

RESEARCH ARTICLE OPEN ACCESS

Sustainability Disclosure and External Assurance of Reports in the Italian Agrifood Sector

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The European Union introduced the Corporate Sustainability Reporting Directive (CSRD) with the aim of aligning the “walk”—the implementation of substantive sustainability practices—and the “talk”—their representation in sustainability reporting. This study assesses whether expectations surrounding the CSRD's approval were associated with changes in the number of agrifood companies disclosing sustainability reports (SRs). Because increased institutional pressure does not necessarily coincide with higher reporting quality, and given that the CSRD introduces provisions on external assurance, we also examine the financial characteristics of firms that voluntarily obtained external assurance prior to the directive's full implementation. Focusing on the Italian agrifood industry—where the “walk”-“talk” gap is viewed as particularly salient due to *greenhushing* propensity and supply-chain fragmentation—we analyse a panel of 1235 firms from 2013 to 2021. The analysis reveals a statistically significant increase in SR publication in 2021 and indicates that obtaining external assurance is positively associated with revenue and negatively associated with leverage. These patterns point to an acceleration in sustainability disclosure and offer evidence relevant to managerial practice and policy design under the expected CSRD approval in 2021.

1 | Introduction

Striking a balance between the reduction of impacts in production systems and rising food demand continues to challenge existing practices and the pursuit of more sustainable development models (Adams et al. 2021; Bebbington and Rubin 2022; Melissen et al. 2018; Ordóñez-Ponce et al. 2021; Zampone and Guidi 2024; Zira et al. 2021). This challenge involves both policymakers and production systems with the increasing awareness of the need to set targets for the ecological transition of production chains (Adams and Mueller 2022; Caiado et al. 2017; Figge and Hahn 2004; Lai and Stacchezzini 2021; Seuring and Müller 2008). The agrifood industry is not exempt from an increased focus on sustainability (Agnusdei and Coluccia 2022; Harris et al. 2024; Kumar et al. 2022). The need for the agrifood sector to reduce its environmental impact is increasingly recognized, as evidence shows that it is responsible for about

one-third of anthropogenic greenhouse gas (GHG) emissions (Crippa et al. 2021). This necessity has been further consolidated and promoted by institutions. In Europe, for example, these efforts are reflected in the European Union's initiatives to strengthen the greening of the Common Agricultural Policy (CAP) and in the Farm to Fork Strategy, which aims to make food systems fairer, healthier, and more environmentally sustainable (European Commission 2020; European Parliament resolution 2021).

At the firm level, agrifood companies are increasingly committed to pursuing sustainability objectives, and the publication of sustainability reports (SRs) represents a primary mechanism through which they demonstrate their efforts and engagement in the sustainability transition (Corallo et al. 2025; Harris et al. 2024; Topp-Becker and Ellis 2017). However, despite the marked rise in demand and interest in sustainability

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reporting (Dienes et al. 2016; Jensen and Berg 2012; Naidoo and Gasparatos 2018; Pizzi et al. 2020; Pizzi et al. 2021; Vitolla et al. 2019), substantial heterogeneity persists in the way sustainability commitments are disclosed, and a central challenge remains: aligning the “walk”—the implementation of substantive sustainability practices—with the “talk”—their representation in SRs (Schoeneborn et al. 2020). In fact, when disclosure is absent or incomplete, stakeholders struggle to assess whether effort has occurred, how it is governed, and with what performance implications (Cagno et al. 2023; Caccialanza et al. 2025; Gangi et al. 2020). The practice of under-disclosing and under-communicating implemented sustainability practices—known as *greenhushing*—has been widely observed in the agrifood sector (e.g., Caccialanza and Torelli 2024; Galli et al. 2023b).

In an attempt to align the “walk” with the “talk,” the European Union has introduced the Corporate Sustainability Reporting Directive (CSRD), a strong institutional lever aimed at increasing SR issuance. Its proposal (April 2021) and subsequent adoption (December 2022) expand the perimeter of mandatory reporting and progressively lower size thresholds, thereby strengthening incentives for SR publication and nudging firms toward more credible communication of the “walk” through the “talk”. The Directive significantly expands the scope of the previous EU Directive 2014/95, requiring all EU member states to progressively mandate, starting in 2024, that more medium-large companies and small and medium enterprises (SMEs) disclose their sustainability performance. Understanding what can shift firms away from *greenhushing* toward credible disclosure is therefore essential to increase SR uptake (Pizzi and Coronella 2025).

Building on these premises, the study first asks whether expectations surrounding the CSRD’s approval, fostered by the policy and political discussion, influenced the number of agrifood companies that disclosed SRs (RQ1).

Moreover, we consider not only the breadth of communication but also the quality and credibility of what firms disclose (e.g., Arvidsson and Dumay 2022; Barghathi et al. 2018; Bini et al. 2023; Carungu et al. 2021). External assurance of SRs can support credibility and move disclosures toward substance (e.g., Casey and Grenier 2015; CEAOB 2024; Clarkson et al. 2019; Hazaea et al. 2022; Ioannou and Serafeim 2017). In fact, the need for assurance arises from concerns about the reliability and credibility of information provided through the voluntary practice of sustainability reporting (Boiral and Heras-Saizarbitoria 2020; Bouten et al. 2011; Richard and Odendaal 2021) since an increase in institutional pressure does not necessarily guarantee an improvement in reporting quality, as businesses may adopt mimetic isomorphism strategies in response (Baudot and Cooper 2022; Carungu et al. 2021) or “formal” sustainability reporting practices (Westerholz and Höhler 2022). In fact, as defined by the Institute of Internal Auditors (2012, 9) “the objective of assurance services is to examine evidence for the purpose of providing an independent assessment on governance, risk management and control processes for the organisation.” The CSRD advances this direction by introducing a phased requirement of limited assurance for SRs, with a longer-term trajectory toward reasonable assurance (European Commission 2024). The CSRD initiative, therefore,

has created institutional (policy-led) expectations that may influence assurance choices even before the formal approval in 2022 and the full implementation from 2024 (e.g., Krasodomska et al. 2025). Moreover, according to Di Tullio et al. (2025), the CSRD proposal has challenged the *greenhushing* propensity in order to foster a higher level of completeness of SR information, given the greater trustworthiness and wider adoption of mandatory SR assurance practices. However, the responsiveness of this reaction and its propensity may be influenced by the availability of resources and (internal) competencies (Di Tullio et al. 2025). We therefore investigate the financial characteristics of firms that chose to obtain external assurance even before the full implementation of the CSRD (RQ2).

Prior studies already linked *greenhushing* to concerns about the completeness and credibility of SR information, positioning external assurance as a means that can enhance perceived reliability when appropriately designed (Falchi et al. 2022; Krasodomska et al. 2021, 2025; Hummel et al. 2019; Quick and Inwinkl 2020; O’Dwyer et al. 2011). Evidence spans multiple sectors –i.e., tourism businesses (Font et al. 2017), pharmaceuticals and textiles (Schwoy et al. 2025) and European countries. According to the South Pole report (2022), among listed firms, roughly seven in ten acknowledged practising *greenhushing*; moreover, about one in four said they had set science-based emissions targets but did not intend to publicise them. The pattern appears even stronger in parts of Europe, with approximately 79% of Swedish firms and around 83% of French firms reporting *greenhushing* (Ku 2024).

Despite prior studies in the agrifood industry having noted omissions or under-reporting (Galli et al. 2023b; Caccialanza and Torelli 2024), they have not yet systematically examined how the expected approval of CSRD in 2021 translated into firms’ propensity to obtain SR assurance, leaving a gap. This gap is consequential given the salience of production-related impacts and sustained activism around environmental protection and animal welfare in food supply chains (e.g., Caccialanza, Sartori, et al. 2023; Caccialanza et al. 2025).

We focus on the Italian agrifood industry because *greenhushing* is particularly relevant in Italy, where structural characteristics and supply-chain fragmentation may weaken firms’ incentives to communicate their sustainability efforts (Galli et al. 2023b; Caccialanza and Torelli 2024).

To address our research questions, we analyse a panel of 1235 Italian agrifood firms (8672 observations) covering the period 2013–2021. Our approach combines an analysis of changes in SR uptake during the discussion surrounding the CSRD introduction in 2021 with an examination of the determinants of external assurance within the sub-sample of reporting firms (57 firms; 463 observations).

Our results indicate an increase in the publication of SRs between 2020 and 2021 (RQ1). This temporal pattern aligns with the intensification of institutional pressures associated with the CSRD. Nevertheless, we underscore that the observed relationship is purely correlational, as the characteristics of our research setting preclude any causal inference conclusion. Moreover, we found a positive association between revenue and the propensity to provide external assurance. Conversely, the association

is negative with higher leverage (RQ2). These results reinforce the need for higher credibility signalled by the SRs' external assurance on firms with financial slack and higher risk profiles.

We contribute to the literature in several ways. On the managerial side, we confirm that the publication of SRs and their external assurance in agrifood is not random but patterned by exposure to institutional pressure (i.e., CSRD) and firms' financial profiles. On the policy side, we show that the adoption of external assurance is systematically linked to firm economics (i.e., revenue, leverage), thereby specifying the micro-foundations of assurance in a sector where verification has been under-theorized.

The structure of this paper is thus proposed as follows. The second section presents the background and the literature review that justifies the contribution of the present research. The third section explains the methodologies for the selection and analysis of the sample. The fourth section presents and discusses the results. The fifth section summarizes the concluding considerations, contributions, limitations and a research agenda.

2 | Background and Literature Review

2.1 | The EU Regulatory Framework for Sustainability Reporting

The regulatory framework for sustainability reporting in the European Union has evolved significantly over the past decade, reflecting the EU's strategic commitment to improving transparency and corporate responsibility in the disclosure of non-financial and sustainability-related matters (Ropes and Gray 2025). Directive 2014/95/EU, commonly known as the Non-Financial Reporting Directive (NFRD), was a key step in obliging large public interest companies with more than 500 employees to disclose non-financial information, particularly on environmental protection, social responsibility, human rights, anti-corruption and board diversity.¹ However, the limited scope and flexibility of the NFRD led to inconsistencies and a lack of comparability in disclosures. In response to this, the EU adopted the CSRD in 2022 (European Parliament and of the Council 2022), which significantly broadened the scope to include all large companies and listed SMEs (with some exceptions)² and introduced stricter reporting requirements aligned with the European Sustainability Reporting Standards (ESRS). Through the spread of ESRS, the CSRD aims to standardise sustainability reporting, ensure its accountability and auditability and integrate sustainability-related data more thoroughly into the broader EU sustainable finance agenda. More recently, the "Omnibus package", part of the ongoing EU regulatory consolidation process, has begun to align and simplify existing legislative instruments, including sustainability reporting, in response to the need for greater synthesis, to reduce redundancies, and to lower the costs and efforts required for the full implementation of all ESRS datapoints. The 'Omnibus package' approach reflects the EU's intention to create an even more unified regulatory environment that enhances the comparability and reliability of SRs, while narrowing the scope of its mandatory application. Based on the announced approval of the CSRD and the subsequent discussion of the 'Omnibus package' in 2025, 2021 represents a decisive turning point in the evolution

of sustainability reporting in the European Union and should be regarded as a key transitional milestone within a broader ten-year trajectory. Although the CSRD was formally adopted in December 2022 and entered into force in January 2023, the paradigm shift toward more rigorous non-financial reporting began to materialize with the publication of the CSRD proposal by the European Commission on April 21, 2021. At that time, the CSRD proposal was not an isolated initiative but part of a broader strategic framework—embedded within the ambitions of the European Green Deal and the Agenda for Sustainable Finance—both aimed at reorienting capital flows toward sustainable investments and promoting transparency as a pillar of climate and social responsibility. The publication of the CSRD proposal sent a strong political and regulatory signal to markets, regulators, and companies across the EU, indicating that sustainability reporting was no longer to be seen as a peripheral or voluntary initiative but as a central and mandatory component of corporate responsibility (Abela 2022). In the Italian context, two additional regulatory layers appear particularly relevant to this study. First, assurance practices under the NFRD framework were already conducted under limited assurance, while the CSRD envisages a gradual shift toward reasonable assurance.³ Second, particular attention should be paid to how the CSRD has been transposed into national legislation, as the Italian implementation introduces specific legal and supervisory arrangements that shape the reporting and assurance requirements.⁴ Taken together, these elements influence how reporting and assurance decisions are made and justify the country- and sector-specific perspective adopted in this analysis.

