circular economy-related impacts, risks and opportunities

*(continued)*

**Table 1.** Continued

S1	<i>Own workforce</i>
ESRS 2 SBM-2	Interests and views of stakeholders
ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model
S1-1	Policies related to own workforce
S1-2	Processes for engaging with own workforce and workers' representatives about impacts
S1-3	Processes to remediate negative impacts and channels for own workforce to raise concerns
S1-4	Taking action on material impacts on own workforce, and approaches to managing material risks and pursuing material opportunities related to own workforce, and effectiveness of those actions
S1-5	Targets related to managing material negative impacts, advancing positive impacts, and managing material risks and opportunities
S1-6	Characteristics of the undertaking's employees
S1-7	Characteristics of non-employees in the undertaking's own workforce
S1-8	Collective bargaining coverage and social dialogue
S1-9	Diversity metrics
S1-10	Adequate wages
S1-11	Social protection
S1-12	Persons with disabilities
S1-13	Training and skills development metrics
S1-14	Health and safety metrics
S1-15	Work-life balance metrics
S1-16	Remuneration metrics (pay gap and total remuneration)
S1-17	Incidents, complaints and severe human rights impacts
S2	<i>Workers in the value chain</i>
ESRS 2 SBM-2	Interests and views of stakeholders
ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model
S2-1	Policies related to value chain workers
S2-2	Processes for engaging with value chain workers about impacts
S2-3	Processes to remediate negative impacts and channels for value chain workers to raise concerns
S2-4	Taking action on material impacts on value chain workers, and approaches to managing material risks and pursuing material opportunities related to value chain workers, and effectiveness of those action
S2-5	Targets related to managing material negative impacts, advancing positive impacts, and managing material risks and opportunities
S3	<i>Affected communities</i>
ESRS 2 SBM-2	Interests and views of stakeholders
ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model
S3-1	Policies related to affected communities
S3-2	Processes for engaging with affected communities about impacts
S3-3	Processes to remediate negative impacts and channels for affected communities to raise concerns
S3-4	Taking action on material impacts on affected communities, and approaches to mitigating material risks and pursuing material opportunities related to affected communities, and effectiveness of those actions
S3-5	Targets related to managing material negative impacts, advancing positive impacts, and managing material risks and opportunities
S4	<i>Consumers and end-users</i>
ESRS 2 SBM-2	Interests and views of stakeholders
ESRS 2 SBM-3	Material impacts, risks and opportunities and their interaction with strategy and business model
S4-1	Policies related to consumers and end-users
S4-2	Processes for engaging with consumers and end-users about impacts

(continued)

Table 1. Continued

S4-3	Processes to remediate negative impacts and channels for consumers and end-users to raise concerns
S4-4	Taking action on material impacts on consumers and end-users, and approaches to managing material risks and pursuing material opportunities related to consumers and end-users, and effectiveness of those actions
S4-5	Targets related to managing material negative impacts, advancing positive impacts, and managing material risks and opportunities
G1	<i>Business conduct</i>
ESRS 2 GOV-1	The role of the administrative, supervisory and management bodies
ESRS 2 IRO-1	Description of the processes to identify and assess material impacts, risks and opportunities
G1-1	Business conduct policies and corporate culture
G1-2	Management of relationships with suppliers
G1-3	Prevention and detection of corruption and bribery
G1-4	Incidents of corruption or bribery
G1-5	Political influence and lobbying activities
G1-6	Payment practices

**Source(s):** Own elaboration based on information from the EFRAG website, available at: <https://www.efrag.org/en/sustainability-reporting/esrs/sector-agnostic/first-set-of-draft-esrs>

$$\begin{aligned}
 CSR_{D\_compliance\_level}_i = & \beta_0 + \beta_1 Firm\_size_i + \beta_2 Industry\_environmental\_sensitivity_i \\
 & + \beta_3 Firm\_profitability_i + \beta_4 Firm\_financial\_leverage_i \\
 & + \beta_5 Board\_size_i + \beta_6 Board\_gender\_diversity_i \\
 & + \beta_7 CSR\_committee_i + \beta_8 Firm\_age_i + \varepsilon_i
 \end{aligned}$$

