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Francesco De Luca *Editors*

Non-financial Disclosure and Integrated Reporting

Theoretical Framework and Empirical
Evidence



 Springer

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Editors

Lino Cinquini 
Institute of Management
Sant'Anna School of Advanced Studies
Pisa, Italy

Francesco De Luca 
Department of Management and Business
Administration
“G. d’Annunzio” University of Chieti-Pescara
Pescara, Italy

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Preface

As generally agreed, especially in the last decade, corporate reporting has extended its boundaries beyond the “traditional” economic and financial communication, including what is generally defined as non-financial information. If in a first phase, the informative contents of the non-financial area mainly refer to the disclosure on risks and related coping policies, in more recent times they extend to information concerning environmental and social sustainability, corporate governance, business model, intangibles, the development of territories and communities, etc. Moreover, at the same time, the regulatory action also intervened with policing purposes, in particular by the European legislator, which with Directive 2014/95/EU, has mandated a set of minimum information contents in non-financial disclosure topic and has recently (April 21, 2021) issued the new proposal of European Directive on Sustainability Reporting (CSRD). This proposal extends the scope to all large companies and all companies listed on regulated markets (except listed micro-enterprises) require the audit (assurance) of reported information. It introduces more detailed reporting requirements, including intangibles, according to mandatory EU sustainability reporting standards which will be issued by EFRAG and based on a multi-stakeholder, and not only investor, perspective.

In this dynamic context, different standards of non-financial reporting found application across the world in the last decade. However, with the aim of favoring the comparability of non-financial information, it appears clearly that there is a growing need for achieving the convergence of the non-financial reporting frameworks and the recently enacted Consultation Paper of IFRS Foundation on Sustainability Reporting suggests the need for a single standard-setting framework. Besides, there is a lively debate about how managing the different existing standards, particularly GRI in conjunction with other standards (International Integrated Reporting Council (IIRC), the Carbon Disclosure Project (CDP), or the SASB) to achieve a globally accepted and a more comprehensive framework on non-financial reporting system. This would also allow a more comparable sustainability reporting cross borders and will result in more efficient investments allocation mechanism. In this perspective, the process of convergence has recently found also a significant

result in the establishment of the Value Reporting Foundation by the merge of IIRC and SASB.

Considering the multiple facets of the issue, the objective of this book is deepening the topic in a multiple perspective of analysis that contemplates the different categories of stakeholders involved (e.g., preparers, users, and standard setters), different frameworks and standards for non-financial reporting (e.g., GRI, IR, ESG rating), and different contexts of application (e.g., large companies, SMEs, public companies, public bodies, non-profits). Thus, the detailed research objectives could be articulated according to the following main research questions that reflect the structure of the book Parts:

1. Which is the development level that corporate non-financial disclosure achieved so far, and which are its main features? (Part I).
2. How and to what extent environmental and sustainability disclosure characterize corporate non-financial reporting? (Part II).
3. How and to what extent intangibles and intellectual capital disclosure characterize corporate non-financial reporting? (Part III).
4. Which are the underpinning concepts and theories of the Integrated Reporting in its attempt to allow stakeholders' understanding of companies' ability to value creation in the long run? Which is the main empirical evidence about the practical experience of integrated reporting with specific reference to digital transformation? (Part IV).
5. How and to what extent non-financial information is accountable? Which is the role, and which are the standards for auditing and assurance of non-financial information? Which is the role of regulation bodies between mandatory requirements and companies' discretion in non-financial disclosure? (Part V).
6. Which is the role of companies' CEOs and CFOs in developing companies' non-financial and/or integrated reporting? (Part VI).

To the first research question is devoted the Part I of this book: "Corporate Non-financial disclosure" that features three chapters.

In the first chapter, the authors deal with corporate governance mechanisms to assess if they can affect the readability of non-financial reporting as required by Directive No. 2014/95/EU. In particular, findings show that board independence, the social committee, gender diversity, and the social rating (i.e., the ESG score) improve the non-financial information readability of Italian listed firms.

The second chapter aims to deepen the emerging issue of cyber-risk that represents a major threat for organizations, among non-financial risks, due to the growing sophistication and variety of data breaches and cyber-attacks. Findings call for an urgent increase of the top management knowledge and sensitivity toward operational risks arising from data violations. In fact, the authors provide evidence that companies with board-level technology committee are more committed to cybersecurity and more inclined to provide information on cybersecurity breach.

The third chapter explores how the adoption of the Sustainable Development Goal (SDG)s and the introduction of the 2014/95/EU Directive are likely to promote organizational changes in the context of Sustainability Report preparers. To this end,

the authors provide a case study that shows how the introduction of the EU Directive has strengthened the culture of non-financial information within the organization, encouraging greater awareness and high-value global engagement, changing its growth model, and placing relevant SDGs at the core of the value chain process.

To the second research question is devoted the Part II of this book: “Social and Environmental Sustainability” that features three chapters.

The first chapter provides a systematic literature review of 205 research articles published from 1989 to 2019 about sustainability reporting in non-financial disclosure. It emerges that besides the main theories—namely legitimacy, stakeholder, and institutional—also the theories referred to agency, signaling, discourse, attribution, social movement, structuration, and multi-theory frameworks have found application to the field of sustainability reporting.

The second chapter presents a systematic literature review of empirical studies about sustainability and greenhouse gas (GHG) emissions disclosure during the period 1999–2018. The review shows the main gaps in the literature to be filled. These gaps are mainly referable to the quality/reliability of GHG emissions disclosure, the explanation of if and how a certain type of disclosure can answer the stakeholders’ expectations, the identification of the effects of the emissions reduction (and the connected disclosure) on the firms’ (financial) performance, the identification and analysis of GHG emissions-related risk management.

The third chapter investigates the practice of Sustainability reporting in higher education institutions. Thanks to the use of a case study of an Italian university, the research shows that there are some of the current challenges for the education sector which mainly involve a better engagement of external stakeholders and the embedding of social reporting in the institution’s accounting, planning, and control systems.

Part III of the book, “Intangibles and Intellectual Capital Disclosure,” addresses the third research question and presents five chapters. The first chapter of this Part aims at analyzing the theoretical aspects of intangibles and intellectual capital disclosure through the main frameworks of integrated reporting and non-financial information. The authors suggest that the GRI framework and the Integrated Reporting framework can be considered as systematic new ways to frame and disclose IC by considering the linkages between IC performance and the other non-financial indicators (e.g., social, environmental, etc.). The second chapter proposes an empirical investigation about the extent to which NFI about Intangibles, Intellectual Capital, and CSR affects market performance. Findings support the hypothesis that higher level of financial performance originates from several possible combinations/configurations of NFI, and this appears to be in line with the emergent scholar debate on intellectual capital and CSR reporting and disclosure. The authors of the third chapter draw on agency theory and analyze the role of the ownership structure characteristics (e.g., ownership concentration, managerial ownership, institutional ownership, and government ownership) in IC disclosure policies. Their results show a negative effect of ownership concentration, managerial ownership, and state ownership, while institutional ownership appears to have non-significant influence on the quality of IC information. The fourth chapter

investigates IC disclosure before and after the introduction of the EU Directive 2014/95 in Italy, to assess its effects on companies' disclosure practices. Results highlight some concerns about the effective materiality of disclosed IC information: in fact, although the overall amount of IC information has increased in 2017 compared to 2016, it appears that companies continue to privilege the communication of qualitative, non-sensitive information, while quantitative measures are communicated only for those issues for which standardized measures exist. The authors of the fifth chapter try to shed light on the role of intellectual capital (IC) in the nonprofit sector, as an under-investigated research area within the IC studies. Results show that two human capital sub-components (training, value added) and one structural capital sub-component (services) mainly affect the return on assets (ROA).

Part IV of the book, "Integrated Reporting," addresses the fourth research question through five chapters. The first chapter proposes a theoretical approach to review the scientific literature to identify the theories most frequently adopted in the field of IR research and the extent to which these theories have been applied. Findings show that researchers adopted more than one theory to provide a comprehensive and integrated interpretation of the IR phenomenon. Furthermore, many new theories are emerging even if Legitimacy Theory and Agency Theory are considered very frequently as the theoretical foundation of the IR research. Instead, the second chapter aims at developing a literature review of the studies that have investigated the informative and communicative role of IR. This analysis highlights the existence of a limited number of studies that have addressed the topic. Therefore, further research is expected about the effective application of integrated thinking and integrated communication (at the internal level), as drivers of readability and comprehension of the integrated report. Third chapter provides a review of the current state of knowledge on integrated reporting in public sector. Based on this review, the authors call for further research on different settings, both in terms of geographical area and organizational focus for a better understanding of the potentialities and criticalities of integrated reporting in public sector. Moreover, further empirical studies are strongly suggested in order to deepen the understanding of integrated reporting in practice. Fourth chapter investigates the role of technology for the development of integrated reporting practices and delineates its contribution toward the achievement of this advanced form of corporate accountability. It emerges that although the vast majority of stakeholders claims for a more central role of technology, concerns still persist on how this can be consistent with the "entity-specific" approach that this reporting practice derives from. In the same vein, the fifth chapter offers some considerations about the potential contribution to non-financial disclosure (NFD) and integrated reporting (IR) that could derive from the use of eXtensible Business Reporting Language (XBRL), with particular reference to its Inline XBRL (iXBRL) specification. The authors support that this electronic language can favor the preparation of NFD and IR along with their use, especially in terms of usability, processability, and comparability.