2.2 | Sustainability Reporting in the Italian Agrifood Context

The Italian agrifood sector provides a relevant context for analysing sustainability reporting under the CSRD from both a country and a sectoral standpoint. With regard to country-specific factors, and according to the CSRD Transposition Tracker compiled by Accountancy Europe (2025), Italy is classified among the earliest EU member states to have completed CSRD transposition, since it finalized its legislative process in mid-2024, positioning itself ahead of the majority of member states in establishing a domestic framework for sustainability reporting and assurance (see the Legislative Decree No. 125/2024 2024). This early alignment offers an opportunity to examine how regulatory anticipation and national institutional arrangements may influence firms' disclosure and assurance practices.

From a sectoral standpoint, the agrifood system is directly affected by climate change through increased temperature variability, water stress, and extreme events, which have already reduced crop yields and affected production costs. According to the Italian National Institute of Statistics (ISTAT – Istituto Nazionale di Statistica 2024), output in agriculture, forestry, and fishing decreased by 1.8% in real terms in 2023, with marked declines in permanent crops reflecting adverse climatic conditions (ISTAT 2024). These dynamics make the sector appropriate for assessing how firms report and respond to environmental risks.

At the same time, agrifood activities are under scrutiny for environmental externalities, including GHG emissions associated

with livestock, fertilizers, and energy use along the production chain (ISPRA – Istituto Superiore per la Protezione e la Ricerca Ambientale 2024). The need to monitor and disclose environmental performance is therefore closely connected to compliance and to stakeholder expectations and internal improvement of performance (Caccialanza et al. 2025; Cagno et al. 2023; Caiado et al. 2017; Fiandrino et al. 2019). Nevertheless, disclosure practices in this field remain heterogeneous, and underreporting phenomena such as *greenhushing* can limit the availability of comparable information, particularly among SMEs (Galli et al. 2023a, 2023b). Furthermore, the agrifood sector is a significant component of the national economy and trade. In 2023, Italian agrifood exports reached € 63.1 billion, an annual increase of 6.6% (CREA 2024). Across the broader agrifood chain—spanning primary production, the food industry, and distribution—turnover is about € 523 billion, involving 1.2 million enterprises and 3.6 million workers (MIMIT 2024). Within this structure, the prevalence of medium-sized and family-owned firms entails resource constraints that may affect the implementation and reporting of sustainability practices. Italy's agrifood system also presents specific structural features that reinforce its analytical relevance. Italy records one of the highest numbers of geographical indications in Europe, with 856 PDO/PGI/TSG products as of 2024 (ISMEA 2024). These products generated an estimated production value of € 20.2 billion in 2023 and involved ~195,000 operators (ISMEA-Qualivita 2024). The link between product reputation, territorial identity, and quality certification strengthens the role of sustainability communication as part of value creation and differentiation strategies (e.g., Caccialanza, Cerrato, and Galli 2023; Waheed and Zhang 2020).

2.3 | Assurance of Sustainability Reports as a Means for Enhancing Credibility

Previous studies have shown that companies often follow a gradual path toward sustainability, moving through different stages that eventually lead to an integrated approach and external verification of their claims through the attainment of external assurance (Boiral and Heras-Saizarbitoria 2020; Jørgensen et al. 2022; Maas et al. 2016; Simoni et al. 2020). However, effective external assurance requires more than simply engaging third-party auditors; it also relies on a robust internal reporting and control system to support board oversight and ensure credible stakeholder reporting (Maroun and Prinsloo 2020; Alsahali and Malagueño 2022; Przybilla and Müller 2025). Establishing such systems demands significant time, financial resources, and expertise—factors more readily available to large organizations that can maintain the necessary accounting infrastructure and internal controls (AccountAbility 2008; International Auditing and Assurance Standards Board – IAASB 2009; KPMG 2022; Oware and Appiah 2022). For example, the presence and effectiveness of CSR/sustainability committees and audit committees are associated with higher assurance uptake and more credible reporting (Bradbury et al. 2022; Al-Shaer and Zaman 2018; Oware and Mallikarjunappa 2021). While SRs and SRs' assurance have been examined through multiple theoretical lenses (e.g., Hahn and Kühnen 2013; Ruiz-Barbadillo and Martínez-Ferrero 2022), what ultimately matters across approaches is sustained investment of resources and capabilities

in the assurance process (e.g., Di Tullio et al. 2025; Hummel et al. 2019). In fact, given the scarcity of resources—i.e., according to the resource-based view (Barney 1991)—both the publication of SRs and, especially, the decision to obtain external assurance entail non-trivial investments in firm-specific capabilities and slack—such as specialized sustainability expertise, data systems, and governance structures—that lower the organizational costs of assuring disclosures (Bradbury et al. 2022; Dhaliwal et al. 2011; Elbardan et al. 2023; Zaman et al. 2021). According to a large part of the literature, the third-party assurance process contributes to stakeholder accountability by improving the reliability, materiality and credibility of sustainability reporting (e.g., Cooper and Michelon 2022; Moroney et al. 2012; Quick and Inwinkl 2020; Reimsbach et al. 2018; Simnett et al. 2009). Among the various theoretical perspectives used to investigate external assurance adoption (e.g., Alsahali and Malagueño 2022; Tyson and Adams 2020), we decided to embrace the lens of legitimacy theory precisely because of the desire of companies to accredit themselves to external stakeholder categories and legitimize themselves in the market, while preserving their financial performance (Contrafatto 2014; Farooq and De Villiers 2019; Gallego-Álvarez and Pucheta-Martínez 2022; Schoeneborn et al. 2020; Weber and Saunders-Hogberg 2018).

2.4 | Research Questions and Hypothesis Development

2.4.1 | Research Questions

Prior work shows that coercive, normative, and mimetic pressures push firms toward formal sustainability disclosure, a dynamic amplified in the agrifood sector by the CSRD and persistent *greenhushing* risks (Gerber et al. 2024; Corallo et al. 2025). Particularly, despite the widespread adoption of various sustainability practices in Italy, these efforts are not always reflected in formal SR publications (Galli et al. 2023a; 2023b). This underscores how the Italian context differs from other European regions (e.g., Khatri and Kjærland 2023; Somoza 2023). Based on this evidence, we formulate:

RQ1. *Does heightened institutional pressure around CSRD correspond to an increase in the publication of sustainability reports among Italian agrifood firms?*

Secondly, firms' financial condition—including profitability and indicators of financial equilibrium or distress—affects their decision to obtain assurance on SRs (Gipper et al. 2025; Simnett et al. 2009). We expect stronger profitability and liquidity to increase the likelihood of commissioning SR assurance, while financial distress reduces it (Simnett et al. 2009; Quick and Inwinkl 2020). These expectations are consistent with the European Commission's CSRD impact assessment, which estimates around € 3.6 billion in recurrent preparer costs, implying an average of roughly € 106,000 per company per year across approximately 49,000 firms within scope (European Commission 2021). Moreover, we suppose that companies with solid financial strength are more inclined to require external assurance for their SRs, in order to enhance their credibility and meet emerging stakeholder expectations (Gipper et al. 2020;

Quick and Inwinkl 2020; Richard and Odendaal 2021). In fact, a firm's decision to move from "reporting" to externally assuring its SR entails nontrivial direct costs—i.e., fees, data systems, internal coordination—(e.g., Casey and Grenier 2015) and opportunity costs in terms of dedicated managerial attention (e.g., Christensen et al. 2021). Building on the literature on slack resources, organizations are more likely to undertake such discretionary, credibility-enhancing investments when they possess available slack (e.g., Bourgeois III 1981), and less likely when financial strain tightens discretion (Christensen et al. 2021). Prior evidence shows that slack can enable proactive strategies and superior outcomes, while resource constraints can dampen discretionary initiatives or redirect attention to short-term survival (Daniel et al. 2004; George 2005). Moreover, the effects of slack depend on its type and redeployability (i.e., absorbed vs. unabsorbed; rare vs. generic), and on environmental pressures; when slack is unabsorbed and generic (e.g., cash), firms are more able to fund exploratory or credibility-building moves (Voss et al. 2008). Recent integrative work clarifies that availability and fungibility are the two foundational dimensions of slack resources; when they are both easy to access and versatile, they afford managers the greatest discretion to allocate funds to assurance (Mount et al. 2024). In these contexts, specifically, unabsorbed slack can amplify the translation of top-management intent into environmental strategy, consistent with the idea that slack facilitates the implementation of these costly governance mechanisms (Lee et al. 2021). Integrating these assumptions with assurance determinants in sustainability reporting (Al-Shaer et al. 2022; Girón et al. 2021; Kuzey and Uyar 2017), we argue that assurance adoption in agrifood will mirror a firm's slack profile: (i) scale and revenues—proxies for accessible, enabled resources—raise assurance propensity; (ii) leverage and losses—proxies for constrained availability and short-termism—lower it. Consequently, we frame a general question on financial slack and assurance:

RQ2. *Which firm characteristics are associated with the adoption of external assurance for sustainability reports?*

2.4.2 | Hypothesis Development

To address RQ2, we draw on recent evidence from large-cap U.S. firms (S&P 500) showing that economics-related firm attributes are systematically associated with the uptake of ESG assurance (Gipper et al. 2025). Accordingly, an organisation actively allocates resources and seeks to implement such control and oversight mechanisms within the sustainability reporting process—including SRs' assurance—in order to secure enhanced legitimacy among its stakeholder groups. We seek to visually represent this legitimisation endeavour within the theoretical framework constructed for RQ2, in relation to an organisation's available resources. We operationalise two classes of resources that may, respectively, enable or constrain discretionary, credibility-enhancing investment in assurance: (i) enabled resources (unabsorbed slack and scale), and (ii) constrained resources (financial pressure and distress). Enabled resources capture the availability of deployable means (e.g., liquidity and fungible capacity) and economies of scale; constrained resources reflect tighter financial discretion and attendant opportunity costs of managerial attention. Larger headcount signals

organizational scale and coordination capacity—forms of slack that expand the managerial bandwidth needed to run assurance processes—so we expect a positive association between employees and assurance uptake (HP2a). In contrast, higher leverage tightens cash and managerial discretion and often pushes organizations toward threat-rigidity responses rather than discretionary governance outlays; moreover, "potential" slack accessed through debt is neither immediately available nor costless (George 2005; Voss et al. 2008; Mount et al. 2024), further curbing redeployment for verification (HP2b). By the same logic, higher revenues proxy unabsorbed financial slack and stakeholder visibility—conditions under which managers have both the means and incentive to invest in credibility (i.e., environmental governance choices become more feasible as slack rises)—so we expect a positive association between revenue and assurance (HP2c). Finally, negative profit margins indicate slack scarcity and short managerial horizons, which typically trigger retrenchment and reduce willingness to incur additional verification costs; accordingly, we expect a negative association between losses and assurance (HP2d). We therefore decompose RQ2 into four specifications that operationalize this broader question:

HP2a. *A larger number of employees is associated with a higher probability of obtaining external assurance for sustainability reports.*

HP2b. *A higher leverage is associated with a lower probability of obtaining external assurance for sustainability reports.*

HP2c. *Higher revenues are associated with a higher probability of obtaining external assurance for sustainability reports.*

HP2d. *Reporting a negative profit margin is associated with a lower probability of obtaining external assurance for sustainability reports.*

The theoretical framework proposed in Figure 1 graphically shows the operationalization proposed for RQ2 in the testable HP2a, HP2b, HP2c, and HP2d.