## 5. Results and discussion

Table 2 presents the descriptive statistics and the correlation analysis. The most noteworthy finding is the mean value of *CSR<sub>D</sub> compliance level*, which stands at 32.663. Considering that the maximum possible score for this variable is 88, this average reflects a relatively low level of compliance between the integrated reports prepared in accordance with the <IR> framework and the ESRS introduced under the CSRD. This discrepancy arises primarily because, while the <IR> framework is highly advanced in promoting an integrated approach to reporting, it was not specifically designed to meet the more detailed and prescriptive requirements set out by the ESRS. The relatively low average suggests that many companies have not yet collected or disclosed the comprehensive information necessary to achieve full compliance with the upcoming CSRD obligations. This finding underscores the significant efforts companies will need to undertake in order to align with the more stringent requirements of the CSRD. More specifically, untabulated results indicate that the governance area is where the sampled firms exhibited the highest level of compliance, followed by the environmental and social areas. Within each area, the topical standards with the highest levels of disclosure are E1 – Climate change, S1 – Own workforce, and G1 – Business conduct. Moreover, the sampled companies demonstrated stronger compliance with the following disclosure requirements: E1-3, E1-6, S1-1, S1-6, S1-9, ESRS 2 GOV-1, and G1-3. Conversely, lower levels of compliance were observed for: E2-6, E4-6, E5-6, S2-3, S3-3, S4-3, S3-5, and S4-5.

The correlation analysis reveals no evidence of multicollinearity. The coefficients are relatively low, with the highest value being 0.379, which does not raise any multicollinearity

**Table 2.** Descriptive statistics and correlation analysis

Variable	Mean	S.D	VIF	1	2	3	4	5	6	7	8	9
1 <i>CSRD_compliance_level</i>	32.663	11.002		1								
2 <i>Firm_size</i>	16.395	2.292	1.25	0.379***	1							
3 <i>Industry_environmental_sensitivity</i>	0.301	0.461	1.10	0.147*	-0.191**	1						
4 <i>Firm_profitability</i>	11.955	27.666	1.12	0.334***	0.204***	-0.018	1					
5 <i>Firm_financial_leverage</i>	1.296	1.467	1.03	0.179**	0.037	0.047	-0.105	1				
6 <i>Board_size</i>	11.265	5.195	1.25	0.321***	0.301***	0.093	0.237***	0.005	1			
7 <i>Board_gender_diversity</i>	37.071	16.642	1.09	0.171**	0.191**	-0.059	-0.064	0.035	0.152**	1		
8 <i>CSR_committee</i>	0.481	0.501	1.10	0.091	0.135*	0.051	0.037	0.078	0.225***	0.188**	1	
9 <i>Firm_age</i>	3.547	1.021	1.09	0.101	0.181**	0.117	0.097	-0.063	0.199***	0.038	0.001	1

**Note(s):** \*\*\*Significant at the 1% level; \*\*Significant at the 5% level; \*Significant at the 10% level

**Source(s):** Own elaboration

concerns. According to [Farrar and Glauber \(1967\)](#), multicollinearity becomes problematic only when the highest correlation coefficient exceeds 0.8. To further assess the presence of multicollinearity, a Variance Inflation Factor (VIF) analysis was conducted. The results show that all VIF values are well below the commonly accepted threshold of 10 ([Myers, 1990](#)), thereby confirming that multicollinearity is not an issue. Overall, the correlation matrix and VIF analysis provide consistent evidence that multicollinearity does not compromise the interpretation of the findings of this study.

[Table 3](#) presents the results of the regression analysis. The adjusted  $R^2$  is 0.327, indicating that the model has a reasonable ability to explain the variability of the dependent variable. This value suggests that the model adequately captures the main factors influencing compliance with the ESRS and provides empirical support for the research hypotheses formulated.

*Firm\_size* has a positive and significant impact on *CSRD\_compliance\_level*, supporting [H1](#) and confirming that larger companies are more likely to publish integrated reports that comply with the ESRS requirements. This result is consistent with legitimacy theory, which posits that organizations with greater public visibility – such as larger companies – are subject to stronger pressure to demonstrate social and environmental responsibility. As a result, they have greater incentives to manage their legitimacy by providing more extensive and transparent sustainability disclosures in response to heightened stakeholder scrutiny. In this context, compliance with the ESRS functions as a strategic tool for legitimacy management. Larger companies are more inclined to align with the detailed requirements of the ESRS to legitimize their operations. By demonstrating transparency and a clear commitment to sustainability, these companies not only meet stakeholder expectations but also mitigate risks associated with public and regulatory scrutiny. Moreover, anticipating future regulatory obligations – such as those introduced by the CSRD – enables larger companies to signal responsibility and leadership. Early compliance with ESRS helps address current legitimacy concerns and positions these firms as proactive and forward-thinking, further enhancing their reputation among regulators, stakeholders, and the wider public. The positive relationship between firm size and the level of compliance with the ESRS requirements aligns with prior research suggesting that larger firms are generally more likely to adopt advanced disclosure practices (e.g. [Inchausti, 1997](#); [Alsaeed, 2006](#); [Branco and Rodrigues, 2008](#); [Nicolò et al., 2022a](#)).