The fifth research question is addressed in Part V "Accountability and Auditing of Non-financial information and Integrated Reporting" of this book that is composed of eight chapters. The first chapter examines to what extent the voluntary choice

among different reporting frameworks is used to comply with the EU Directive 2014/95 and how this could affect the comparability of non-financial reporting throughout the EU. Results of the comparative analysis show that the high flexibility of action granted to companies in providing NFI seems to go against the main aim of comparability. Moreover, among the different frameworks and guidelines settings, the GRI standards appears to be the most compliant with the EU directive requirements. The second chapter analyzes the role of disclosure on intangible assets in reducing information asymmetry, increasing the level of transparency and accountability toward stakeholders, and positively influencing corporate performance. The authors combine a literature review with an overview of how the IIRC and the GRI address this issue. Findings show that companies tend to manage the available “knowledge” flow for differentiating, achieving sustainable competitive advantages, and implement corporate strategy favoring greater integration between financial and non-financial information. The third chapter discusses of which kind of assurance best serves the interests of the users of NFI and what can be expected as emerging trends in for the coming years. It emerges that reasonable assurance is still rarely performed due to the absence of a common sustainability accounting standard along with the qualitative and narrative feature of non-financial information. In the near future, we may expect that the double materiality concept will maintain its relevance and that companies will enlarge the scope of the reasonable assurance to sensible items, such as GHG emissions, energy and water consumption. In the fourth chapter, the author reviews the academic research on the assurance of non-financial information. The review documents three main research lines that focus on (i) the meaning and features of assurance, (ii) the factors driving the demand for assurance, and (iii) the assurance process and content of assurance statements issued by different assurance providers. Further research is then called on five macro issues: integration between financial and non-financial verification processes; integration of internal and external control systems; development and use of a theoretical framework to guide analyses of the assurance topic; the impact of assurance on reporters and stakeholders; and the use of new technologies. The fifth chapter analyzes national differences among “non-financial disclosure” reports in a cross-country comparison after the introduction of Directive 2014/95/EU and provides some support for the fact that the lack of detail in the Directive, and in national transposition laws, could have increased the quantity of reported information, but did not promote an effective organizational change, while the reliability of the information disclosed, and its traceability is still a concern. The sixth chapter examines the international literature on the behavior, aspirations, and contributions of stakeholders about non-financial disclosure, after the issuance of the Directive 2014/95/EU. The analysis provides some evidence that the non-financial information currently disclosed by companies does not effectively meet the needs of stakeholders. In the seventh chapter, the authors adopt an empirical approach to understand how audit is developed for non-financial information assurance. To this end, semi-structured interviews are conducted to auditors of an Italian auditing firm. Interviews suggest that reporting process is relevant for the quality non-financial information, while the use of ISEA 3000 revised standard enables the audit process and legitimizes the

audit. In the same vein, the eight chapter provides a comprehensive discussion of materiality and assurance in an Integrated Report (IR) context. The authors provide evidence that assurance enhances the credibility of financial and NFI disclosed in IR, but this effect is much stronger when the quality of assurance improves, i.e., when the assurance level is reasonable rather than limited, even if there are still few cases of IR subjected to reasonable assurance as there are no recognized standards for IR assurance.

Lastly, Part VI “The role of CFOs and controllers in the Non-financial Reporting” is structured through two chapters. The first addresses the research question about which is the role played by the CFO (or controller) in the non-financial information process. The authors provide some preliminary evidence on the existing relationships between management accounting and non-financial disclosure, although they call for further research in this sense. Some evidence is provided of the fact that the skills of the CFO (or controller), the characteristics of the sector, the degree of involvement of the CEO, the pressure of external stakeholders, the presence of a pre-existing corporate culture to the organization itself are all factors that affect non-financial information quality. The second chapter complements this analysis through a case analysis of two Italian listed companies, and tries to investigate who participates, and which is the role of the CFO/controller in the materiality determination process. Findings show that the key organizational actors involved in the materiality determination process and their roles (including the CFO and the Chief Audit Executive) are different between the two selected case studies and the related materiality assessment is mainly driven by the information needs of capital providers. Moreover, the complexity of the stakeholder audience, the CFO’s skills, and the extension of managerial proxies to the CFO are implications relevant for the materiality process.

In sum, the push toward a strengthened role of companies’ non-financial Disclosure and Integrated Reporting keeps lively the debate among academics, practitioners, and regulators about the possible approaches, framework, contents, principles, and standards that should oversee these forms of reporting. Through several contributions, conducted both with qualitative and quantitative methodologies, this book provides an up-to-date portrait of the above debate by exploring corporate non-financial disclosure either in its mandated contents or voluntary information. Thus, the chapters of this book encompass the different lines of non-financial disclosure, namely non-financial risk reporting, sustainability reporting, and intellectual capital reporting, as well as the integration of financial and non-financial information through the IR, the assurance of the NFD and IR through auditing activities, and the role of management in NFD and IR.

Of course, all findings provided throughout the chapters of this book have practical implications with specific regard to policymakers to address the current discussion on the new aforementioned CSRD proposal. Specifically:

1. The new EU Directive should broaden the scope and require more detailed and standardized reporting is necessary, and relevant for investors.

2. The quality of disclosure might be falling off due to the firm's limitation in structural capital. As a matter of fact, there is evidence that constraints in company size might lead to a poorer disclosure practice. Thus, policymakers should pay more attention to determining a reasonable balance between the scope of the Directive and the level of detail on the information that should be included in sustainability reports.
3. The standardization of non-financial information should ease the process toward a reasonable assurance (and comparability) of non-financial information in favor of internal and external stakeholders.
4. Organizational change within companies is necessary to provide non-financial information that is material for stakeholders.

Finally, the Editors would like to express their gratitude to the Editorial Board of the SIDREA Series in Accounting and Business Administration for having considered this book within this prestigious series. The Editors would also sincerely thank all the authors that contributed to this Book and all the reviewers for their invaluable work in helping authors to improve the quality of their scientific contribution.

Pisa, Italy
Pescara, Italy

Lino Cinquini
Francesco De Luca

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Contributors

Marisa Agostini Department of Management, Ca' Foscari University, Venezia, Italy

Alessandra Allini Department of Economics, Management and Institutions, University of Naples "Federico II", Napoli, Italy

Claudia Arena Department of Economics, Management and Institutions, University of Naples "Federico II", Napoli, Italy

Francesco Badia Department of Business and Law Studies, University of Bari "Aldo Moro", Bari, Italy

Mara Del Baldo Department of Economics, Society and Politics, School of Economics, University of Urbino "Carlo Bo", Urbino, Italy

Francesca Bartolacci Department of Economics and Law, University of Macerata, Macerata, Italy

Francesco Bavagnoli Department of Studies for Economy and Business, University of Piemonte Orientale, Novara, Italy

Marco Bellucci Department of Economics and Management, University of Firenze, Firenze, Italy

Valentina Beretta Department of Economics and Management, University of Pavia, Pavia, Italy

Laura Bini Department of Economics and Management, University of Florence, Florence, Italy

Adele Caldarelli Department of Economics, Management and Institutions, University of Naples "Federico II", Napoli, Italy

Cristian Carini Department of Economics and Management, University of Brescia, Brescia, Italy

Ferdinando Di Carlo Department of Mathematics, Computer Science and Economics, University of Basilicata, Potenza, Italy

Jonida Carungu Guildhall School of Business and Law, London Metropolitan University, London, UK

Simona Catuogno Department of Economics, Management and Institutions, University of Naples “Federico II”, Napoli, Italy

Maria Serena Chiucchi Department of Management, Università Politecnica delle Marche, Ancona, Italy

Mirella Ciaburri Niccolò Cusano University, Rome, Italy

Lino Cinquini Institute of Management, Sant’Anna School of Advanced Studies, Pisa, Italy

Maurizio Cisi Department of Management, University of Torino, Torino, Italy

Marco Contri Department of Economics and Management, University of Firenze, Firenze, Italy

Michela Cordazzo Department of Management, “Ca’ Foscari” University, Venezia, Italy

Katia Corsi Department of Business and Economics, University of Sassari, Sassari, Italy

Damiano Cortese Department of Foreign Languages, Literatures and Modern Cultures, University of Torino, Torino, Italy

Luigi Corvo Department of Management and Law, University “Tor Vergata”, Rome, Italy

Armando Della Porta Department of Management and Business Administration, “G. d’Annunzio” University of Chieti-Pescara, Pescara, Italy

Vittorio Dell’Atti Department of Business and Law Studies, University of Bari “Aldo Moro”, Bari, Italy

Maria Chiara Demartini Department of Economics and Management, University of Pavia, Pavia, Italy

Grazia Dicuonzo Department of Business and Law Studies, University of Bari “Aldo Moro”, Bari, Italy

Emanuele Doronzo Department of Management, Finance and Technology, LUM University, Bari, Italy

Federica Farneti Department of Sociology and Business Law, “Alma Mater Studiorum” University of Bologna, Bologna, Italy

Elisa Rita Ferrari Faculty of Economics and Law, Kore University of Enna, Enna, Italy

Silvia Fissi Department of Economics and Management, University of Firenze, Firenze, Italy

Andrea Fradeani Department of Economics and Law, University of Macerata, Macerata, Italy

Graziana Galeone Department of Business and Law Studies, University of Bari “Aldo Moro”, Bari, Italy

Laura Girella Department of Economics “Marco Biagi”, University of Modena and Reggio Emilia, Modena, Italy

Marco Giuliani Department of Management, Università Politecnica delle Marche, Ancona, Italy

Elena Gori Department of Economics and Management, University of Firenze, Firenze, Italy

Carmela Gulluscio Department of Law and Economics Sciences, Unitelma Sapienza University of Rome, Rome, Italy

Rita Lamboglia Department of Business and Economics, University of Naples “Parthenope”, Napoli, Italy

Rosa Lombardi Department of Law and Economics of Productive Activities, Sapienza University of Rome, Rome, Italy

Francesco De Luca Department of Management and Business Administration, “G. d’Annunzio” University of Chieti-Pescara, Pescara, Italy

Francesca Magli Department of Business and Law, University of Milano-Bicocca, Milan, Italy

Daniela Mancini Faculty of Law, University of Teramo, Teramo, Italy

Alessandro Marelli Faculty of Political Science, University of Teramo, Teramo, Italy

Arcangelo Marrone Department of Management, Finance and Technology, LUM University, Bari, Italy

Lucia Marsura PwC Italy, Milan, Italy

Mauro Martinelli Department of Business and Law, University of Milano-Bicocca, Milan, Italy

Sara Giovanna Mauro Institute of Management, Sant’Anna School of Advanced Studies, Pisa, Italy

Diego Mazzitelli Department of Business Administration and Law, University of Calabria, Cosenza, Italy

Romilda Mazzotta Department of Business Administration and Law, University of Calabria, Cosenza, Italy

Fiorenza Meucci Department of Economics, Management and Institutions, University of Naples “Federico II”, Napoli, Italy

Matteo Molinari Department of Business and Law, University of Siena, Siena, Italy

Giuseppe Nicolò Department of Business Studies – Management and Innovation Systems, University of Salerno, Salerno, Italy

Francesco Paolone Mercatorum University, Rome, Italy

Lavinia Pastore Department of Management and Law, University “Tor Vergata”, Rome, Italy

Palmira Piedepalumbo Department of Business and Economics, University of Naples “Parthenope”, Napoli, Italy

Giacomo Pigatto Institute of Management, Sant’Anna School of Advanced Studies, Pisa, Italy

Pina Puntillo Department of Business Administration and Law, University of Calabria, Rende, Italy

Nicola Raimo Department of Management, Finance and Technology, LUM University, Bari, Italy

Federica Ricci Department of Law and Economics of Productive Activities, Sapienza University of Rome, Rome, Italy

Patrizia Riva Department of Studies for Economy and Business, University of Piemonte Orientale, Novara, Italy