3 | Material and Methods

3.1 | Sample Definition

The sample used for the analysis was extracted from the Aida—Bureau van Dijk database (extraction date: 17/05/2023). This database provided accounting and dimensional data for all companies headquartered in Italy that belong to the following "ATECO 2007" categories: 101—Processing and preservation of meat and production of meat products, 102—Processing and preservation of fish, crustaceans and molluscs, 103—Processing and preservation of fruit and vegetables, 104—Production of vegetable and animal oils and fats, 105—Dairy industry, 106—Grain processing, production of starches and starch products, 107—Production of bakery and farinaceous products.

We did not include 108 Production of other food products because it comprised too many different types of food products that did not allow clear identification of causes and/or contextual factors.

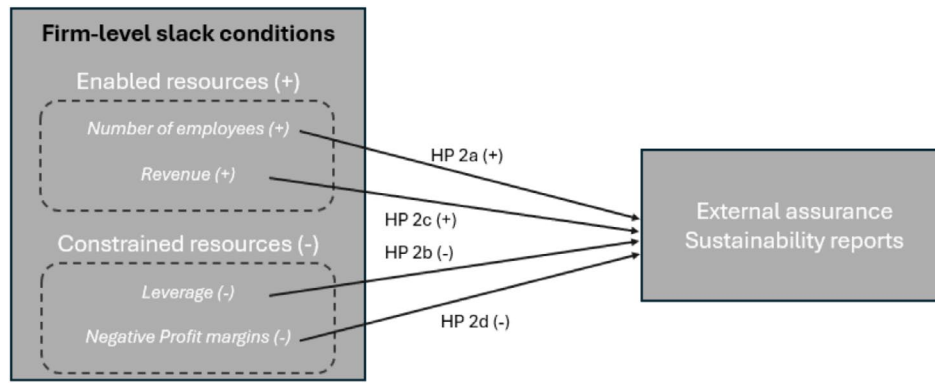


FIGURE 1 | Theoretical framework proposed. *Source:* Authors' own work.

Similarly, the coding *109 Production of animal feeding products* was removed because production is not for human consumption, which is instead the aim of the other product categories.

The analysis started with a sample comprising 34,459 (215,568 observations) medium-to-large firms, selected from a larger pool of 38,523 (350,109 observations) using the criterion of excluding observations with fewer than 50 employees or with revenues or assets below € 10 million to exclude those firms that were identified as small firms according to European taxonomy, in order to ensure a minimum level of consistency in the companies' economic data and foster homogeneity within the sample (Segarra and Teruel 2012). The sample selection process involved the analysis of only recognised companies with legally active status (10,189) in the fiscal year 2021 (7611). After the removal of missing observations—attributable to missing data in the Aida-Bureau van Dijk database—we obtained an unbalanced panel dataset comprising 1235 firms (8672 observations).

Then, to address RQ2, we partitioned the sample exclusively to include firms that had published at least one SR. The distinction between these two groups of reporting and non-reporting companies was made possible through a manual screening of the websites of 1235 companies conducted by the authors. This second panel, obtained from screening the websites of 1235 companies and linked with RQ2, resulted in a subset comprising 57 firms and 463 observations. With respect to the CSRD size-based reporting “waves”, the 57 firms in our subset comprise 50 large undertakings (subject to mandatory sustainability reporting in the earlier 2024 and 2025 application “waves”) and 7 medium-sized firms. No listed SMEs were identified in the Italian agrifood sector; therefore, the “listed SMEs wave” is not represented in our dataset.

In Table 1 we report the description of the variables employed in the analysis, as well as the source that we used to retrieve data.

3.2 | Empirical Approach

To address RQ2, we restrict our analysis to firms that publish SRs and examine which factors increase the likelihood of obtaining external assurance. We estimate a fixed-effects logistic regression model with firm and year effects to exploit within-firm

variation over time. Identification comes from firms that switch assurance status (from 0 to 1) within the observation window. We develop a model in accordance with previous studies (Girón et al. 2021; Kuzey and Uyar 2017) focusing on different financial and economic variables of the companies' performances (Braun et al. 2021; Girón et al. 2021; Ibáñez-Forés et al. 2023; Zeisel 2020).

More specifically, we estimated the following model (Model I):

$$\text{Logit}(P_{it}) = \text{Log}\left(\frac{P_{it}}{1-P_{it}}\right) = \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 D_{1it} + \beta_5 D_{2it} + \theta_i + \tau_t + \varepsilon_{it} \quad (1)$$

θ_i and τ_t are the firm and the time fixed effect coefficients respectively. Where $i = 1, \dots, 57$, $t = 2013, \dots, 2021$, x_{1it} is the logarithm of the firm revenue, x_{2it} is the logarithm of the firm's leverage, x_{3it} is the number of employees and D_{1it} is a dummy representing whether the firm had a negative profit margin and D_{2it} a dummy indicating whether the firm had a negative cash flow, θ_i are firm fixed effects, τ_t are the time fixed effects, and ε_{it} is the idiosyncratic error term. The inclusion of fixed effects is particularly important in our panel data analysis, as it helps disentangle the within-group variation from the across-group variation, providing a more accurate understanding of which variables lead firms to obtain external assurance over time.

4 | Results and Discussion

4.1 | Results

The descriptive statistics for the full sample (1235 firms), which we used to investigate RQ1 are reported in Table 2. We present the frequency of observations which is relatively uniform across the production sectors, although some sectors, such as fish, vegetables, and animal oils and fats, exhibit a slightly lower representation, which is consistent with the actual distribution of ITALIAN agrifood companies by product category (ISMEA 2020). In Table 3 we report descriptive statistics for key financial indicators of the firms in the full sample.

First, we report the results aimed at answering RQ1. To determine the association between institutional pressure and SRs adoption, we retained the complete sample comprising the 1235

TABLE 1 | Description of the variables.

Variable	Unit of measurement	Description	Source
Dependent variable			
External assurance	Binary variable	Dummy variable equal to 1 if firm has external assurance on SRs; 0 otherwise.	Hand-collected from firms' SRs
Explanatory variables			
Number of employees	Continuous variable	Mean of the number of employees	Aida
Asset	Continuous variable	Total asset of the firm (in thousands)	Aida
Revenue	Continuous variable	Total revenues of the firm (in thousands)	Aida
Negative profit margin	Binary variable	Dummy variable representing whether the firm had a negative profit margin; 0 otherwise.	Aida
Negative cash flow	Binary variable	Dummy variable indicating whether the firm had a negative cash flow; 0 otherwise.	Aida
General characteristics			
Years of sustainability report	Continuous variable	Number of the available editions of firm's SRs	Hand-collected from firms' SRs
ROE	Continuous variable	Return on equity	Aida
ROA	Continuous variable	Return on asset	Aida
EBITDA (%)	Continuous variable	Earnings Before Interest, Taxes, Depreciation and Amortisation	Aida
Profit margin	Continuous variable	Profit margin of the firm	Aida
Leverage	Continuous variable	Leverage of the firm	Aida

Source: Authors' own work.

TABLE 2 | Observations distribution across product category.

Product category	Freq.	%
101 – Processing and preservation of meat and production of meat product	2094	24.12
102 – Processing and preservation of fish, crustaceans and molluscs	330	3.80
103 – Processing and preservation of fruit and vegetables	1653	19.04
104 – Production of vegetable and animal oils and fats	543	6.26
105 – Dairy industry	1913	22.04
106 – Grain processing, production of starches and starch product	817	9.41
107 – Production of bakery and farinaceous product	1322	15.24
Total	8672	100

Source: Authors' own work.

firms. Our analysis included both a descriptive examination and a statistical test for equality of proportions. These analytical approaches allowed us to assess whether there was a significant

shift in the adoption of SRs following 2021. Figure 2 shows that most of the observations that introduced a SR belong to 103—*Processing and preservation of fruits and vegetables*. This evidence potentially suggests the role of pressure from food retailers in engaging fruit and vegetable processing firms in CSR activities and in legitimately encouraging them to adopt socially responsible behaviors to reduce food and vegetable waste (Devin and Richards 2018). Therefore, these pressures might have played a driving role in the promotion of the propensity to adopt sustainability reporting.

Results show that the number of companies issuing SRs has exhibited a steady upward trend from 2013 to 2021 (see Figure 3 for more details). Notably, there was a particularly pronounced increase in the publication of SRs from 2020 to 2021.

Employing a test of equality of proportions, see Table 4, we find that the 2020-2021 observed difference holds statistical significance. This finding strongly implies a correlation between the institutional pressures that compelled firms to embrace sustainability reporting, confirming what was suggested by prior studies (Contrafatto 2014; Galli et al. 2023b; Giner and Luque-Vilchez 2022). Our correlational analysis cannot identify the drivers of the observed pattern or establish causality. Given the large representation of large undertakings (50 out of 57) among the reporting firms, we did not consider it feasible to conduct further analyses specifically linked to the application period

TABLE 3 | Descriptive statistics of key financial variables.