*Industry\_environmental\_sensitivity* has a positive and significant impact on *CSRD\_compliance\_level*, supporting [H2](#) and confirming that companies with higher environmental impact are more likely to publish integrated reports that comply with the ESRS requirements.

**Table 3.** Regression model results

Variable	Coefficient	Standard error	p-value	Sign
Cons	−0.340	5.699	0.952	
<i>Firm_size</i>	1.430	0.351	0.000	***
<i>Industry_environmental_sensitivity</i>	4.761	1.637	0.004	***
<i>Firm_profitability</i>	0.109	0.027	0.000	***
<i>Firm_financial_leverage</i>	1.383	0.497	0.006	***
<i>Board_size</i>	0.299	0.154	0.055	*
<i>Board_gender_diversity</i>	0.081	0.045	0.074	*
<i>CSR_committee</i>	−0.854	1.503	0.571	
<i>Firm_age</i>	−0.269	0.736	0.715	
N	166			
Adj. $R^2$	0.327			

**Note(s):** \*\*\*Significant at the 1% level; \*\*Significant at the 5% level; \*Significant at the 10% level

**Source(s):** Own elaboration

This result is consistent with legitimacy theory, which posits that organizations with greater public visibility – such as companies operating in environmentally sensitive industries – are subject to stronger pressure to demonstrate social and environmental responsibility. As a result, they have greater incentives to manage their legitimacy by providing more extensive and transparent sustainability disclosures in response to heightened stakeholder scrutiny. In this context, compliance with the ESRS functions as a strategic tool for legitimacy management. Companies in high-impact industries are more inclined to align with the detailed requirements of the ESRS to legitimize their operations. By demonstrating transparency and a clear commitment to sustainability, these companies not only meet stakeholder expectations but also mitigate risks associated with public and regulatory scrutiny. Moreover, anticipating future regulatory obligations – such as those introduced by the CSRD – enables companies operating in environmentally sensitive industries to signal responsibility and leadership. Early compliance with the ESRS helps address current legitimacy concerns and positions these firms as proactive and forward-thinking, further enhancing their reputation among regulators, environmental groups, and the wider public. The positive relationship between industry environmental sensitivity and the level of compliance with the ESRS requirements aligns with prior research suggesting that firms in highly polluting sectors are generally more likely to adopt advanced disclosure practices (e.g. Deegan and Gordon, 1996; Nicolò *et al.*, 2022a; Vitolla *et al.*, 2023).

## 6. Conclusions

This study aimed to examine the level of compliance of integrated reports with the ESRS. The findings revealed a relatively low average level of compliance, while also demonstrating a positive effect of firm size and industry environmental sensitivity. These results suggest that larger companies and those operating in environmentally sensitive industries are more likely to align their integrated reports with the ESRS requirements.

This study contributes to the academic literature by expanding a relatively limited body of research on the introduction of the CSRD. It investigates the gap between current reporting practices based on the <IR> framework and the more detailed requirements of the ESRS. Furthermore, it enhances the literature on integrated reporting by offering some of the first empirical evidence on the effectiveness of this disclosure tool in responding to stricter regulatory demands. Additionally, this study enriches the knowledge on the factors influencing corporate disclosure compliance, particularly in the context of the ESRS mandated by the CSRD. In this regard, it highlights the positive impact of firm size and industry environmental sensitivity. Finally, this study broadens the application of legitimacy theory by interpreting compliance with the ESRS as a corporate response aimed at maintaining legitimacy amid evolving regulatory and societal expectations.

This study offers significant practical implications for companies preparing integrated reports that fall under the scope of the CSRD. By assessing the current level of compliance, it provides valuable guidance on how organizations can improve their alignment with the ESRS. Specifically, this study identified key areas requiring greater attention, helping companies focus their efforts on achieving full compliance. These practical insights support companies in the process of aligning with the ESRS requirements by helping them identify critical gaps in their data collection and reporting processes.

This study is not without limitations. Firstly, it focuses on the disclosure requirements of the ESRS rather than on the individual datapoints, which could provide a more detailed assessment of compliance. Additionally, the content analysis covers all the topical standards, potentially overlooking the materiality principle specific to each integrated report. Another limitation is the exclusive focus on integrated reports, particularly in light of the growing convergence between the <IR> framework and IFRS Sustainability Disclosure Standards. Nevertheless, these limitations do not diminish the overall quality of this study and open up valuable opportunities for future research. Future studies could replicate this analysis by

focusing on individual datapoints to gain a more detailed understanding of the degree of compliance between integrated reports and the ESRS. Moreover, future research could examine sustainability reports prepared in accordance with GRI standards, providing further insights into the extent to which these documents comply with the ESRS disclosure requirements.

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