Alberto Romolini International Telematic University UNINETTUNO, Rome, Italy

Michele Rubino Department of Management, Finance and Technology, LUM University, Bari, Italy

Claudia Salvatore Department of Economics, Management, Society and Institutions, University of Molise, Campobasso, Italy

Vincenzo Scafarto Department of Human Sciences, Society and Health, University of Cassino and Southern Lazio, Cassino, Italy

Antonella Silvestri Department of Business Administration and Law, University of Calabria, Cosenza, Italy

Claudio Sottoriva Department of Economics and Business Management Sciences, Università Cattolica del Sacro Cuore, Milan, Italy

Michela Soverchia Department of Economics and Law, University of Macerata, Macerata, Italy

Riccardo Stacchezzini Department of Business Administration, University of Verona, Verona, Italy

Lara Tarquinio Department of Economics Studies, “G. d’Annunzio” University of Chieti-Pescara, Pescara, Italy

Andrea Tenucci Sant’Anna School of Advanced Studies, Institute of Management, Pisa, Italy

Silvia Testarmata Cusano University, Rome, Italy

Sara Trucco Faculty of Economics, University of International Studies of Rome, Rome, Italy

Cinzia Vallone Department of Business and Law, University of Milano-Bicocca, Milan, Italy
Link Campus University, Rome, Italy

Stefania Veltri Department of Business Administration and Law, University of Calabria, Cosenza, Italy

Monica Veneziani Department of Economics and Management, University of Brescia, Brescia, Italy

Filippo Vitolla Department of Management, Finance and Technology, LUM University, Bari, Italy

Annamaria Zampella Department of Economics, Management and Institutions, University of Naples Federico II, Napoli, Italy

Part I
Corporate Non-financial Disclosure

Do Corporate Governance Mechanisms Affect the Non-financial Reporting Readability? Evidence from Italy



Adele Caldarelli, Alessandra Allini, Claudia Salvatore,
Annamaria Zampella, and Fiorenza Meucci

1 Introduction

It is a long time that academics, practitioners, and regulators discussed the importance of non-financial information (hereafter NFI) for stakeholders (e.g., Haller et al., 2017). For several reasons, disclosure of NFI greatly evolved from the first attempts in the 1970s (e.g., Hahn & Kühnen, 2013), and in many countries it became widespread, although in its voluntary form.

Thus, the recent introduction of Directive 2014/95/EU on NFI, entered in force in 2017, marked an important step on this issue. It is the result of a very long process conceived around two main aspects: the perceived inability of the corporate annual report to provide a complete understanding of firm performance and risk profile, and the need to meet information demands of stakeholders, as a whole (Deegan, 2017; Hess, 2019; Jackson et al., 2020). In particular, there was the belief that the excessive focus on financial information could be perceived as a form of neglecting firms' social and environmental responsibilities addressed by stakeholders (e.g., climate change, human rights, and corruption) (De Luca, 2020). Instead, this regulation should have the effect to encourage greater transparency and generate stakeholders' confidence about firms' corporate sustainability activities, which, in turn, should reward them.

A. Caldarelli · A. Allini (✉) · A. Zampella · F. Meucci
Department of Economics, Management, Institutions, University of Naples "Federico II",
Napoli, Italy
e-mail: adele.caldarelli@unina.it; alessandra.allini@unina.it; annamaria.zampella@unina.it;
fiorenza.meucci@unina.it

C. Salvatore
Department of Economics, Management, Society and Institutions, University of Molise,
Campobasso, Italy
e-mail: claudiasalvatore@unimol.it

Each Member State has completed the process of transferring the Directive into its own local law.

The EU Directive establishes some minimum requirements for the types of NFI that larger companies and public-interest entities must publicly reveal to their users, with the aim to “enhance the consistency and comparability of NFI reported” (European Union, 2014). Thus, it represents an important regulatory move toward harmonizing the non-financial reporting practices around Europe. Empirically, recent studies confirm the higher comparability level of NFI after the new rule was issued (e.g., Aureli et al., 2019).

The EU Directive also marks a shift from a voluntary to a mandatory NFI disclosure base (Lai et al., 2018). Regarding the mandatory reporting, the idea that regulation could promote the quality of NFI has been already confirmed in the literature (i.e., Deegan, 2002). Therefore, scholars advocate that regulation may also help in avoiding an incomplete and lack of accuracy, neutrality, and objectivity information, leading to a more transparent disclosure.

Transparency has especially been referred to as corporate financial reporting, but nowadays it has been widely transported to NFI, as a way to improve accountability (Lai et al., 2018). Firms, however, retain discretion about the NFI content, since the EU Directive does not prescribe any specific standard regarding policy adoption, outcomes, and type of information.

Based on this argument, the present chapter elicits to understand how firms are responding to this new regulation, by focusing on NFI readability, as a qualitative characteristic of corporate disclosure, with the aim to contribute to the literature on the quality of NFI. The readability represents how much a text is understandable for users; hence, if stakeholders deal with a less readable disclosure they may feel uncomfortable in evaluating overall firm responsibilities, performance, and risk profiles (Asay et al., 2018).

In particular, this study evaluates whether some corporate governance mechanisms (i.e., board independence, gender diversity, and the presence of a social committee), commonly observed in sustainability disclosure studies (e.g., Jaggi et al., 2020; Jain & Jamali, 2016; Liao et al., 2015; Pucheta-Martínez & Gallego-Álvarez, 2019; Sundarasan et al., 2016), may contribute to enhancing NFI readability. While these governance features have been mostly investigated by scholars in terms of their effects on sustainability disclosure, research in the specific area of NFI readability is very limited, which deserves further investigation. The interpretive lens of the legitimacy theory is adopted, since disclosure policies could be regarded as a way to adopt different strategies to influence the organization’s relationships with its constituents (Deegan, 2002; Mio et al., 2020). Thus, the question arises as to whether corporate governance addresses the readability of NFI in its attempt to gain legitimacy.

We address this purpose by focusing on the transposition of the Directive in Italy, through the Italian Legislative Decree No. 254, of December 30, 2016.

One of the main reasons making Italy a good case for investigation is that this country is among the five European States with the highest percentage of assured NFI reports (Cordazzo et al., 2020; KPMG, 2011). We select a sample of 82 firms

listed in the Italian Stock Exchange mandated by the EU Directive, and cover the periods 2017 and 2018. Thus, we perform a regression analysis to test the association between readability indexes and some corporate governance variables and other control variables.

The final results emphasize the important role played by the board independence, the social committee, gender diversity, and the social rating in establishing good practices in terms of transparency of NFI. Indeed, some studies have demonstrated that readability is a proxy of transparency (e.g., Ben-Amar & Belgacem, 2018) that improves the stakeholders' dialogue and firms' accountability.

We believe that this study contributes to the academic debate and may be helpful to policymakers, managers, and regulators by providing fresh insights on the role played by some corporate governance mechanisms on NFI readability. Overall, the chapter is structured as follows: Section 2 regards to background and literature review; Section 3 is the theoretical background and hypotheses development; Sections 4 and 5 are respectively the research design and the results; Section 6 deals with the discussion; and lastly, the concluding remarks.

2 Background and Literature Review

2.1 The Directive No 2014/95/EU

The European Union (EU) Directive 2014/95/EU (henceforth the Directive), and the subsequent EU Guidelines 2017, on non-financial and diversity information that entered into force in the fiscal year 2017 in member states require, for the first time, large companies, i.e., those exceeding 500 employees and groups of companies, all of which are considered entities of public interest, to report non-financial and diversity information. This information concerns environmental and social issues, human resources and employee-related information, human rights, anti-corruption, and governance-related issues (Carini et al., 2018), whereas diversity information concerns the diversity policies applied in relation to the composition of the administrative, management, and supervisory bodies of companies and how these policies have been implemented by board members. Companies should provide information on board members with regard to age, gender, educational, and professional backgrounds.

According to the Directive, the objective of NFI is to improve sustainability disclosure and to describe, within a “management commentary-report” or in a separate report, the business model of companies, their attention to social and environmental issues, their corporate policies on sustainability risks, together with their key performance indicators relevant to the business and, consequently, to increase the trust of investors and stakeholders. In fact, thus far financial data and reports were not sufficient, in terms of transparency and accountability, or in terms of satisfying stakeholders' and investors' needs, particularly regarding sustainability.

Indeed, stakeholders do not trust companies given their poor disclosure concerning sustainability issues (De Luca, 2020).

Thus, the recent Directive represented a starting point for legitimizing mandatory corporate reporting on NFI by large private companies. Previously, NFI was disclosed voluntarily only by a few undertakings (Doni et al., 2019). In fact, before the Directive was introduced, there were management incentives to encourage voluntary disclosure of NFI, which played an important role in assessing its quality (Rezaee & Tuo, 2017).

The Directive was issued with the general aim of increasing transparency in corporate communication, in order to satisfy the information needs of investors and of a growing range of stakeholders. In addition, it could reduce information asymmetries between management and stakeholders (Doni et al., 2019), as well as it could enhance the process of harmonization of sustainability reporting and non-financial information throughout Europe (La Torre et al., 2018; Testarmata et al., 2020). Thus, the shift from voluntary to mandatory reporting required by the Directive, could also positively affect the economic performance of companies, their decision-making processes and information systems. It can also improve accountability by supporting the decision-making process of users and adding value to their internal and external stakeholders, which require sustainability information from larger companies. However, others argued that the regulation alone does not necessarily mean better reporting, and the legislation alone may not change reporting practice (La Torre et al., 2018).

The Directive, however, is flexible and it is not clearly specified where to position NFI within corporate reporting, also in order to avoid overlapping of this information. Therefore, NFI can be reported in a non-financial statement in the annual reports, or in the stand-alone reports, namely the sustainability reports (based on the guidelines of the Global Reporting Initiative) or the integrated reports (based on the framework of the International Integrated Reporting Council), which embeds both financial and NFI (i.e., environmental, social, and governance issues). The Directive was transposed into national regulations in each Member States.

Furthermore, in this scenario, the Directive does not establish specific disclosure frameworks or detailed rules for reporting NFI. In fact, it only gives examples and general guidance on interpretation, which leads to heterogeneity of the composition and communication of NFI.

There are some difficulties in understanding what “non-financial information” means for companies, and this sometimes makes the communication process unclear (Doni et al., 2019). For example, the only information provided for prepares and readers of non-financial reports concern environmental and social matters, while no information is provided about how to report human resources, human rights, and anti-corruption disclosures. Therefore, these matters are under investigation (Di Vaio et al., 2020).