Variable	Mean	Std. dev.	Min	Max
101 – processing and preservation of meat and production of meat product, obs: 2094				
Asset	57,868.85	133,581.41	10,013.11	1,848,753.70
Revenue	94,080.83	268,102.84	9896.24	4,483,780.80
Leverage	180.75	179.33	0.00	990.09
ROE	7.27	38.97	−875.59	475.23
ROA	3.26	5.67	−25.38	75.15
EBITDA	3999.82	13,021.94	−17,616.95	201,866.42
Number of employees	158.36	609.83	1.00	7078.00
102 – processing and preservation of fish, crustaceans and molluscs, obs: 330				
Asset	36,962.60	29,915.33	10,023.24	171,808.27
Revenue	50,546.76	54,861.61	8387.21	362,005.45
Leverage	196.56	163.24	2.95	954.41
ROE	13.02	20.25	−131.23	112.82
ROA	4.05	5.08	−13.01	24.78
EBITDA	2808.95	2980.06	−2758.48	15,662.09
Number of employees	118.43	198.21	9.00	1358.00
103 – processing and preservation of fruits and vegetables, obs: 1653				
Asset	53,205.24	101,696.56	10,011.32	1,136,691.60
Revenue	57,368.62	109,607.05	5947.41	1,302,762.30
Leverage	180.57	174.66	0.32	979.73
ROE	11.97	33.96	−264.55	562.78
ROA	3.58	5.74	−32.00	75.85
EBITDA	3951.81	8369.65	−16,649.61	100,937.51
Number of employees	123.69	255.62	2.00	3093.00
104 – production of vegetable and animal oils and fats, obs: 543				
Asset	88,364.97	141,650.58	10,054.22	1,020,853.10
Revenue	119,225.24	174,040.48	10,064.52	1,214,833.40
Leverage	183.72	173.29	0.86	943.18
ROE	10.91	46.62	−964.95	157.31
ROA	4.39	5.96	−42.94	26.09
EBITDA	6,224.17	14,538.97	−66,217.32	154,736.90
Number of employees	93.36	270.52	4.00	2967.00
105 – dairy industry, obs: 1913				
Asset	87,206.45	463,439.83	10,016.51	7,994,232.80
Revenue	105,432.27	546,127.56	8,310.78	9,162,995.90
Leverage	191.07	188.04	0.36	996.09
ROE	8.05	30.35	−750.73	116.56
ROA	3.31	6.39	−38.90	72.74

(Continues)

TABLE 3 | (Continued)

Variable	Mean	Std. dev.	Min	Max
EBITDA	6,883.90	39,148.56	-11,104.01	681,372.34
Number of employees	207.26	1,691.13	1.00	28,429.00
106 – grain processing, production of starches and starch product, obs: 817				
Asset	52,753.99	80,099.36	10,021.34	840,591.59
Revenue	68,339.21	112,148.89	9780.53	986,724.72
Leverage	146.98	141.19	1.59	789.50
ROE	10.60	15.67	-108.77	125.67
ROA	4.47	5.59	-19.84	29.34
EBITDA	4671.93	8608.43	-10,955.63	75,724.96
Number of employees	59.83	97.86	1.00	742.00
107 – production of bakery and farinaceous products, obs: 1322				
Asset	82,435.68	286,592.13	10,000.30	3,729,178.70
Revenue	79,655.57	270,396.53	6020.80	3,615,896.00
Leverage	138.53	150.57	0.42	973.73
ROE	9.79	33.75	-477.22	257.40
ROA	4.48	7.17	-35.26	45.15
EBITDA	7931.39	30,286.47	-31,072.87	445,192.78
Number of employees	165.76	407.05	7.00	4251.00

Note: Variables Asset, Revenue and EBITDA have been expressed in thousands of euros.

Source: Authors' own work.

associated with each CSRD wave. It is plausible—though not demonstrable with our data—that this increase coincides with broader institutional shifts and a changing policy narrative. Nevertheless, we acknowledge that with the available data and the current empirical setup we cannot isolate any causal effect of these initiatives.

To address RQ2, we relied on the sub-sample of reporting firms to examine the factors associated with the likelihood of conducting external assurance. Table 5 reports descriptive statistics for the firms in this sub-sample, including both the explanatory variables used in the main model and additional general firm characteristics. The dependent variable, external assurance, indicates whether a firm obtained third-party assurance of its SR during the observation period. Of the 57 firms in our sample, 18 (31.6%) adopted external assurance.

Table 6 shows how the propensity to obtain external assurance has evolved over time among the firms in our sample. Eight firms had their first reporting year in 2021, and eight of them adopted assurance in that initial year. In contrast, the remaining ten adopters—those whose first reporting year predates 2021—tend to transition to assurance more gradually. They initially report without assurance and subsequently adopt it. This pattern is most evident among firms that were already publishing reports in the previous decade. Despite the small sample size and descriptive nature of our analysis, we can cautiously conclude that

an emerging pattern is the adoption of external assurance since the first edition of the report.

Results aimed at answering RQ2 are reported in Table 7. Results show that there is an association between two financial variables—*Log Leverage* and *Log Revenue*—and the likelihood of obtaining external assurance on the report.

First, we find a negative association between *Log Leverage* and the likelihood of obtaining external assurance. Similarly, other scholars (e.g., Sierra et al. 2013; Thun and Zülch 2023), also in agrifood contexts (e.g., Yahya et al. 2022), found the same negative relationship. Conversely, Simnett et al. (2009) previously found significance with respect to profitability and not leverage. However, more recently, Bini et al. (2023) pointed out how higher levels of leverage led to increasing pressures on firms to legitimize their actions, improve stakeholders' management and foster sustainability disclosure consistency. These considerations are consistent with what has also emerged in our research for the Italian agrifood manufacturing context, where greater exposure in financial terms is associated with a lower likelihood that firms will provide transparency and verifiability of what is communicated in terms of performance. Secondly, we find a positive association between *Log Revenue* and assurance indicating that larger revenues are associated with an increased likelihood of external assurance. In sum, our results support HP2b and HP2c (both

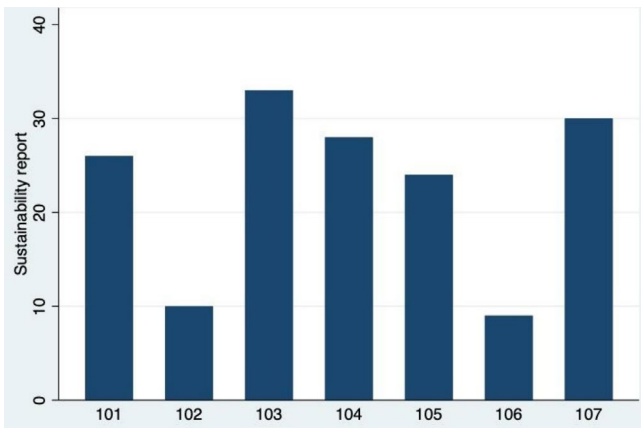


FIGURE 2 | Number of observations with a SR by product category. Source: Authors' own work.

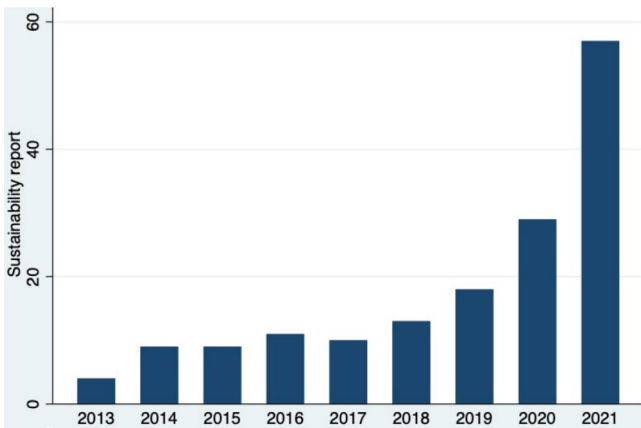


FIGURE 3 | Firms with a SR per year. Source: Authors' own work.

TABLE 4 | Presence of SR before-after 2021.

Presence of SR	Mean	SE
2020	0.03	0.00
2021	0.05	0.01
Difference	-0.02***	0.01

Note: Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Abbreviation: SE: Standard.
Source: Authors' own work.

$p < 0.001$), whereas no support is found for **HP2a** ($p = 0.378$) or **HP2d** ($p = 0.541$).

4.2 | Discussion

The CSRD and subsequent regulatory developments, including those within the “Omnibus package” framework, offer Italian agrifood companies the chance to improve the consistency and accuracy of their sustainability data, strengthening their competitiveness in a market where environmental and social credibility are crucial for success (e.g., CONSOB 2025; Christensen et al. 2021; Conca et al. 2021; Corallo et al. 2025). At the same time, these developments could help to overcome *greenhushing* by encouraging more transparent and accountable

communication about sustainability (e.g., Galli et al. 2023b; Caccialanza and Torelli 2024).

Our evidence depicts a sector that responds to institutional signals, as the pronounced increase in SRs around the CSRD proposal indicates a disclosure reaction (RQ1). Such a response was expected, given the sector's exposure to environmental and social concerns and the attendant stakeholder pressure (e.g., Cagno et al. 2023; Caccialanza et al. 2025; León-Bravo et al. 2019), yet it was not guaranteed. The observed rise in SR issuance thus suggests a meaningful shift in reporting behavior, while leaving open the question of how far these disclosures advance in quality and credibility (e.g., Arvidsson and Dumay 2022; Carungu et al. 2021; Zaman et al. 2021).

Viewed through a legitimacy lens, firms aim to signal appropriateness to stakeholders but this intent is related to their slack resources and competencies (Mount et al. 2024; Lee et al. 2021). External assurance operates as a discretionary, credibility-enhancing commitment that is more feasible when redeployable capabilities and financial slack are available, and less so when discretion tightens (Gipper et al. 2020; Quick and Inwinkl 2020; Richard and Odendaal 2021). Consequently, the pursuit of legitimacy is contingent on the organisational capacity to absorb the costs and routines that make assurance workable (Di Tullio et al. 2025). In line with recent evidence on SRs and SRs' assurance (e.g., Gipper et al. 2025; see also Casey and Grenier 2015; Christensen et al. 2021; Simnett et al. 2009), our results indicate that revenue—as a variable for enabled resources—and leverage—as a variable for constrained resources—are significantly associated with the decision to obtain external assurance (RQ2). What emerges is that SR assurance may be used by agrifood firms as an instrument to “certify” sustainability reporting practices and as a substantive approach to legitimacy (de Villiers et al. 2022).

5 | Contributions, Limitations and Research Agenda

5.1 | Contributions

Our study shows a correlation between the increase in institutional pressure for the preparation and publication of SRs following the adoption of the CSRD (RQ1). Moreover, we find an association between financial indicators—such as leverage and revenue—and the likelihood of obtaining external assurance for SRs in the agrifood sector (Al-Shaer et al. 2022; Girón et al. 2021; Kuzey and Uyar 2017) (RQ2). Hence, our findings reveal that in the Italian agrifood sector a growing share of firms are adopting performance measurement tools that extend beyond purely financial metrics (Clarkson et al. 2019; Agostini et al. 2022; Aureli et al. 2020). This result is particularly promising in light of the ongoing transition of production systems (Fellegara et al. 2023) and the pursuit of more sustainable development models (Adams et al. 2021; Caccialanza and Marinoni 2023; Melissen et al. 2018; Zira et al. 2021), as well as in counteracting the current tendency toward *greenhushing* within the agrifood sector (Caccialanza and Torelli 2024; Galli et al. 2023b).

Our study has both theoretical and practical implications. On the theoretical side, we contribute to the debate on the diffusion of

TABLE 5 | Descriptive statistics for the subsample of reporting firms.

Variable		Mean	Std. dev.	Min	Max
Dependent variable					
External assurance	Binary variable	0.07	0.26	0	1
Explanatory variables					
Leverage ^a	Continuous variable	163.57	152.35	1.61	893.35
Revenue ^a	Continuous variable	583,464.60	1,216,800.00	13,296.21	9,162,996.00
Negative profit margin	Binary variable	0.11	0.32	0	1
Number of employees	Continuous variable	1234.14	3566.11	11	28,429.00
Negative cash flow	Binary variable	0.33	0.47	0	1
General characteristics ^b					
Years of sustainability	Continuous variable	3.11	3.36	1	17
ROE	Continuous variable	7.57	48.1	-964.95	109.06
ROA	Continuous variable	3.57	4.83	-18.2	30.77
EBITDA	Continuous variable	37,393.18	91,392.35	-66,217.32	681,372.30
Profit margin	Continuous variable	3.24	4.88	-9.46	30.16
Asset	Continuous variable	437,234.10	1,014,488.00	10,196.31	7,994,233.00

Note: The panel comprises 463 observations, corresponding to 57 firms observed over multiple years. Asset, Revenue, EBITDA and Profit margins are expressed in thousands of euros.

^aRevenue and Leverage are log-transformed in the estimated model, as their raw values are highly skewed and characterized by high standard deviations across firms.

^bNot included in the estimated model.

Source: Authors' own work.

sustainability reporting as an effect of heightened institutional and regulatory pressures (e.g., Christensen et al. 2021) and explore the legitimizing role of SR assurance within a supply chain characterized by a propensity toward *greenhushing* (Caccialanza and Torelli 2024; Galli et al. 2023b). On the policy side, we document a significant increase in the number of disclosed SRs as an anticipated effect of the CSRD approval, as suggested by the impact assessment conducted at European level (European Commission 2021). This approach is relevant as it allows us to capture the agrifood sector's response to the CSRD-related increase in accountability demands, while identifying financial (slack) variables associated with a higher likelihood of SR assurance (e.g., Heubeck and Ahrens 2024). As the verifiability of what is communicated to stakeholders in terms of SRs content is relevant (García-Sánchez et al. 2019; García-Sánchez et al. 2022; García-Sánchez et al. 2025), at the same time the identification of predictive variables associated with the increased adoption of external SR assurance was significant; in particular, leverage is negatively associated with the propensity to invest in SR assurance, while revenues are positively associated. These results have managerial implications since higher SR disclosure signals both the anticipated compliance with legislative requirements (RQ1) and the reliance on SR assurance as a means of enhancing the credibility and reliability of SRs (RQ2) (e.g., Di Tullio et al. 2025; Przybilla and Müller 2025). Although external assurance is not the only mechanism that can ensure effective performance reporting (Ibáñez-Forés et al. 2023; Richard and Odendaal 2021), it represents an additional lever for enhancing the transparency of sustainability reporting and related value-creation processes for recent adopters (Bini and Bellucci 2020; Boiral and Heras-Saizarbitoria 2020).

5.2 | Limitations

Our study is not without limitations. First, our data and empirical approach do not allow us to make causal claims, which has important implications that should be noted. Regarding RQ1, we observe a statistically significant increase in the number of sustainability reports between 2020 and 2021. However, this pattern cannot be causally attributed to regulatory pressure related to the CSRD. At most, we can document an association between heightened institutional pressure and increased reporting; however, we cannot conclude that the former caused the latter. To establish a credible causal link, we would need to address potential endogeneity and control for unobservable factors that may also drive reporting increase. These factors include shifts in consumer demand for sustainable products and increasing investor demand for ESG-related information and disclosure. Regarding RQ2, even though we included time and firm fixed effects to strengthen the reliability of our findings, the estimated relationship between external assurance and firm characteristics should still be interpreted as non-causal. The decision to obtain external assurance may be influenced by unobservable factors that vary over time and across firms, such as managerial commitment to sustainability, reputational concerns following controversies, pressure from key investors, and exposure to regulatory scrutiny and stakeholder activism (e.g., Birkey et al. 2016). Consequently, we cannot rule out selection into assurance or residual endogeneity. Therefore, we frame our results as associational evidence rather than causal effects. Finally, we acknowledge a limitation regarding external validity. Our evidence is closely tied to the characteristics of the Italian agrifood

TABLE 6 | First year of sustainability reporting and first year with external assurance by firm.

Firm	First-report year	First-assurance year
Firm 1	2018	2019
Firm 2	2021	2021
Firm 3	2020	2020
Firm 4	2019	2019
Firm 5	2021	2021
Firm 6	2018	2020
Firm 7	2013	2021
Firm 8	2021	2021
Firm 9	2021	2021
Firm 10	2021	2021
Firm 11	2021	2021
Firm 12	2020	2020
Firm 13	2014	2020
Firm 14	2012	2020
Firm 15	2016	2016
Firm 16	2014	2019
Firm 17	2021	2021
Firm 18	2021	2021

Source: Authors' own work.

TABLE 7 | Logit model estimation results.

External assurance	Coef.	SE	p
Log leverage	-2.47***	0.75	0.000
Log revenue	5.85***	1.75	0.000
Negative profit margin	-0.56	0.91	0.541
Number of employees	0.00	0.00	0.378
Negative cash flow	0.64	0.88	0.470
Number of obs.		158	
Number of groups		18	
Pseudo R ²		0.053	
Time fixed effects		Yes	
Individual fixed effects		Yes	

Note: Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. 463 panel observations; however, 305 observations were lost with the introduction of individual and time fixed effects because of no variation in the outcome.

Abbreviation: SE: Standard error.

Source: Authors' own work.

sector. In principle, it may be transferable to industries with similar structures in countries with regulatory conditions and reporting requirements similar to those analyzed in our study.

However, the extent to which these findings can be generalized to substantially different industries or countries with different regulatory frameworks is limited and would require dedicated cross-country and cross-sector investigations.

Further studies can explore a broad range of manufacturing value chains. This analysis, moreover, cannot assess the actual ability of individual companies to achieve their self-proposed or adopted objectives beyond what has been declared, due to the limited impact that documentary evidence and external assurance may have. This analysis is limited to a single national context; therefore, this sample selection criterion was aimed at improving internal homogeneity (of products, variables and country effects) but it does not explicitly explore the set of national factors that may influence the propensity to disclose, as in cross-country settings that have already been explored by prior studies (Caccialanza and Torelli 2024; Galli et al. 2023b).

5.3 | Research Agenda and Concluding Remarks

This study has focused on several key aspects of sustainability reporting within Italian agrifood supply chains. However, our analysis does not capture the 2025 policy developments—namely, the discussion and approval of the “Omnibus package” and the related “stop-the-clock” measures—which may alter firms' incentives not only to publish SRs but also to obtain (limited) external assurance, especially among SMEs engaging in voluntary disclosure. Because post-2025 data are not yet available, we cannot assess these effects empirically. Future work should explicitly track how these regulatory adjustments reshape SR uptake and assurance decisions, with particular attention to SME heterogeneity. In this regard, future research could examine whether changes in the pressure for mandatory sustainability reporting result from the upward revision of size thresholds for mandatory disclosure, as suggested by the current discussion and approval process of the ‘Omnibus package’. Consistent with this perspective, further uncertainty is expected both in firms' propensity to report and disclose sustainability performance and in the diffusion of the new ESRS issued by EFRAG for CSRD implementation. Additional studies could also compare the spread of reasonable versus limited assurance practices across the European context and, ultimately, investigate country-level differences in agrifood firms' behavior.

Acknowledgments

Open access publishing facilitated by Università degli Studi di Bologna, as part of the Wiley - CRUI-CARE agreement.

Endnotes

¹ Similarly to what was proposed by Doni et al. (2020), we focused on companies that were already publishing reports before the implementation of the new normative regulation—namely European Directive 2014/95 for Doni et al. (2020) – and those that started doing so because they were required by the regulation as “public interest entities.” Accordingly, we supposed that also the CSRD intervention has had significant impacts with respect to the issues of transparency of companies towards stakeholders, high and comparable level of non-financial disclosure, incentive for the introduction of non-financial performance indicators. Specifically, the original European Directive

2014/95, transposed in Italy through Legislative Decree No. 256/2016, is to be applied to “public interest entities”, that is, taking as reference the distinction based on three main indicators: (i) the number of employees exceeding 500 and at least one of the other two thresholds (ii) the balance sheet total exceeding € 20 million or (iii) the net turnover exceeding € 40 million.

²The implementation of the CSRD follows a phased-in approach (“waves”) based on company type and size. The first wave applies from fiscal year 2024 (reports published in 2025) to large public-interest entities already subject to the NFRD; the second wave from fiscal year 2025 to other large undertakings; the third wave from fiscal year 2026 to listed SMEs, small and non-complex credit institutions, and captive insurance undertakings; and the final wave, optionally deferred to 2028, for listed SMEs making use of the transitional opt-out.

³Under the previous NFRD framework, Italy required that the non-financial statement be accompanied by an attestation of conformity issued by the statutory auditor/audit firm—implemented as a limited assurance engagement art. 3 (10) of Legislative Decree 254/2016 2016 and CONSOB (Italian Companies and Exchange Commission—Commissione Nazionale per le Società e la Borsa) Implementing Regulation No. 20267/2018 - see CONSOB (2018). The CSRD keeps limited assurance as the starting point EU-wide and empowers the Commission to adopt limited-assurance standards by 1 October 2026 and, subject to a feasibility assessment, reasonable-assurance standards by 1 October 2028. At EU level, limited-assurance standards must be adopted by 1 October 2026, and—subject to a feasibility assessment—the Commission is empowered to adopt reasonable-assurance standards by 1 October 2028; meanwhile, the CEAOB issued non-binding Guidelines on limited assurance on 30 September 2024 to drive convergence (European Commission 2024; CEAOB 2024).

⁴Italy transposed the CSRD via Legislative Decree No. 125 of 6 September 2024, published in the Gazzetta Ufficiale, Serie Generale No. 212, on 10 September 2024, and entered into force on 25 September 2024. The decree aligns national law with ESRS and updates the audit/assurance framework for sustainability information, effectively replacing the prior NFRD transposition (Legislative Decree 254/2016 2016). Following the decree, CONSOB conducted a public consultation and adopted Resolution No. 23463 on 12 March 2025, amending the Issuers’ Regulation to operationalize oversight of sustainability statements and related assurance. These acts together establish the legal and supervisory infrastructure for sustainability reporting and assurance in Italy and signal the progressive integration of CSRD requirements into domestic enforcement and market practice (CONSOB 2025).

References

Abela, M. 2022. “A New Direction? The “Mainstreaming” of Sustainability Reporting.” *Sustainability Accounting, Management and Policy Journal* 13, no. 6: 1261–1283.

AccountAbility. 2008. “AA1000APS Accountability Principles Standard 2008.” <https://www.accountability.org/standards/aa1000-accountability-principles>.

Accountancy Europe. 2025. “CSRD Transposition Tracker.” https://accountancyeurope.eu/wp-content/uploads/2025/04/250905_CSRD-transposition-tracker.pdf.

Adams, C. A., and F. Mueller. 2022. “Academics and Policymakers at Odds: The Case of the IFRS Foundation Trustees’ Consultation Paper on Sustainability Reporting.” *Sustainability Accounting, Management and Policy Journal* 13, no. 6: 1310–1333.

Adams, D., J. Donovan, and C. Topp. 2021. “Achieving Sustainability in Food Manufacturing Operations and Their Supply Chains: Key Insights From a Systematic Literature Review.” *Sustainable Production and Consumption* 28: 1491–1499.

Agnusdei, G. P., and B. Coluccia. 2022. “Sustainable Agrifood Supply Chains: Bibliometric, Network and Content Analyses.” *Science of the Total Environment* 824: 153704.

Agostini, M., E. Costa, and B. Korca. 2022. “Non-Financial Disclosure and Corporate Financial Performance Under Directive 2014/95/EU: Evidence From Italian Listed Companies.” *Accounting in Europe* 19, no. 1: 78–109.

Alsahali, K. F., and R. Malagueño. 2022. “An Empirical Study of Sustainability Reporting Assurance: Current Trends and New Insights.” *Journal of Accounting and Organizational Change* 18, no. 5: 617–642.

Al-Shaer, H., K. Albitar, and K. Hussainey. 2022. “Creating Sustainability Reports That Matter: An Investigation of Factors Behind the Narratives.” *Journal of Applied Accounting Research* 23, no. 3: 738–763.

Al-Shaer, H., and M. Zaman. 2018. “Credibility of Sustainability Reports: The Contribution of Audit Committees.” *Business Strategy and the Environment* 27, no. 7: 973–986.

Arvidsson, S., and J. Dumay. 2022. “Corporate ESG Reporting Quantity, Quality and Performance: Where to Now for Environmental Policy and Practice?” *Business Strategy and the Environment* 31, no. 3: 1091–1110. <https://doi.org/10.1002/bse.2937>.