To sum up, the Directive does not provide common standards about format and content for reporting and disclosing NFI (Manes-Rossi et al., 2018), unlike international organizations such as the International Integrated Reporting Council and the Global Reporting Initiative, which gave specific guidelines for companies to address

users' needs. In this perspective, some scholars argue that the Directive may appear to be a "policy action," a "regulatory move" rather than a real process of change in disclosing NFI to meet a sustainability challenge (La Torre et al., 2018, p. 614). The Directive could improve the quality of NFI only if this regulation is a stimulus for companies to improve the efficiency of corporate communication on sustainability (Venturelli et al., 2017), in order to satisfy accountability demands (Nicolò et al., 2020).

At the same time, NFI is able to meet stakeholders' information needs if it is also readable (du Toit, 2017). It is noteworthy that, actually, the content of NFI is left to the management's decisions and attitude, due to the absence of specific guidelines or standards. To be readable, the NFI report and the narratives should respect, among others, the guiding principle of materiality, should be trustworthy, relevant, and comprehensible for all stakeholders. Thus, the current research addresses an important gap in the existing literature by understanding the drivers of NFI readability.

2.2 Readability of Non-financial Information

Researchers have developed rationale for ensuring comprehensive information to users. The findings of several studies document that firms have started disclosing information on their social responsibilities to keep stakeholders, especially investors, informed about their activities (e.g., Michelon & Parbonetti, 2012; Plumlee et al., 2015). Under pressure from regulatory agencies, firms also started reporting information on their environment activities (e.g., Freedman & Jaggi, 2009; González-Benito & González-Benito, 2006). Overall, this literature shows that firms have accepted that social and environmental responsibilities play an important role in maximizing their value.

More recently, after the passage of the EU Directive, disclosure of NFI has received greater attention from policymakers, firms, and researchers, along with the desire to improve transparency (Christensen & Miguel, 2018). The NFI disclosure literature has widely investigated factors, motivations, and economic consequences of firms' behaviors to disclose NFI (e.g., Chan et al., 2014; Cordazzo et al., 2020; Hummel & Schlick, 2016; Jaggi et al., 2020; Mio et al., 2020; Qiu et al., 2016). In particular, a stream of research has specially examined how corporate governance mechanisms would impact NFI policies. Overall, studies reported that corporate board independence played an important role in encouraging managers to report more NFI so that users are able to make optimal investment decisions (e.g., Chan et al., 2014; Jain & Jamali, 2016; Sundarasan et al., 2016). Yet, corporate governance literature has been extended to evaluate the role of gender diversity and findings document that female directors encourage higher reporting of NFI (e.g., Adams et al., 2015; Liao et al., 2015; Pucheta-Martínez & Gallego-Álvarez, 2019; Terjesen & Sealy, 2016). Based on firms from different countries, Jaggi et al. (2020) reveal that there is a positive association between reporting of corruption information, as a specific type of NFI, and firms' governance structure.

However, most of these studies are mainly focused on the quantity of NFI, while very few illuminate how it is communicated. In this direction, the debate relating to the readability of NFI disclosure is becoming extremely intense (Wang et al., 2018).

Readability refers to the ease of understanding a written text (Harris & Hodges, 1995). It provides feedback about the comprehension level of the reports by users and ensures that preparers can pass important information to support users' decision-making (Bonsall IV et al., 2017; Kim & Starks, 2016). Users who deal with a less readable disclosure may feel uncomfortable in evaluating firm performance and risk profiles (Asay et al., 2018).

Ziek (2009) posits that assessing how firms communicate their sustainability activities represents an important aspect, and argues that this information should be conveyed using words that elicit the description of moral behaviors. Thus, consistent with Sen et al. (2009), NFI should be accurate.

Despite such importance, there is scarcity of investigation in the context of readability of NFI, and the existing studies mainly investigated the relation between NFI readability and firm performance. For instance, some research analyzes the environmental and social disclosure provided by companies and finds that they tend to prefer higher levels of readability just to compensate for poor financial performance (e.g., Clarkson et al., 2008). Clarkson et al. (2008) built an index based on the GRI list information and find that the related disclosure has a score based on its degree of compliance with GRI guidelines. A contribution by Abu Bakar and Ameer (2011) reveal that CSR readability prepared by Malaysian companies are very difficult to read. Other studies also suggest that companies tend to select more positive news in their NFI reports with the aim to improve their reputation (e.g., Habbitts & Gilbert, 2007), despite the risk to reduce firm credibility. Recently, Melloni et al. (2017) and similarly, Nazari et al. (2017), show that firms with worse social performance tend to provide a less complete NFI disclosure in their Integrated Reporting. In the same vein, Wang et al. (2018) provide evidence that companies with good social performance are more likely to use simple language to disclose their social activities as a way of emphasizing good information.

Nevertheless, and notwithstanding the effort of regulators to put forth a homogeneous landscape, NFI disclosure is still perceived as unclear by users (e.g., Abu Bakar & Ameer, 2011). Under the pressure of the new European regulation, given the increasing importance related to readability, the present chapter is among the first to investigate factors that may improve NFI readability.

3 Theoretical Background and HP Development

3.1 Theoretical Background

Legitimacy theory can offer a theoretical explanation for the NFI readability (Dumay et al., 2015; La Torre et al., 2018; Mazzotta et al., 2020).

The legitimacy is defined by Suchman (1995, pg. 574) as “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.” It is conferred to the organization by its stakeholders and is founded on the idea that society permits firms to operate under the constraints of a social contract, which includes legal and non-legislated expectations from society (Lindblom, 1994; Patten, 1991). If firms do not follow the norms, values, beliefs, and definitions, which are considered socially acceptable by a society, the social contract can be broken. This can lead to a negative impact on firms’ legitimacy and compromise their long-term survival. Thus, such negative effects may generate from poor image, hiring issues, customer dissatisfaction, litigation, among other causes (Ameer & Othman, 2012; Wood, 1991).

From the perspective of the legitimacy theory, disclosure policies are regarded as a means to adopt different strategies to influence the organization’s relationships with other parties (Deegan, 2002), e.g., to provide material to inform users about unknown aspects of the business cycle, or to draw attention to the organization’s strengths (Dowling & Pfeffer, 1975; Lindblom, 1994).

To comply with this purpose, among other things, disclosure should be readable. Consistent with Hyland (2001), writing is perceived as a “social act,” and therefore, effective written communications must reveal the writers’ ability to meet their stakeholders’ information needs. Therefore, a disclosure that is not understandable is unable to meet the users’ information needs (Li, 2008). From this perspective, the NFI readability can be regarded as a characteristic of socially acceptable behavior, since a better understanding of NFI can decrease the distance between the firm’s value system and the society’s value system. Thus, the reaching of legitimacy may represent a theoretical explanation for NFI readability.

3.2 *Hypotheses Development*

3.2.1 **Corporate Board Independence and NFI Readability**

The existing literature strongly supports that independent directors play an important role in firms’ disclosure policies, including NFI strategies (e.g., Lopatta et al., 2017). It is noteworthy that the more independent boards of directors are, the more concerned they are about the long-term objectives of firms, since they are critical to improving the company’s reputation in the market (Johnson & Greening, 1999). It is widely accepted that independent directors provide objective feedback regarding a firm’s operations and performance (Liao et al., 2015), as they are not directly involved in the day-to-day operations (de Villiers et al., 2011). They also ensure more effective internal controls, which include transparent disclosure policies (Jaggi et al., 2020; Prado-Lorenzo & Garcia-Sanchez, 2010; Pucheta-Martínez & Gallego-Álvarez, 2019). Theorists of legitimacy theory also argue that independent directors tend to comply with societal pressures to ensure firm survival, and may improve a

firm's reputation through the communication of easy-to-read corporate disclosure (Hrasky & Smith, 2008).

Considering that independent directors tend to ensure clearer accountability to stakeholders, they are expected to encourage firms to spread and convey NFI that is also understandable, with the aim to keep the firm's legitimacy (Prado-Lorenzo & Garcia-Sanchez, 2010). Based on these arguments, we predict that independent boards of directors would offer convincing motivation to managers to positively comply with the EU Directive by providing a greater NFI readability. Hence, we develop the following hypothesis to test our expectation:

H1:

There is a positive association between firms' NFI readability and the proportion of independent directors on the corporate boards.

3.2.2 Gender Diversity and NFI Readability

The influence of gender diversity on corporate boards of directors has recently been getting an amplified attention by researchers (Ahmed et al., 2017; Kim & Starks, 2016). Gender composition on the board is a critical dimension of corporate governance, since women and men are traditionally, culturally, and socially different (Liao et al., 2015). Extant researchers have confirmed that women differ from men in terms of communication style, personality, educational background, expertise, and career experience (e.g., Feingold, 1994). Previous empirical studies also provide evidence that the presence of female directors on corporate boards rises the board effectiveness (e.g., Ben-Amar & Belgacem, 2018; Liao et al., 2015; Nadeem et al., 2017; Terjesen & Sealy, 2016). Therefore, female directors are likely to be more diligent than male directors, and are believed to be socially responsible, due to higher ethical values, and high carefulness in making corporate decisions (e.g., Cumming et al., 2015; Rao & Tilt, 2016).

Yet, literature confirms that board diversity plays also an important role in enhancing voluntary disclosure including NFI (e.g., Jaggi et al., 2020; Ntim & Soobaroyen, 2013). Biber et al. (1998) argue that female writing is more "involved" and tends to have greater social commitment than male writing (Ishikawa, 2015). Empirically, in a linguistics-based survey with over 3000 respondents, it has been confirmed that women spend more time developing characters and providing descriptions, making their writing easier to read (e.g., Harjoto et al., 2020; Pennebaker, 2011). Even though these studies documented gender differences in writing, to the best of our knowledge, there has been no research to date examining whether board gender diversity may affect NFI readability. We expect that the higher presence of female directors will result in higher NFI readability, because female directors are more effective in the board's activities, showing their leadership and offering valuable contributions to corporate actions. Hence, we test our expectation on the following hypothesis:

H2:

There is a positive association between firms' NFI readability and the proportion of female directors on the corporate boards.