Aureli, S., M. Del Baldo, R. Lombardi, and F. Nappo. 2020. “Nonfinancial Reporting Regulation and Challenges in Sustainability Disclosure and Corporate Governance Practices.” *Business Strategy and the Environment* 29, no. 6: 2392–2403.

Barghathi, Y., D. Collison, and L. Crawford. 2018. “Earnings Management and Audit Quality: Stakeholders’ Perceptions.” *Journal of Management and Governance* 22: 629–659. <https://doi.org/10.1007/s10997-017-9396-2>.

Barney, J. 1991. “Firm Resources and Sustained Competitive Advantage.” *Journal of Management* 17, no. 1: 99–120.

Baudot, L., and D. J. Cooper. 2022. “Regulatory Mandates and Responses to Uncomfortable Knowledge: The Case of Country-By-Country Reporting in the Extractive Sector.” *Accounting, Organizations and Society* 99: 101308.

Bebbington, J., and A. Rubin. 2022. “Accounting in the Anthropocene: A Roadmap for Stewardship.” *Accounting and Business Research* 52, no. 5: 582–596. <https://doi.org/10.1080/00014788.2022.2079780>.

Bini, L., and M. Bellucci. 2020. *Integrated Sustainability Reporting - Linking Environmental and Social Information to Value Creation Processes Integrated Sustainability Reporting*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-24954-0>.

Bini, L., F. Giunta, R. Miccini, and L. Simoni. 2023. “Corporate Governance Quality and Non-Financial KPI Disclosure Comparability: UK Evidence.” *Journal of Management and Governance* 27: 43–74. <https://doi.org/10.1007/s10997-021-09608-3>.

Birkey, R. N., G. Michelon, D. M. Patten, and J. Sankara. 2016. “Does Assurance on CSR Reporting Enhance Environmental Reputation? An Examination in the US Context.” *Accounting Forum* 40, no. 3: 143–152.

Boiral, O., and I. Heras-Saizarbitoria. 2020. “Sustainability Reporting Assurance: Creating Stakeholder Accountability Through Hyperreality?” *Journal of Cleaner Production* 243: 118596.

Bourgeois, L. J., III. 1981. “On the Measurement of Organizational Slack.” *Academy of Management Review* 6, no. 1: 29–39. <https://doi.org/10.5465/amr.1981.4287985>.

Bouten, L., P. Everaert, L. van Liedekerke, L. de Moor, and J. Christiaens. 2011. “Corporate Social Responsibility Reporting: A Comprehensive Picture?” *Accounting Forum* 35, no. 3: 187–204.

Bradbury, M., J. Jia, and Z. Li. 2022. “Corporate Social Responsibility Committees and the Use of Corporate Social Responsibility Assurance

- Services.” *Journal of Contemporary Accounting and Economics* 18, no. 2: 100317.
- Braun, A. B., C. Visentin, A. W. da Silva Trentin, and A. Thomé. 2021. “List of Relevant Sustainability Indicators in Remediation Processes and Their Validation by Stakeholders.” *Journal of Cleaner Production* 317: 128440.
- Caccialanza, A., D. Cerrato, and D. Galli. 2023. “Sustainability Practices and Challenges in the Meat Supply Chain: A Systematic Literature Review.” *British Food Journal* 125, no. 12: 4470–4497. <https://doi.org/10.1108/BFJ-10-2022-0866>.
- Caccialanza, A., and M. Marinoni. 2023. “The Spread of Sustainability Reporting in the Italian Food Manufacturing Context.” In *Sustainable Transition of Meat and Cured Meat Supply Chain: A Transdisciplinary Approach*, edited by A. M. Fellegara, R. Torelli, and A. Caccialanza. Springer. https://doi.org/10.1007/978-3-031-34977-5_16.
- Caccialanza, A., J. D. Rendtorff, and D. Galli. 2025. “Assessing the Performance of Sustainability Practices in an Italian Food Supply Chain.” *Sustainability Accounting, Management and Policy Journal* 16, no. 7: 328–365. <https://doi.org/10.1108/SAMPJ-01-2024-0020>.
- Caccialanza, A., A. Sartori, S. Gubelli, F. R. Giannini, and E. Capri. 2023. “The Sustainability of Meat and Cured Meat Supply Chain: Where Are We Now?” In *Sustainable Transition of Meat and Cured Meat Supply Chain: A Transdisciplinary Approach*, edited by A. M. Fellegara, R. Torelli, and A. Caccialanza. Springer. https://doi.org/10.1007/978-3-031-34977-5_15.
- Caccialanza, A., and R. Torelli. 2024. “The Role of Trade Associations in Promoting Corporate Sustainability Transition and Reporting: A Case Study in the Food Supply Chain.” *Corporate Social Responsibility and Environmental Management* 31, no. 5: 4469–4486. <https://doi.org/10.1002/csr.2807>.
- Cagno, E., M. Negri, A. Neri, and M. Giambone. 2023. “One Framework to Rule Them All: An Integrated, Multi-Level and Scalable Performance Measurement Framework of Sustainability, Circular Economy and Industrial Symbiosis.” *Sustainable Production and Consumption* 35: 55–71.
- Caiado, R. G. G., R. de Freitas Dias, L. V. Mattos, O. L. G. Quelhas, and W. Leal Filho. 2017. “Towards Sustainable Development Through the Perspective of Eco-Efficiency-A Systematic Literature Review.” *Journal of cleaner production* 165: 890–904.
- Carungu, J., R. Di Pietra, and M. Molinari. 2021. “Mandatory vs Voluntary Exercise on Non-Financial Reporting: Does a Normative/Coercive Isomorphism Facilitate an Increase in Quality?” *Meditari Accountancy Research* 29, no. 3: 449–476. <https://doi.org/10.1108/MEDAR-08-2019-0540>.
- Casey, R. J., and J. H. Grenier. 2015. “Understanding and Contributing to the Enigma of Corporate Social Responsibility (CSR) Assurance in the United States.” *Auditing: A Journal of Practice & Theory* 34, no. 1: 97–130. <https://doi.org/10.2308/ajpt-50736>.
- CEAOB. 2024. “CEAOB Guidelines on Limited Assurance on Sustainability Reporting.” https://finance.ec.europa.eu/document/download/8ac2df18-2ae1-4bc7-9d87-a4a740e48f5e_en?filename=240930-ceaob-guidelines-limited-assurance-sustainability-reporting_en.pdf.
- Christensen, H. B., L. Hail, and C. Leuz. 2021. “Mandatory CSR and Sustainability Reporting: Economic Analysis and Literature Review.” *Review of Accounting Studies* 26, no. 3: 1176–1248.
- Clarkson, P., Y. Li, G. Richardson, and A. Tsang. 2019. “Causes and Consequences of Voluntary Assurance of CSR Reports. International Evidence Involving Dow Jones Sustainability Index Inclusion and Firm Valuation.” *Accounting, Auditing & Accountability Journal* 32, no. 8: 2451–2474.
- Conca, L., F. Manta, D. Morrone, and P. Toma. 2021. “The Impact of Direct Environmental, Social, and Governance Reporting: Empirical Evidence in European-Listed Companies in the Agri-Food Sector.” *Business Strategy and the Environment* 30, no. 2: 1080–1093.
- CONSOB. 2018. “Regolamento di attuazione del d.lgs. 254/2016 – Delibera n. 20267.” https://www.consob.it/documents/1912911/1950567/reg_consob_2018_20267.pdf.
- CONSOB. 2025. *Resolution No. 23463 Amending the Issuers’ Regulation to Operationalize Oversight of Sustainability Statements*. Rome: Commissione Nazionale per le Società e la Borsa. <https://www.consob.it/web/area-pubblica/-/delibera-n.-23463>.
- Contrafatto, M. 2014. “The Institutionalization of Social and Environmental Reporting: An Italian Narrative.” *Accounting, Organizations and Society* 39, no. 6: 414–432.
- Cooper, S., and G. Michelon. 2022. “Conceptions of Materiality in Sustainability Reporting Frameworks: Commonalities, Differences and Possibilities.” In *Handbook of Accounting and Sustainability*, 44–66. Edward Elgar Publishing.
- Corallo, A., M. C. De Lorenzi, M. E. Latino, and M. Menegoli. 2025. “Sustainability-Driven Legitimacy Through Industry 4.0: Insights From European Agri-Food Giants.” *Corporate Social Responsibility and Environmental Management* 32: 7772–7792.
- CREA – Centro di ricerca Politiche e Bioeconomia. 2024. “Commercio con l'estero dei prodotti agroalimentari 2023.” <https://www.crea.gov.it/-/commercio-con-l-estero-migliora-la-bilancia-agroalimentare-nel-2023-nuovi-record-per-gli-scambi-agroalimentari-6-6%25-l-export-e-4-1%25-l-import->.
- Crippa, M., E. Solazzo, D. Guizzardi, F. Monforti-Ferrario, F. N. Tubiello, and A. J. N. F. Leip. 2021. “Food Systems Are Responsible for a Third of Global Anthropogenic GHG Emissions.” *Nature Food* 2, no. 3: 198–209.
- Daniel, F., F. T. Lohrke, C. J. Fornaciari, and R. A. Turner Jr. 2004. “Slack Resources and Firm Performance: A Meta-Analysis.” *Journal of Business Research* 57, no. 6: 565–574.
- de Villiers, C., M. la Torre, and M. Molinari. 2022. “The Global Reporting Initiative’s (GRI) Past, Present and Future: Critical Reflections and a Research Agenda on Sustainability Reporting (Standard-Setting).” *Pacific Accounting Review* 34, no. 5: 728–747.
- Devin, B., and C. Richards. 2018. “Food Waste, Power, and Corporate Social Responsibility in the Australian Food Supply Chain.” *Journal of Business Ethics* 150: 199–210. <https://doi.org/10.1007/s10551-016-3181-z>.
- Dhaliwal, D. S., O. Z. Li, A. Tsang, and Y. G. Yang. 2011. “Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting.” *Accounting Review* 86, no. 1: 59–100.
- Di Tullio, P., M. La Torre, and M. Rea. 2025. “Sustainability Reporting Regulation: Hypes, Myths and Reflections.” *Management Decision* ahead-of-print No. ahead-of-print.
- Dienes, D., R. Sassen, and J. Fischer. 2016. “What Are the Drivers of Sustainability Reporting? A Systematic Review.” *Sustainability Accounting, Management and Policy Journal* 7, no. 2: 154–189.
- Doni, F., S. Bianchi Martini, A. Corvino, and M. Mazzoni. 2020. “Voluntary Versus Mandatory Non-Financial Disclosure: EU Directive 95/2014 and Sustainability Reporting Practices Based on Empirical Evidence From Italy.” *Meditari Accountancy Research* 28, no. 5: 781–802.
- Elbardan, H., A. Uyar, and C. Kuzey. 2023. “CSR Reporting, Assurance, and Firm Value and Risk: The Moderating Effects of CSR Committees and Executive Compensation.” *Journal of International Accounting, Auditing and Taxation* 53: 100579.
- European Commission. 2020. “A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System (Communication COM(2020) 381 Final).” *European Commission*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0381>.