3.2.3 The Sustainability Committee and NFI Readability

Consistent with Biswas et al. (2018) the sustainability committee (SC) “assists the board with overseeing strategies designed to manage social and environmental risks, overseeing management processes and standards and achieving compliance with social and environmental responsibilities and commitments.” This committee helps firms to systematically plan, implement, and review sustainability policies, which also include related disclosure policies (Eberhardt-Toth et al., 2019; Liao et al., 2015). Its voluntary creation can be regarded as evidence of the importance about firms' responsibilities to stakeholders. It is also perceived as a governance mechanism to actively monitor the legitimacy of the firm's environmental and social operations and reputation, and to promote a higher quality of corporate disclosure transparency (e.g., Amran et al., 2014; Arena et al., 2015; del Valle et al., 2019; Helfaya & Moussa, 2017; Liao et al., 2015). Some previous studies empirically confirm that a SC positively heightens social disclosure (Michelon & Parbonetti, 2012). A way to ensure the quality of the SC is to pursue accountability for its outcomes, through a transparent disclosure (Fuente et al., 2017). The SC can be seen as a proxy for board orientation toward greater NFI transparency (Neu et al., 1998). Therefore, it is expected to encourage NFI readability in order to meet greater social acceptance of firms (Deegan, 2002). Its presence should strengthen a real willingness to implement sustainability policies, translating them into tangible actions, including understandable NFI, with the aim to increase legitimacy in the eyes of stakeholders. These arguments lead to expect that the presence of a SC will result in higher NFI readability. Therefore, the hypothesis is stated as follows:

H3:

There is a positive association between firms' NFI readability and the presence of a SC.

4 Research Design

We adopt an Ordinary Least Square (OLS) regression model to test the impact of corporate governance mechanism on NFI readability. White's test and Breusch Pagan's test are both favorable to compliance with the assumptions underlying the OLS. Collinearity is not a problem, as confirmed by the Pearson index and Variance Inflation Factors (VIF).

Table 1 Sample composition

	2017	2018	Total
Initial sample	370	370	740
Financial firms	(34)	(34)	(68)
Firms not complying with the Directive No 2014/95/EU	(221)	(221)	(442)
Firms with missing data	(33)	(33)	(66)
Final sample	82	82	164

4.1 Sample Selection

This research is focused on the Italian setting. We select only non-financial Italian listed firms which are subjected to the EU Directive, for years 2017 and 2018 (first two years of the EU Directive implementation). We extracted the initial sample of 370 firms from Compustat Global Daily—Fundamentals Annual. Then we deleted financial firms, firms excluded by the regulation, firms with missing data, and obtained a final sample of 82 entities. Table 1 shows the sample selection process.

4.2 The Measurement of Variables

4.2.1 Dependent Variables: The Readability Indexes

Several studies adopted various indices to measure the readability of narrative disclosure in annual reports (e.g., Lehavy et al., 2011; Li, 2008; Wang et al., 2018). We select the Gunning Fog, and thus the Flesch Kincaid, as the most well known and reliable indices for readability (Li, 2008). The Gunning fog index (1969), which has been largely adopted in the context of financial reporting is based on the following algorithm:

$$R = 0.4 \times [(n. \text{ Words}/n. \text{ Sentences}) + 100 \times (n. \text{ Complex words}/n. \text{ Words})]$$

This approximately reflects the minimum number of years of education that a common person requires to easily read and understand a text. A Gunning Fog readability score of over 17 means that the text is very complex; a score between 14 and 17 indicates that the text is complex; a score between 12 and 14 indicates that the text is simple; a score below 10 indicates that the text is very simple. Overall, the higher the Gunning Fog index, the lower the readability.

Another indicator, the Flesch Kincaid index, is adopted in this research to give robustness to the analysis. As Loughran and McDonald (2016) suggest, the Flesch Kincaid index is useful in the case of long corporate documents, is easy to calculate, and is not prone to the measurement errors of the readability formulas. It is obtained using the following algorithm:

$$R = (11.8 \times \text{number of syllables}/\text{number of words}) + (0.39 \times \text{number of words}/\text{number of sentences}) - 15.59.$$

In both cases, R = degree of readability.

The index does not relate to grade levels, but to a notional comprehension score out of 100. It is placed on a metric scale and interpreted in terms of school grade levels. Hence, according to Stewart (2003) and Drago et al. (2018), a Flesch Kincaid index readability score between 60 and 100 indicates that the test is simple (i.e., elementary school, junior high school, and high school); a score between 40 and 60 means a medium level of difficulty (i.e., high school and college student); lastly, a score between 0 and 40 indicates a more complex text (i.e., college graduate). Overall, the higher the Flesch Kincaid index, the higher the readability.

Following the approach used in previous studies, we adopt an open source software to collect data (Allini et al., 2017; Beattie et al., 2004; Seah & Tarca, 2006; Weber, 1985). More specifically, for each report, we consider only the text. We observe 2017 and 2018 English reports to avoid data bias.

4.2.2 Independent Variables

In order to test how corporate governance mechanisms impact NFI readability, we select independent directors, female directors, and the presence of a SC.

Board independence (B_IND) is proxied by the ratio of independent directors in relation to the total number of directors on the board (e.g., Liao et al., 2015; Prado-Lorenzo & Garcia-Sanchez, 2010). Similarly, the presence of female directors (W) is computed as the ratio of female directors on the total number of directors on the board (e.g., Jaggi et al., 2020). Lastly, a dummy variable is created for the presence of SC (CSR_C); the variable equals one if the firm has established a SC, zero otherwise (e.g., Elzahar & Hussainey, 2012; Helfaya & Moussa, 2017; Michelon & Parbonetti, 2012).

4.2.3 Control Variables

Control variables are included based on the existing readability studies (e.g., Hassan et al., 2019).

In particular, larger boards (B_SIZE) include a wide range of expertise which results in greater effectiveness in the monitoring role, communication, and decision-making (e.g., Elzahar & Hussainey, 2012). We measured B_SIZE as the log of the total of board's components.

According to Rajasekar (2013), the belonging to a particular sector (S) impacts annual report readability. In this study, a dummy variable is created for belonging to a financial sector; zero otherwise.

Another variable is the social rating (i.e., the Environmental, Social, and Governance—ESG—scores provided by the Thomson Reuters database. The ESG conveys sections related to environmental protection, social responsibility, treatment of employees, respect for human rights, anti-corruption, and bribery, and diversity on company boards (in terms of age, gender, educational, and professional background).

Table 2 Variables definition

Variables	Definition	Source
<i>Dependent variables</i>		
Gunning Fog index (G)	Readability index	Open access software http://readable.com
Flesch Kincaid index (F)	Readability index	Open access software http://readable.com
<i>Independent and control variables</i>		
B_IND	The ratio of independent directors on the total number of directors on the board	BoardEx–Europe
W	The ratio of female directors on the total number of directors on the board	BoardEx–Europe
CSR_C	Dummy variable equals one if the firm has established a CSR committee and zero otherwise	BoardEx–Europe
B_SIZE	Log of the total of board's components	BoardEx – Europe
S	Dummy variable equals one if the firm belongs to financial sector and zero otherwise	Compustat–Global
ESG scores	Scale variables from 0 (D–) to 11 (A+)	Thomson Reuters
Size	Log of total assets	Compustat–Global
ROA	Income before extraordinary items of firm i in year t divided by total assets	Compustat–Global

Academics, like Rezaee and Tuo (2017) and Wang et al. (2018), emphasize the important role of ESG to ensure credibility of NFI and maintain firm legitimacy. According to Thomson Reuters guidelines,¹ the ESG scores lie on a scale that ranges between A+ (high attention to ESG practices) and D- (low attention to ESG practices). This scale is based on 12 grades where we have assigned a scale from 0 (i.e., D–) to 11 (i.e., A+).

Size is also used as a control variable because larger firms have a higher ability to absorb disclosure costs related to non-financial information with positive effects on readability, whereas smaller firms may not be able to bear such costs (Wang et al., 2018). We use the log of total assets as a proxy for firms' size.

Lastly, we added a performance variable related to firm profitability, proxied by the ROA (e.g., Hrasky et al., 2009).

Table 2 resumes the variables involved in this analysis and their measurement.

¹https://www.esade.edu/itemsweb/biblioteca/bbdd/inbbdd/archivos/Thomson_Reuters_ESG_Scores.pdf.

4.3 The Regression Model

Overall, we perform the following equation model:

$$G = \beta_0 + \beta_1 B\_IND + \beta_2 W + \beta_3 CSR\_C + \beta_4 B\_SIZE + \beta_5 S + \beta_6 E\_SCORE + \beta_7 S\_SCORE + \beta_8 G\_SCORE + \beta_9 Size + \beta_{10} ROA + \varepsilon \quad (1)$$

We replicate the same analysis, as robustness, in Model 2, adopting the readability Flesch Kincaid index (F) as the new dependent variable.

5 Results

5.1 Descriptive Statistics

Table 3 shows the industry distribution of our sample firms, classified according to the SIC (Standard Industry Classification) code. Manufacturing firms are the most represented, accounting for 64.6%. Following, firms from transportation, communications, electric, gas, and sanity service sectors, accounting for 17.1%. The other industries are representative each of less than 5% of the total.

Table 4 shows descriptive statistics.

The Gunning Fog index (G) ranges between 9.90 and 61.50 with a mean of 17.11, suggesting that the text is complex enough.

Looking at the Flesch Kincaid index (F), the mean is 14.21, while they have a minimum score of 7.98 and a maximum of 51.50. This result is in line with the Gunning Fog index.

B_IND and W show a mean value (respectively, 0.54 and 0.31) in line with the main literature (i.e., Jaggi et al., 2020).

Table 3 Distribution of Italian firms by industry

Industry	Number of firms in each industry	Percentage
Mining	2	2.4%
Construction	3	3.7%
Manufacturing	53	64.6%
Transportation, communications, electric, gas and sanity service	14	17.1%
Wholesale trade	4	4.9%
Retail trade	1	1.2%
Services	4	4.9%
Public administration	1	1.2%

Table 4 Descriptive statistics

Variables	Min	Max	Mean	St. dev.
Gunning Fog Index	9.90	61.50	17.11	7.22
Flesch Kincaid Index	7.98	51.50	14.21	6.39
B_IND	0.25	0.89	0.54	0.13
W	0	0.67	0.31	0.09
CSR_C	0	1	0.26	0.44
B_SIZE	6	17	10.80	2.07
S	0	1	0.26	0.44
E_SCORE	0	11	5.36	2.44
S_SCORE	2	11	7	1.61
G_SCORE	0	11	5.82	1.66
Size	1.84	5.19	2.97	0.67
ROA	−0.22	0.25	0.07	0.05

Table 5 Additional descriptive statistics per Gunning Fog subindexes

Gunning Fog subindexes	Min	Max	Mean	St. dev.
Social Index	8.70	25.50	15.77	4.15
Environmental Index	9.70	25.30	15.69	4.90
Personal Index	7.90	25.40	16.06	3.78
Human Rights Index	7.80	35.70	17.06	4.86
Corruption Index	9.30	25.90	16.92	3.82

It is also noted that the presence of a SC still appears to be small (0.26 the mean).

The minimum size of the board (B_SIZE) is 6, while the maximum is 17, with a mean of 10.80.

Regarding the sector, only 0.26 belongs to the financial group.

According to Table 4, the average ESG values are respectively, 5.36 for E, 7 for S, and 5.82 for G. Regarding the firm's size, the mean is 2.97, while the profitability index of ROA shows a mean of 0.05.

Table 5 reports additional descriptive statistics about the Gunning Fog subindexes (i.e., social, environmental, personal, human rights, and corruption indexes).

The maximum score is reached by the Human Rights index (35.70), while the others have a similar value (25.50 for Social index, 25.30 for Environmental Index, 25.40 for Personal Index, and 25.90 for Corruption Index, respectively). However, in terms of mean value, the lowest score of G readability index is achieved by the Environmental one (15.69), followed by the Social Index (15.77), Personal (16.06), Corruption index (16.92), and Human Right (17.06).

As aforementioned in the previous section, the higher the Gunning Fog index, the lower the readability. Although means values are almost similar among the type of NFI, showing overall complex readability, when comparing them, it is possible to depict a slightly better readability level for Social and Environmental NFI.

The reason could be attributed to the structure of the Directive, which does not provide standards or rules about format, and especially, content of disclosing NFI (Manes-Rossi et al., 2018); thus, this silence may, in part, justify a generally low level of NFI readability. Instead, the slight better readability level for environmental

and social issues could be explained by considering the pressure of some international organizations—such as the International Integrated Reporting Council, the Global Reporting Initiative (GRI)—which gave specific guidelines to firms to better address users' information needs on these two matters and support consolidated practices in achieving higher transparency.

Table 6 reports the Pearson correlations. Both the readability indexes are positively correlated with each other and with B_IND, CSR_C, W, S, E, S, G, and Size. B_IND is also positively correlated with E, S, G, Size, and ROA; CSR_C is positively correlated with W and S; Despite the correlations between the independent variables, multicollinearity is not an issue in this study. Notwithstanding, we perform VIF.

5.2 Regression Results

Table 7 depicts the OLS regression results. Reported VIF values confirm the absence of multicollinearity. Both models are statistically significant and have a similar R^2 , respectively, 0.41 for Model 1 and 0.40 for Model 2. Our three research hypotheses are confirmed in both models, indeed B_IND is always positive and statistically significant at 1%; while CSR_C and W are positive and statistically significant at 5%. Lastly, E_SCORE is positive and statistically significant with 1% p-value in Model 1, while reaching a p-value of 5% in Model 2.

5.3 Additional Analysis

We split both Gunning Fog and Flesch Kincaid readability index in the following categories of social, environment, employees, human rights, and corruption areas, performing additional regression analysis that corroborate the main findings. Looking at Tables 8 and 9, the main results are confirmed for all areas of NFI disclosures. Yet, the statistical significance of E_SCORE is positive and significant at 5%. Conversely, the S_SCORE is positive and significant only in Model 6b (p-value 5%), while the G_SCORE is positive and statistically significant in all models at 5%, reaching a significance of 1% in Model 5a.

6 Discussion

The results are consistent with the main literature on readability and corporate governance characteristics (e.g., Hassan et al., 2019). Indeed, the entry in force of Directive 2014/95/EU together with the role of the corporate governance seem to

Table 6 Pearson correlation

	G	F	B_IND	CSR_C	W	B_SIZE	S	E_SCORE	S_SCORE	G_SCORE	Size	ROA
G	1											
F	0.99 ^a	1										
B_IND	0.38 ^a	0.40 ^a	1									
CSR_C	0.28 ^a	0.27 ^a	-0.02	1								
W	0.30 ^a	0.29 ^a	0.01	0.94 ^a	1							
B_SIZE	0.06	0.05	0.04	0.01	-0.03	1						
S	0.28 ^a	0.27 ^a	-0.02	1 ^a	0.94 ^a	0.01	1					
E_SCORE	0.35 ^a	0.37 ^a	0.44 ^a	-0.05	-0.03	0.06	-0.05	1				
S_SCORE	0.26 ^a	0.27 ^a	0.46 ^a	-0.11	-0.08	0.04	-0.11	0.80 ^a	1			
G_SCORE	0.21 ^b	0.26 ^b	0.24 ^a	-0.03	-0.02	0.01	-0.03	0.85 ^a	0.60 ^a	1		
Size	0.29 ^a	0.29 ^a	0.46 ^a	0.11	0.06	0.19 ^b	0.11	0.51 ^a	0.48 ^a	0.40 ^a	1	
ROA	-0.03	0.04	-0.16 ^b	-0.05	-0.12	-0.07	-0.05	-0.09	-0.11	-0.03	-0.03	1

^aCorrelation is significant at the 0.01 level

^bCorrelation is significant at the 0.05 level

Table 7 Regression results and robustness

Variables	Model 1—Gunning Fog	VIF	Model 2 <i>Robustness</i> —Flesch Kincaid	VIF
Constant	1.20(7.63)***	—	1.10(6.24)***	—
B_IND	−0.38(−3.69)***	1.48	0.47(4.03)***	1.48
CSR_C	−0.27(−3.25)***	1.94	0.26(2.66)**	1.94
W	−0.43(−1.96)**	1.05	0.47(1.98)**	1.05
B_SIZE	0.18(1.24)	1.09	0.20(1.21)	1.09
S	−0.22(−1.56)	1.59	−0.25(−1.55)	1.59
E_SCORE	−0.12(−2.17)**	1.57	0.12(2.03)**	1.57
S_SCORE	0.03(1.54)	1.44	0.03(1.36)	1.44
G_SCORE	0.04(1.23)	1.19	0.04(0.98)	1.19
Size	−0.01(−0.63)	1.51	−0.02(−0.75)	1.51
ROA	0.09(0.31)	1.64	0.08(0.23)	1.64
F	6.125***		5.834***	
Adj R ²	0.41		0.40	

Observations 164; (t statistic); p-value <1% ***, p-value <5% **, p-value <10% *

guide firms toward pursuing a more transparent and accountable behavior (Fernández-Gago et al., 2018).

Regarding H1, findings confirm a positive association between the NFI readability and board independence. This result is corroborated by a few past studies (e.g., Ben-Amar & Belgacem, 2018; Lander & Auger, 2008; Lopatta et al., 2017), which indicate that board independence is positively related to firm's NFI transparency, as a proxy of readability. Our findings suggest that board independence helps increase stakeholder dialogue, as well as accountability. Based on legitimacy theory, when independent directors favor transparent NFI, they contribute to the firm's survival (Fernández-Gago et al., 2018). Boards with a high presence of independent directors motivate firms to engage in non-financial activities in accordance with societal values (Haniffa & Cooke, 2005; Khan, 2010), then they encourage firms to meet stakeholders' information needs by providing a NFI that is more readable, to reach their approval, resulting in the trusted for legitimacy (e.g., Odriozola & Baraibar-Diez, 2017). In addition, it is also reasonable that to better serve the transparency aim, independent directors entail greater attention toward NFI and prompt firms to encourage more NFI readability, considering the greater scrutiny of policymakers and regulators (Cheng & Courtenay, 2006; Christensen & Miguel, 2018; Prado-Lorenzo & Garcia-Sanchez, 2010).

Another important corporate governance characteristic that positively impacts NFI readability is gender diversity. It is well known, indeed, how a heterogeneous structure of the board favors the complementarity of skills of the top managers, improves the problem-solving attitude, as well as consolidates the system of relations between firm and society, as stated by legitimacy theory. Our findings confirm that female gender, in enhancing the efficiency of the board's volitional process and contributing to the reinforcement of governance mechanisms, leads also to a general

Table 8 Additional analysis

Variables	Model 3a – Gunning Fog_social	VIF	Model 3b – Flesch_social	VIF	Model 4a – Gunning Fog_environ	VIF	Model 4b – Flesch_environ	VIF	Model 5a – Gunning Fog_employees	VIF	Model 5b – Flesch_employees	VIF
Constant	1.10(5.51) ^{***}	–	1.00(4.69) ^{***}	–	1.06(6.61) ^{***}	–	0.95(4.44) ^{***}	–	1.04(6.03) ^{***}	–	0.88(4.37) ^{***}	–
B_IND	–0.21(–1.98) ^{**}	1.48	0.29(2.04) ^{***}	1.48	–0.15(–2.05) ^{***}	1.48	0.34(2.40) ^{***}	1.48	–0.25(–2.25) ^{***}	1.48	0.39(3.01) ^{***}	1.48
CSR_C	–0.21(–1.99) ^{**}	1.94	0.24(2.17) ^{**}	1.94	–0.23(–2.50) ^{***}	1.94	0.08(2.55) ^{***}	1.94	–0.24(–2.66) ^{***}	1.94	0.18(2.03) ^{**}	1.94
W	–0.48(–2.01) ^{**}	1.05	0.52(1.99) ^{**}	1.05	–0.21(–1.96) ^{**}	1.05	0.41(1.97) ^{**}	1.05	–0.34(–2.08) ^{**}	1.05	0.38(2.16) ^{**}	1.05
B_SIZE	0.03(0.17)	1.09	0.05(0.23)	1.09	0.07(0.50)	1.09	0.02(0.75)	1.09	0.02(0.14)	1.09	0.04(–0.20)	1.09
S	–0.28(–1.72) [*]	1.59	–0.32(–1.80) [*]	1.59	–0.16(–1.09)	1.59	–0.17(–0.90)	1.59	–0.07(–0.49)	1.59	–0.05(–0.29)	1.59
E_SCORE	–0.05(–1.96) ^{**}	1.57	0.05(2.00) ^{**}	1.57	–0.05(–2.29) ^{***}	1.57	0.02(2.65) ^{***}	1.57	–0.05(–2.23) ^{***}	1.57	0.03(2.36) ^{**}	1.57
S_SCORE	0.06(0.91)	1.44	0.07(1.04)	1.44	0.04(1.28)	1.44	0.03(0.44)	1.44	0.05(1.40)	1.44	0.11(1.61)	1.44
G_SCORE	–0.08(–1.97) ^{**}	1.19	0.09(2.18) ^{**}	1.19	–0.11(–1.99) ^{**}	1.19	0.01(2.32) ^{**}	1.19	–0.14(–2.49) ^{***}	1.19	0.11(2.10) ^{**}	1.19
Size	–0.01(–0.39)	1.51	–0.01(–0.38)	1.51	–0.03(–0.12)	1.51	–0.02(–0.75)	1.51	–0.01(–0.40)	1.51	–0.05(–0.78)	1.51
ROA	0.43(1.19)	1.64	0.44(1.14)	1.64	0.09(0.28)	1.64	0.37(0.89)	1.64	0.08(0.25)	1.64	0.21(0.57)	1.64
F	6.135 ^{***}		5.356 ^{***}		6.285 ^{***}		6.014 ^{***}		5.098 ^{***}		4.006 ^{**}	
Adj R ²	0.37		0.35		0.34		0.32		0.34		0.33	