- European Commission. 2021. "Commission Staff Working Document: Impact Assessment — Accompanying the document Proposal for a Directive of the European Parliament and of the Council amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting (SWD (2021) 150 Final)." <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52021SC0150>.
- European Commission. 2024. "FAQs—Corporate Sustainability Reporting (CSRD) (limited assurance by 1 Oct 2026; empowerment for reasonable assurance by 1 Oct 2028)." https://finance.ec.europa.eu/document/download/c4e40e92-8633-4bda-97cf-0af13e70bc3f_en?filename=240807-faqs-corporate-sustainability-reporting_en.pdf.
- European Parliament resolution. 2021. "European Parliament Resolution of 20 October 2021 on a Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System (2020/2260(INI))." https://www.europarl.europa.eu/doceo/document/TA-9-2021-0425_EN.html.
- Falchi, A., G. Grolleau, and N. Mzoughi. 2022. "Why Companies Might Under-Communicate Their Efforts for Sustainable Development and What Can Be Done?" *Business Strategy and the Environment* 31, no. 5: 1938–1946.
- Farooq, M. B., and C. De Villiers. 2019. "Understanding How Managers Institutionalise Sustainability Reporting: Evidence From Australia and New Zealand." *Accounting, Auditing & Accountability Journal* 32, no. 5: 1240–1269.
- Fellegara, A. M., R. Torelli, and A. Caccialanza. 2023. "Sustainable Transition of Meat and Cured Meat Supply Chain: A Transdisciplinary Approach." *Spring* 282: 1–282. <https://doi.org/10.1007/978-3-031-34977-5>.
- Fiandrino, S., D. Busso, and D. Vrontis. 2019. "Sustainable Responsible Conduct Beyond the Boundaries of Compliance: Lessons From Italian Listed Food and Beverage Companies." *British Food Journal* 121, no. 5: 1035–1049.
- Figge, F., and T. Hahn. 2004. "Sustainable Value Added—Measuring Corporate Contributions to Sustainability Beyond Eco-Efficiency." *Ecological Economics* 48, no. 2: 173–187.
- Font, X., I. Elgammal, and I. Lamond. 2017. "Greenhushing: The Liberate Undercommunicating of Sustainability Practices by Tourism Businesses." *Journal of Sustainable Tourism* 25, no. 7: 1007–1023.
- Gallego-Álvarez, I., and M. C. Pucheta-Martínez. 2022. "The Moderating Effects of Corporate Social Responsibility Assurance in the Relationship Between Corporate Social Responsibility Disclosure and Corporate Performance." *Corporate Social Responsibility and Environmental Management* 29, no. 3: 535–548.
- Galli, D., R. Torelli, and A. Caccialanza. 2023a. "The VIS Assessment Tool for the Cured Meat Italian Supply Chain: Fostering Accountability for Sustainability Through a FAO SAFA-Based Framework." In *Sustainable Transition of Meat and Cured Meat Supply Chain. CSR, Sustainability, Ethics & Governance*, edited by A. M. Fellegara, R. Torelli, and A. Caccialanza. Springer. https://doi.org/10.1007/978-3-031-34977-5_17.
- Galli, D., R. Torelli, and A. Caccialanza. 2023b. "Sustainability Performance and Sustainability Reporting in SMEs: A Love Affair or a Fight?" *Journal of Management & Organization* 30: 1–26. <https://doi.org/10.1017/jmo.2023.40>.
- Gangi, F., A. Meles, S. Monferrà, and M. Mustilli. 2020. "Does Corporate Social Responsibility Help the Survivorship of SMEs and Large Firms?" *Global Finance Journal* 43: 100402.
- García-Sánchez, I. M., M. E. Gómez-Miranda, F. David, and L. Rodríguez-Ariza. 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* 26, no. 6: 1392–1406.
- García-Sánchez, I. M., N. Hussain, C. Aibar-Guzmán, and B. Aibar-Guzmán. 2022. "Assurance of Corporate Social Responsibility Reports: Does It Reduce Decoupling Practices?" *Business Ethics, the Environment & Responsibility* 31, no. 1: 118–138. <https://doi.org/10.1111/beer.12394>.
- García-Sánchez, I. M., N. Hussain, C. Aibar-Guzmán, and B. Aibar-Guzmán. 2025. "ESG Controversies and External Assurance: Examining Their Impact on Firm Value and Image." *British Accounting Review* 101704: 101704.
- George, G. 2005. "Slack Resources and the Performance of Privately Held Firms." *Academy of Management Journal* 48, no. 4: 661–676.
- Gerber, R., A. Smit, and M. Botha. 2024. "An Evaluation of Environmental, Social, and Governance Reporting in the Agricultural Sector." *Business Strategy & Development* 7, no. 1: e316.
- Giner, B., and M. Luque-Vilchez. 2022. "A Commentary on the "New" Institutional Actors in Sustainability Reporting Standard-Setting: A European Perspective." *Sustainability Accounting, Management and Policy Journal* 13, no. 6: 1284–1309.
- Gipper, B., C. Leuz, and M. Maffett. 2020. "Public Oversight and Reporting Credibility: Evidence From the PCAOB Audit Inspection Regime." *Review of Financial Studies* 33, no. 10: 4532–4579.
- Gipper, B., S. Ross, and S. X. Shi. 2025. "ESG Assurance in the United States." *Review of Accounting Studies* 30, no. 2: 1753–1803.
- Girón, A., A. Kazemikhasragh, A. F. Cicchiello, and E. Panetti. 2021. "Sustainability Reporting and Firms' Economic Performance: Evidence From Asia and Africa." *Journal of the Knowledge Economy* 12: 1741–1759.
- Hahn, R., and M. Kühnen. 2013. "Determinants of Sustainability Reporting: A Review of Results, Trends, Theory, and Opportunities in an Expanding Field of Research." *Journal of Cleaner Production* 59: 5–21.
- Harris, C., S. Perkiss, and F. A. Tanim. 2024. "Sustainability in the Chocolate Industry: A Scoping Review of Accounting Journals and the Development of a Research Agenda." *Meditari Accountancy Research* 33, no. 1: 220–246. <https://doi.org/10.1108/MEDAR-05-2024-2477>.
- Hazaea, S. A., J. Zhu, S. F. Khatib, A. H. Bazhair, and A. A. Elamer. 2022. "Sustainability Assurance Practices: A Systematic Review and Future Research Agenda." *Environmental Science and Pollution Research* 29, no. 4: 4843–4864.
- Heubeck, T., and A. Ahrens. 2024. "Governing the Responsible Investment of Slack Resources in Environmental, Social, and Governance (ESG) Performance: How Beneficial Are CSR Committees?" *Journal of Business Ethics* 198, no. 2: 365–385.
- Hummel, K., C. Schlick, and M. Fifka. 2019. "The Role of Sustainability Performance and Accounting Assurers in Sustainability Assurance Engagements." *Journal of Business Ethics* 154, no. 3: 733–757.
- Ibáñez-Forés, V., V. Martínez-Sánchez, K. Valls-Val, and M. D. Bovea. 2023. "How Do Organisations Communicate Aspects Related to Their Social Performance? A Proposed Set of Indicators and Metrics for Sustainability Reporting." *Sustainable Production and Consumption* 35: 157–172.
- International Auditing and Assurance Standards Board – IAASB. 2009. *FRAME: International Framework for Assurance Engagements, 2009 Edition, Volume 2A. In SAICA Members' Handbook*. 2009th ed. LexisNexis.
- Ioannou, I., and G. Serafeim. 2017. *The Consequences of Mandatory Corporate Sustainability Reporting*, 11–100. Harvard Business School Research Working Paper.
- ISMEA. 2020. "L'Industria Alimentare in Italia." <https://www.ismea mercati.it/flex/cm/pages/ServeAttachment.php/L/IT/D/1%252F1%>