Observations 164

(t statistic); p-value <1% ^{***}, p-value <5% ^{**}, p-value <10% ^{*}

Table 9 Additional analysis (follows the table above)

Variables	Model 6a –Gunning Fog_human rights	VIF	Model 6b –Flesch_ human rights	VIF	Model 7a – Gunning Fog_corruption	VIF	Model 7b – Flesch_corruption	VIF
Constant	1.10(5.46) ^{***}	–	0.91(3.39) ^{***}	–	1.23(6.35) ^{***}	–	1.18(5.50) ^{***}	–
B_IND	–0.33(–2.47) ^{**}	1.48	0.49(2.72) ^{***}	1.48	–0.28(–2.12) ^{**}	1.48	0.31(2.13) ^{**}	1.48
CSR_C	–0.23(–2.01) ^{**}	1.94	0.33(2.20) ^{**}	1.94	–0.14(–2.34) ^{**}	1.94	0.15(2.33) ^{**}	1.94
W	–0.52(–1.97) ^{**}	1.05	0.45(1.98) ^{**}	1.05	–0.48(–1.96) ^{***}	1.05	0.50(2.01) ^{**}	1.05
B_SIZE	0.01(0.07)	1.09	0.07(0.29)	1.09	0.51(0.83)	1.09	0.24(1.22)	1.09
S	–0.02(–0.10)	1.59	–0.04(–0.17)	1.59	–0.09(–0.57)	1.59	–0.14(–0.80)	1.59
E_SCORE	–0.12(–1.96) ^{**}	1.57	0.07(2.08) ^{**}	1.57	–0.03(–2.04) ^{**}	1.57	0.03(1.96) ^{**}	1.57
S_SCORE	0.04(1.58)	1.44	0.17(1.96) ^{**}	1.44	0.06(0.99)	1.44	0.05(0.76)	1.44
G_SCORE	–0.08(–2.01) ^{**}	1.19	0.10(1.99) ^{**}	1.19	–1.33(–2.35) ^{**}	1.19	0.06(1.95) ^{**}	1.19
Size	–0.03(–1.21)	1.51	–0.00(–0.06)	1.51	–0.01(–0.49)	1.51	–0.01(–0.05)	1.51
ROA	0.12(0.31)	1.64	0.18(0.34)	1.64	0.13(0.35)	1.64	0.21(0.52)	1.64
F	4.478 ^{***}		4.809 ^{***}		4.165 ^{***}		4.284 ^{***}	
Adj R ²	0.31		0.32		0.32		0.31	

N: Observations 164

(t statistic); p-value <1%^{***}, p-value <5%^{**}, p-value <10%^{*}

improvement in the corporate reporting practice, including the NFI readability (Ginesti et al., 2018).

Results suggest that women have more incisive relational and communicative skills, guarantee greater monitoring of the decision-making body and reduction of information asymmetries, therefore promoting a better quality of disclosure, in general, and a higher level of readability, in particular. Findings confirm that female directors tend to spend more time in developing characters, and providing language and descriptions in a writing style easier to read than male directors do (e.g., Harjoto et al., 2020; Pennebaker, 2011). This, in turn, positively affects NFI readability.

With regard to our last hypothesis, we find that the SC has a positive impact on NFI readability. According to some scholars (e.g., Liao et al., 2015; Rennekamp, 2012), SC performs a monitoring function to ensure that disclosures, including NFI, are comprehensive and of high quality. Firms that decide to create a SC signal their concern for social issues and tend to be more transparent in this field, also through the issue of more transparent NFI (e.g., Baraibar-Diez et al., 2019). Drawing upon the legitimacy theory, results confirm that firms with a SC are more likely to voluntarily disclose NFI, and thus its presence emphasizes the firms' concern to legitimize their reputation, by providing a more readable NFI, which is considered favorably by society.

Lastly, our study confirms the existence of a positive association between readability and ESG scores. In particular, consistent with Wang et al. (2018) a positive impact exists between ESG scores and the readability indexes. Findings suggest that firms with high ESG scores exhibit better CSR performance and are more prone to provide higher NFI readability.

7 Concluding Remarks

This study has investigated the impact of corporate governance mechanisms, in particular, board independence, gender diversity, and SC, on NFI readability under the new EU Directive.

We believe this research may contribute to the academic and political debate in several ways.

Firstly, it enriches the academic debate because, to the best of our knowledge, there are no studies investigating factors motivating NFI readability. The majority of studies in this field focuses on the relation between readability of financial reporting and corporate governance mechanisms. Moreover, the few existing studies on NFI readability have been conducted before the mandatory adoption of the EU Directive. Secondly, this research is useful to regulators, suggesting the need of regulating the content of NFI practices, in order to help users to understand disclosures in a more objective way. Regulators are expected to formulate and implement criteria and standards to improve the consistency and the readability of NFI reports. Thirdly, this study provides helpful information to policymakers who call upon to enforce the NFI and insist on compliance through continuous monitoring. Specifically, it is beneficial

for managers, who will be more cognizant of the gender diversity attitudes, as our study suggests that female directors improve desirable textual attributes of NFI, especially readability, which in turn could ideally enhance the positive social outcomes and reward firms with higher legitimacy. Findings further help managers, confirming that the establishment of a SC is a step in the right direction to enhance firms' NFI readability. Indeed, SC plays an important role in guiding managers to develop proper strategic disclosure policies, including NFI. Its presence sends a positive signal to stakeholders that firms are seriously concerned about sustainability aspects. Thus, the establishment of a SC, voluntary to date, represents a good governance mechanism that could support firms to improve NFI readability, and in turn gain legitimacy.

As for limitations, this study is exclusively focused on large firms listed in the Italian Stock Exchange, thus although results can be generalized for firms located in countries with similar legal systems, therefore, they may not be valid for other large European firms located otherwise.

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The Disclosure of Non-financial Risk. The Emerging of Cyber-Risk



Claudia Arena, Simona Catuogno, Rita Lamboglia, Antonella Silvestri, and Stefania Veltri

1 Introduction

In October 2014, the European Union adopted Directive 2014/95/EU (hereafter EU Directive), which mandates companies of a certain size to draft and publish a non-financial declaration (NFD) related to the disclosure of corporate non-financial information (NFI) about society and the environment, with the ultimate aim to enhance the consistency and comparability of corporate NFI disclosed throughout the EU. NFI refers to a broad range of themes and issues such as environmental and

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C. Arena (✉) · S. Catuogno
Department of Economics, Management and Institutions, University of Naples “Federico II”,
Napoli, Italy
e-mail: claudia.arena@unina.it; simona.catuogno@unina.it

R. Lamboglia
Department of Business and Economics, University of Naples “Parthenope”, Napoli, Italy
e-mail: lamboglia@uniparthenope.it

A. Silvestri
Department of Law, Economics and Sociology, “Magna Graecia” University, Catanzaro, Italy
e-mail: antonella.silvestri@unicz.it

S. Veltri
Department of Business Administration and Law, University of Calabria, Cosenza, Italy
e-mail: stefania.veltri@unical.it

social policies, impacts and long-term risks related to these policies, and allow stakeholders to draw a more comprehensive and realistic picture of a company (Bozzolan & Miihkinen, 2019; Leopizzi et al., 2020; Veltri et al., 2020). In the chapter, we intend to focus specifically on the disclosure of NF risks and in detail on a specific NF risk known as digital or cyber-risks.

To this purpose we provide the readers with a general background for NF risks disclosure illustrating the path that led from external voluntary to mandatory (within the EU Directive) frameworks for the disclosure of NF risks. In addition, we focus on the role of audit for the management and the disclosure of the digital risk highlighting that the issue of digital risk is in an embryonic phase. Existing studies have examined cybersecurity issues confined to the accounting research (Haapamäki & Sihvonen, 2019) or the relationship between audit and technology (Lamboglia et al., 2020). However, taking into account the importance of corporate governance bodies for risk disclosure (Beretta & Bozzolan, 2004; Eng & Mak, 2003; Linsley & Shrides, 2006), a wider examination of the link between corporate governance mechanisms and digital risk disclosure is needed.

To cope with this, we provide an empirical analysis based on a literature review that follow a two-step research protocol (Pugliese et al., 2009; Arena et al., 2020; Naciti et al., 2021) aimed at analysing the role played by internal corporate governance mechanisms for cyber-risk disclosure. The novelty and increasing relevance of the topic of digital risks constitutes the main originality of the chapter. Furthermore, to the best of our knowledge, this seems to be one of the first studies focused on a literature review on the association between corporate governance mechanisms and digital risk disclosure.

The chapter aims to contribute to the risk disclosure and corporate governance literature, by providing some implications on the role played by the board of directors, internal committees, and auditing procedures for the disclosure of digital risk.

The remainder of the chapter is as follows. Section 2 provides the theoretical background on NF risks, and is articulated in three sub-sections. Section 2.1 illustrates the main voluntary external frameworks used by companies deciding to disclose their NF risks. The section also presents the framework used (or proposed) in empirical literature for the disclosure of NF risks. Section 2.2 illustrates the mandatory framework for the disclosure of NF risks, as defined by the EU Directive, and concludes summarizing the main regulations with reference to the digital risks. Section 2.3 concentrates on the studies focused on the association between internal audit and the disclosure of digital risks. Section 3 provides the empirical analysis on the review of the studies focused on the association between corporate governance mechanisms and the disclosure of digital risks. After the illustration of the methodology in Sect. 3.1, we present the data analysis in Sect. 3.2 and the discussion of results in Sect. 3.3. The last section concludes the chapter, also highlighting theoretical contribution, main managerial and policy implications.

2 The Theoretical Background

2.1 *The Voluntary Disclosure of the Non-financial Risk*

Risk is a complex concept and has a multi-faceted nature. A shareable definition identifies corporate risk with *any information about opportunity, danger, threat, or exposure that has or could impact the company in the future* (Linsley & Shrives, 2005).

Several are the taxonomies of corporate risk presented in the literature, but all make a distinction between financial and non-financial (NF) risks (Veltri, 2020). The distinction between financial and NF risks is really important as, notwithstanding usefulness and materiality being key issues that relate to both financial and non-financial information, financial information has a different nature (the result of past events and measurable in terms of financial consequences and impacts) with respect to NFI (more forward-looking and less measurable), and this dichotomy leads to a more difficult judgment about the materiality grade of information and, as a consequence, to a not foreseeable perception by users of the NF risk-related disclosure information (Veltri et al., 2020).