- 252F7%252FD.d228540cc46a1044693c/P/BLOB%3AID%3D10917/E/pdf.
- ISMEA – Istituto di Servizi per il Mercato Agricolo Alimentare. 2024. “Prodotti tipici – DOP e IGP: numeri del settore.” <https://www.ismea.com/mercato-agricolo/typical-products>.
- ISMEA-Qualivita. 2024. *Rapporto ISMEA-Qualivita 2024 sulle produzioni DOP IGP STG*. Istituto di Servizi per il Mercato Agricolo Alimentare/Osservatorio Qualivita. <https://www.qualivita.it/rapporto-ismea-qualivita-2024/>.
- ISPRA – Istituto Superiore per la Protezione e la Ricerca Ambientale. 2024. “Inventario nazionale delle emissioni in atmosfera 1990–2022.” *Informative Inventory Report 2024*: 1–304. https://www.isprambiente.gov.it/files/2024/pubblicazioni/rapporti/iir_r-400_24.pdf/%40%40download/file/IIR_R%20400_24.pdf.
- ISTAT – Istituto Nazionale di Statistica. 2024. “Landamento Dell’economia agricola – Anno.” https://www.istat.it/wp-content/uploads/2024/06/REPORT_ANDAMENTO_ECONOMIA_AGRICOLA_2024-1.pdf.
- Jensen, J. C., and N. Berg. 2012. “Determinants of Traditional Sustainability Reporting Versus Integrated Reporting. An Institutional Approach.” *Business Strategy and the Environment* 21, no. 5: 299–316.
- Jørgensen, S., A. Mjøs, and L. J. T. Pedersen. 2022. “Sustainability Reporting and Approaches to Materiality: Tensions and Potential Resolutions.” *Sustainability Accounting, Management and Policy Journal* 13, no. 2: 341–361.
- Khatri, I., and F. Kjærland. 2023. “Sustainability Reporting Practices and Environmental Performance Amongst Nordic Listed Firms.” *Journal of Cleaner Production* 418: 138172. <https://doi.org/10.1016/j.jclepro.2023.138172>.
- KPMG. 2022. “Global Survey of Sustainability Reporting 2022.” <https://kpmg.com/it/home/insights/2022/12/kpmg-global-survey-of-sustainability-reporting-2022.html>.
- Krasodomska, J., R. Simnett, and D. L. Street. 2021. “Extended External Reporting Assurance: Current Practices and Challenges.” *Journal of International Financial Management & Accounting* 32, no. 1: 104–142.
- Krasodomska, J., E. Zarzycka, and P. Zieniuk. 2025. “Exploring Multi-Level Drivers of Accountants’ Opinions on the Changes Introduced by the Corporate Sustainability Reporting Directive.” *Accounting in Europe* 22, no. 3: 308–325.
- Ku, L. 2024. *From Greenwashing to Green Hushing: The Quiet ESG Challenge*. Euromoney. <https://www.euromoney.com/article/2d8k72kn9o3rnlqel1hlc/opinion/from-greenwashing-to-green-hushing-the-quiet-esg-challenge>.
- Kumar, M., M. Sharma, R. D. Raut, S. K. Mangla, and V. K. Choubey. 2022. “Performance Assessment of Circular Driven Sustainable Agri-Food Supply Chain Towards Achieving Sustainable Consumption and Production.” *Journal of Cleaner Production* 372: 133698.
- Kuzey, C., and A. Uyar. 2017. “Determinants of Sustainability Reporting and Its Impact on Firm Value: Evidence From the Emerging Market of Turkey.” *Journal of Cleaner Production* 143: 27–39.
- Lai, A., and R. Stacchezzini. 2021. “Organisational and Professional Challenges Amid the Evolution of Sustainability Reporting: A Theoretical Framework and an Agenda for Future Research.” *Meditari Accountancy Research* 29, no. 3: 405–429.
- Lee, T., W. T. Liu, and J. X. Yu. 2021. “Does TMT Composition Matter to Environmental Policy and Firm Performance? The Role of Organizational Slack.” *Corporate Social Responsibility and Environmental Management* 28, no. 1: 196–213.
- Legislative Decree No. 125/2024. 2024. “CSRD Transposition; GU Series Generale No. 212, 10-09-2024; in Force.” https://www.gazzettaufficiale.it/gazzetta/serie_generale/caricaDettaglio?dataPubblicazioneGazzetta=2024-09-10&numeroGazzetta=212.
- Legislative Decree No. 254/2016 (NFRD transposition). 2016. “Gazzetta Ufficiale.” <https://www.gazzettaufficiale.it/eli/id/2017/01/10/17G00002/sg>.
- León-Bravo, V., A. Moretto, R. Cagliano, and F. Caniato. 2019. “Innovation for Sustainable Development in the Food Industry: Retro and Forward-Looking Innovation Approaches to Improve Quality and Healthiness.” *Corporate Social Responsibility and Environmental Management* 26, no. 5: 1049–1062.
- Maas, K., S. Schaltegger, and N. Crutzen. 2016. “Integrating Corporate Sustainability Assessment, Management Accounting, Control, and Reporting.” *Journal of Cleaner Production* 136: 237–248.
- Maroun, W., and A. Prinsloo. 2020. “Drivers of Combined Assurance in a Sustainable Development Context: Evidence From Integrated Reports.” *Business Strategy and the Environment* 29, no. 8: 3702–3719.
- Melissen, F., A. N. Mzembe, U. Idemudia, and Y. Novakovic. 2018. “Institutional Antecedents of the Corporate Social Responsibility Narrative in the Developing World Context: Implications for Sustainable Development.” *Business Strategy and the Environment* 27, no. 6: 657–676.
- MIMIT – Ministero delle Imprese e del Made in Italy. 2024. “Industria alimentare.” <https://www.mimit.gov.it/impresa/competitivita-e-nuove-imprese/industria-alimentare>.
- Moroney, R., C. Windsor, and Y. T. Aw. 2012. “Evidence of Assurance Enhancing the Quality of Voluntary Environmental Disclosures: An Empirical Analysis.” *Accounting & Finance* 52, no. 3: 903–939.
- Mount, M. P., G. Ertug, K. Kavusan, G. George, and T. Zou. 2024. “Reeling in the Slack: An Integrative Review to Reinstate Slack as a Central Theoretical Construct for Management Research.” *Academy of Management Annals* 18, no. 2: 473–505.
- Naidoo, M., and A. Gasparatos. 2018. “Corporate Environmental Sustainability in the Retail Sector: Drivers, Strategies and Performance Measurement.” *Journal of Cleaner Production* 203: 125–142.
- O’Dwyer, B., D. Owen, and J. Unerman. 2011. “Seeking Legitimacy for New Assurance Forms: The Case of Assurance on Sustainability Reporting.” *Accounting, Organizations and Society* 36, no. 1: 31–52.
- Ordóñez-Ponce, E., A. Clarke, and A. MacDonald. 2021. “Business Contributions to the Sustainable Development Goals Through Community Sustainability Partnerships.” *Sustainability Accounting, Management and Policy Journal* 12, no. 6: 1239–1267.
- Oware, K. M., and K. Appiah. 2022. “CSR Assurance Practice and Financial Distress Likelihood: Evidence From India.” *Meditari Accountancy Research* 30, no. 6: 1470–1492. <https://doi.org/10.1108/MEDAR-10-2020-1055>.
- Oware, K. M., and T. Mallikarjunappa. 2021. “Assurance Service and Performance. Effect of CEO Characteristics.” *Meditari Accountancy Research* 29, no. 1: 39–59.
- Pizzi, S., A. Caputo, A. Corvino, and A. Venturelli. 2020. “Management Research and the UN Sustainable Development Goals (SDGs): A Bibliometric Investigation and Systematic Review.” *Journal of Cleaner Production* 276: 124033.
- Pizzi, S., and L. Coronella. 2025. “Are Listed SMEs Ready for the Corporate Sustainability Reporting Directive? Evidence From Italy.” *Business Ethics, the Environment & Responsibility* 34, no. 4: 1730–1741.
- Pizzi, S., F. Rosati, and A. Venturelli. 2021. “The Determinants of Business Contribution to the 2030 Agenda: Introducing the SDG Reporting Score.” *Business Strategy and the Environment* 30, no. 1: 404–421.
- Przybilla, C., and M. Müller. 2025. “Assurance of First Wave CSRD Sustainability Statements: Insights From 600+ Reports on Assurance and Reporting Quality.” *Sustainability Reporting Navigator*. <https://www.sustainabilityreportingnavigator.com/>

www.srnv.com/insights/assurance-of-first-wave-csrd-sustainability-statements.

Quick, R., and P. Inwinkl. 2020. "Assurance on CSR Reports: Impact on the Credibility Perceptions of Non-Financial Information by Bank Directors." *Meditari Accountancy Research* 28, no. 5: 833–862.

Reimsbach, D., R. Hahn, and A. Gürtürk. 2018. "Integrated Reporting and Assurance of Sustainability Information: An Experimental Study on Professional Investors' Information Processing." *European Accounting Review* 27, no. 3: 559–581.

Richard, G., and E. Odendaal. 2021. "Credibility-Enhancing Mechanisms, Other Than External Assurance, in Integrated Reporting." *Journal of Management and Governance* 25: 61–93. <https://doi.org/10.1007/s10997-020-09509-x>.

Ropes & Gray. 2025. "CSRD Transposition Tracker—Italy Implementation and Regulatory Updates." https://www.ropesgray.com/-/media/files/alerts/2025/09/20250922_CSRD_Transposition_Tracker.pdf.

Ruiz-Barbadillo, E., and J. Martínez-Ferrero. 2022. "The Choice of Incumbent Financial Auditors to Provide Sustainability Assurance and Audit Services From a Legitimacy Perspective." *Sustainability Accounting, Management and Policy Journal* 13, no. 2: 459–493. <https://doi.org/10.1108/SAMPJ-04-2021-0121>.

Schoeneborn, D., M. Morsing, and A. Crane. 2020. "Formative Perspectives on the Relation Between CSR Communication and CSR Practices: Pathways for 'Walk'ing, 'Talk'ing, and T(w)alking." *Business and Society* 59, no. 1: 5–33.

Schwoy, S. M., A. Dutzi, and J. Messing. 2025. "Silence Is Golden?—Analysing the Transparency of ESG Controversies in Corporate Reporting Within the Pharmaceutical and Textile Industry." *Management Decision* 63, no. 2: 665–707.

Segarra, A., and M. Teruel. 2012. "An Appraisal of Firm Size Distribution: Does Sample Size Matter?" *Journal of Economic Behavior & Organization* 82, no. 1: 314–328.

Seuring, S., and M. Müller. 2008. "From a Literature Review to a Conceptual Framework for Sustainable Supply Chain Management." *Journal of Cleaner Production* 16, no. 15: 1699–1710.

Sierra, L., A. Zorio, and M. A. García-Benau. 2013. "Sustainable Development and Assurance of Corporate Social Responsibility Reports Published by Ibex-35 Companies." *Corporate Social Responsibility and Environmental Management* 20, no. 6: 359–370. <https://doi.org/10.1002/csr.1303>.

Simnett, R., A. Vanstraelen, and W. F. Chua. 2009. "Assurance on Sustainability Reports: An International Comparison." *Accounting Review* 84, no. 3: 937–967. <https://doi.org/10.2308/accr.2009.84.3.937>.

Simoni, L., L. Bini, and M. Bellucci. 2020. "Effects of Social, Environmental, and Institutional Factors on Sustainability Report Assurance: Evidence From European Countries." *Meditari Accountancy Research* 28, no. 6: 1059–1087.

Somoza, A. 2023. "Voluntary Sustainability Assurance in Small and Medium-Sized Entities: The Role of Country Origin in Europe." *Business Strategy and the Environment* 32, no. 1: 462–483. <https://doi.org/10.1002/bse.3155>.

South Pole. 2022. "Going Green, Then Going Dark – One in Four Companies Are Keeping Quiet on Science-Based Targets." <https://www.southpole.com/news/going-green-then-going-dark>.

The European Parliament. 2022. "Directive of the European Parliament and of the Council Amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as Regards Corporate Sustainability Reporting." <https://data.consilium.europa.eu/doc/document/PE-35-2022-INIT/en/pdf>.

The Institute of Internal Auditors. 2012. "International Standards for the Professional Practice of Internal Auditing."

Thun, T. W., and H. Zülch. 2023. "The Effect of Chief Sustainability Officers on Sustainability Reporting—A Management Perspective." *Business Strategy and the Environment* 32, no. 4: 2093–2110. <https://doi.org/10.1002/bse.3238>.

Topp-Becker, J., and J. D. Ellis. 2017. "The Role of Sustainability Reporting in the Agri-Food Supply Chain." *Journal of Agriculture and Environmental Sciences* 6, no. 1: 17–29.

Tyson, T., and C. A. Adams. 2020. "Increasing the Scope of Assurance Research: New Lines of Inquiry and Novel Theoretical Perspectives." *Sustainability Accounting, Management and Policy Journal* 11, no. 2: 291–316. <https://doi.org/10.1108/SAMPJ-03-2018-0067>.

Vitolla, F., N. Raimo, and M. Rubino. 2019. "Appreciations, Criticisms, Determinants, and Effects of Integrated Reporting: A Systematic Literature Review." *Corporate Social Responsibility and Environmental Management* 26, no. 2: 518–528.

Voss, G. B., D. Sirdeshmukh, and Z. G. Voss. 2008. "The Effects of Slack Resources and Environmental Threat on Product Exploration and Exploitation." *Academy of Management Journal* 51, no. 1: 147–164.

Waheed, A., and Q. Zhang. 2020. "Effect of CSR and Ethical Practices on Sustainable Competitive Performance: A Case of Emerging Markets From Stakeholder Theory Perspective." *Journal of Business Ethics* 175, no. 4: 1–19.

Weber, O., and G. Saunders-Hogberg. 2018. "Water Management and Corporate Social Performance in the Food and Beverage Industry." *Journal of Cleaner Production* 195: 963–977.

Westerholz, H. K., and J. Höhler. 2022. "Corporate Social Responsibility Reporting in the Food Industry—Comparison of Co-Operatives and Investor-Owned Dairies." *Corporate Social Responsibility and Environmental Management* 29, no. 1: 211–222.

Yahya, F., L. Meiling, C. C. Lee, M. Waqas, and Z. Shaohua. 2022. "Gender Diversity, Sustainability Reporting, CEO Overconfidence, and Efficient Risk-Taking: Evidence From South Asian Agri-Food Industry." *Canadian Journal of Agricultural Economics/Revue Canadienne D'agroeconomie* 70, no. 3: 219–238.

Zaman, R., M. B. Farooq, F. Khalid, and Z. Mahmood. 2021. "Examining the Extent of and Determinants for Sustainability Assurance Quality: The Role of Audit Committees." *Business Strategy and the Environment* 30, no. 7: 2887–2906.

Zampone, G., and M. Guidi. 2024. "Sustainability Reporting and Assurance Practices Contribution to SDG Disclosure: Evidence From Communication on Progress (CoP)." *Meditari Accountancy Research* 32, no. 7: 236–265.

Zeisel, S. 2020. "Is Sustainability a Moving Target? A Methodology for Measuring CSR Dynamics." *Corporate Social Responsibility and Environmental Management* 27, no. 1: 283–296.

Zira, S., L. Rydhmer, E. Ivarsson, R. Hoffmann, and E. Rööös. 2021. "A Life Cycle Sustainability Assessment of Organic and Conventional Pork Supply Chains in Sweden." *Sustainable Production and Consumption* 28: 21–38.