In the chapter, we deal with the disclosure of (NF) risks, defined by Linsley and Shrives (2006), that is when *the reader is informed of any opportunity or prospect, or of any hazard, danger, harm, threat or exposure, which has already impacted upon the company or may impact upon the company in the future or of the management of any such opportunity, prospect, hazard, harm, threat or exposure.*¹

In spite of the width of the definition of corporate risk, companies mandated to disclose (or voluntarily disclosing) risk-related information focused mainly on financial risks (Dobler et al., 2014; Elshandidy et al., 2018), although stakeholders, researchers, practitioners, and standards setters have become increasingly interested in the disclosure of NF risk-related information and a recent research identifies risk disclosures among the most important types of NF information valued by investors (Bozzolan & Miihkinen, 2019).

Over time, corporate disclosures have evolved from solely disclosing economic risk to also disclosing social and environmental risk, the most common NF risks, often included on the same label of sustainability risks (Dumay & Hossain, 2019; Truant et al., 2017). Among these, environmental risk is the area which received most attention from scholars, as confirmed by the literature (Matten, 1995; Weinhofer & Busch, 2013; Clarkson et al., 2013; Plumlee et al., 2015;). At political level, the Financial Stability Board in 2016 issued a report, the Task Force on

¹In the chapter, an external, communicational perspective, leaving aside the risk management perspective in the sense of the activities carried out at the organizational level to face corporate risks. In other words, it is an external, communicational perspective. Consistently with Dumay (2016), we believe that disclosure is different from reporting, even if the terms are mostly used synonymously. In detail, disclosure is 'the revelation of information that was previously secret or unknown', whilst reporting is a 'detailed periodic account of a company's activities, financial condition and prospects that is made available to shareholders and investors' (Dumay, 2016).

Climate-related Financial Disclosure, which renews the pressure on companies in Europe to disclose specifically climate-related financial risks because “it has been difficult for investors to know which companies are most vulnerable to climate change which are best prepared, and which are taking action” (TCDF, 2016). The TCDF divided climate-related risks into two major categories: risks related to the transition to a lower-carbon economy and risks related to the physical impacts of climate change. The former may include extensive policy, legal, technology and market changes to address mitigation and adaptation requirements related to climate change. The latter results in event-driven (acute) or longer-term shifts (chronic) in climate patterns. Both categories may also have direct and indirect financial and social impacts. In the survey conducted by KPMG, carbon-related risks are the most reported sustainability issues (KPMG, 2015).

Overall, sustainability risk has also found a spotlight in corporate governance practices, meaning that several corporate governance guidelines now include recommendations that advise listed companies to report on their economic, social, and sustainability risks (Dumay & Hossain, 2019). For example, the King IV guidelines require listed South African companies to expand their risk disclosure much further than was previously required under the King III guidelines of 2009 in the light of changing weather conditions and the pressure on the population and natural resources. In Australia, the third edition of the Corporate Governance Principles and Recommendations incorporates a new Sect. 4, which states that “A listed entity should disclose whether it has any material exposure to economic, environmental and social sustainability risks and, if it does, how it manages or intends to manage those risks”.

However, even though there is a general consensus on the need for effective risk management and its disclosure, there is less agreement on how (using which frameworks) and to what extent (voluntary vs. mandatory), environmental, social, and economic sustainability risk should be disclosed. Before the EU Directive (and the enactment of the 254/2016 Decree) that introduced an NF risk disclosure framework, several NF reporting tools dealt with NF risks. Table 1 presents the main NF reporting tools dealing with NF risks.

The empirical studies addressed to measure the NF risks, as part of the more general corporate risks, used diverse frameworks. When the authors distinguish between financial and NF risks, while briefly agreeing on the content of financial risks (credit risks, liquidity risks, and, more generally, risks related to financial instruments), they greatly differ in relation to the categories (and the content of the categories) to include in the NF risks dimension. Table 2 presents some frameworks for analysing NF risks used in the empirical papers dealing with financial and NF risks (among the authors included in Table 2, only Leopizzi et al. and Dumay and Hossain focus solely on NF risks). As we can notice from Table 2, not only NF risks macro categories are not the same for all authors, but even when the labels coincide, the content of them is different among diverse authors. Digital (or cyber) risk, which is the focus of our chapter, is not always included in the NF risks framework.

Table 1 Reporting tools and types of NF risks disclosed

Reporting tool	Type of risks
GRI (2013)	<i>Economic</i> : Market presence, procurement practices, anti-corruption, anti-competitive behaviour <i>Environmental</i> : Materials, energy, water, biodiversity, emissions, effluents, and waste <i>Social</i> : Employment, labour/management relations, occupational health and safety, diversity and equal opportunity, non-discrimination, freedom of association and collective bargaining, child labour, forced or compulsory labour, security practices, rights of indigenous peoples, human rights, local communities, public policy, customer health safety, marketing and labelling, customer privacy, compliance
CDP	Forest, water, Climate change
IIRC (2013)	Market risks and other risks beyond financial reporting
UN Global Compact	Human rights, occupational health and safety, labour rights, environmental, and anti-corruption issues
Total Impact Measurement & Management	Social, environmental, economic, fiscal
Social Capital Protocol	Contextualized risks without a priori list
Natural Capital Protocol	Not set a priori
Common Good Balance Sheet	Not set a priori
ICAEW (1997)	Corporate risks are categorized into six risk disclosure categories: financial risk, operations risk, empowerment risk, information processing and technology risk, integrity risk, strategic risk
The Arthur Andersen Business Risk model	NF RISks are articulated into: compliance risks; strategic risks; operational risks; Environmental, health, and safety risks; General NF risks
COSO (2018) framework	Financial risks, compliance risks, operational risks, strategic risks

Source: our elaboration based on Truant et al. (2017) and Leopizzi et al. (2020)

2.2 The Regulatory Framework for the Non-financial Risk Disclosure

In Europe, the issuing of the 2014/95/EU Directive and its adoption within EU countries obliged the large public interest entities (PIEs) to disclose some non-financial information (NFI thereafter), among which NF risk-related information.

The issue of the 2014 Directive, also called the Non-Financial Reporting Directive (NFRD), is the result of a systematic process aimed at harmonizing accountability practices in the common European space. It was preceded by numerous European initiatives (both mandatory and voluntary) which prepared the way for its enactment. Among the most important mandatory initiatives, we can mention the “Commission Recommendation on the recognition, measurement and disclosure of environmental issues in the annual accounts and annual reports of companies”

Table 2 Non-financial risk disclosure frameworks used in empirical articles (in chronological order)

Journal (year)	Author (s)	Risk framework	NF risks content (macro categories)	NF risks content (detailed content)
Journal of Risk Finance (2005) British Accounting Review (2006) International Journal of Business Management (2017)	Linsley and Shrive Linsley and Shrive Manes Rossi et al. (2017)	ICAEW (1997)	• Operations risk • Empowerment risk • Information processing and technology risk • Integrity risk • Strategic risk	Customer satisfaction; product development; efficiency and performance; sourcing; stock obsolescence and shrinkage; product and service failure; environmental; health and safety; brand name erosion Leadership and management; outsourcing; performance incentives; change readiness; communications Integrity Access; availability; infrastructure Management and employee fraud; Illegal acts; reputation Environmental scan; industry; business portfolio; competitors' pricing; valuation planning
Financial Reporting (2017)	Neri and Russo (2013)	—	• Legal risk • Operational risk • Business risk	Stream of information related to various situations, like the change that has taken place in the legislation A kind of risk related to the possibility of inadequate internal processes, people, and systems or from external events It is a kind of risk related to the uncertainties about the demand for product, the price that can be charged for the products, the cost of producing, stocking and delivering the products, but also strategic risk
Sustainability (2017)	Truant et al.	—	• External risk • Strategic risk • Operational risk • Social, environmental, ethic, reputational risks	It is a kind of risk related to the uncertainties about the demand for product, the price that can be charged for the products, the cost of producing, stocking, and delivering the products, but also strategic risk

(continued)

Table 2 (continued)

Journal (year)	Author (s)	Risk framework	NF risks content (macro categories)	NF risks content (detailed content)
				Strategic risks are linked to a specific business sector and usually include market risk, product and process innovation risks, human resources risk, price risk, industrial risk and financial risk A kind of risk related to the possibility of inadequate internal processes, people, and systems or from external events Social and environmental risks are considered for their transversal impacts over the other risks, while reputational risk is defined as risk deriving from unethical behaviour, thus they have been clustered under ethical risks
Financial Reporting (2019)	De Luca and Phat (2019)	—	• Reporting risk • Compliance risks • Operational risks • Reputation risks • Strategic risks	Financial accounting and reporting regulation; Law 262/2005 Health and Safety; environment; industry regulation; social and employee related matters; Law 231/2001; human rights; corruption and bribery Customer satisfaction; product development; process management and infrastructures; human resource management; information systems; stock obsolescence and shrinkage; product and service failure Corporate image; business ethics Macro-environmental; industrial; competitive; business portfolio; planning; product lifecycle
Australian Accounting Review (2019)			• Economic risks	Risks related to the economic sustainability,

(continued)

Table 2 (continued)

Journal (year)	Author (s)	Risk framework	NF risks content (macro categories)	NF risks content (detailed content)
	Dumay and Hossain	Australian CG guide-lines (2014)	• Environmental risks • Sustainability risks	defines as “the ability of a listed entity to continue operating at a particular level of economic production over the long term” (ASX CGC 2014, p. 37) Risks related to the environmental sustainability defines as “the ability of a listed entity to continue operating in a manner that does not compromise the health of the ecosystems in which it operates over the long term” (ASX CGC 2014, p. 37). Risks related to the social sustainability, defines as “the ability of a listed entity to continue operating in a manner that meets accepted social norms and needs over the long term”(ASX CGC 2014, p. 38).
Corporate Social Responsibility and Environmental Management (2020)	Leopizzi et al.	COSO Framework (2018)	• Compliance risks • Strategic risks • Operational risks	Ethical misconduct; risk of litigation; fiscal risk; corruption; conflict of interest Reputation; brand erosion; dependence on third parties; price; stakeholder engagement; competition; politics Product quality; performance gap; human resource; procurement; product development; obsolescence retire; efficiency; interruption activity; capability; information technology; infrastructure; misleading of the product service
Business Strategy and the Environment (2020)	Veltri et al.	EU Directive (2014)	• Health and safety risks • Environmental risks • Social and employee risks	The likelihood that a person suffers adverse health effects due to the organizational process, product, and services The liability to third parties

(continued)

Table 2 (continued)

Journal (year)	Author (s)	Risk framework	NF risks content (macro categories)	NF risks content (detailed content)
			• Human rights • Corruption and bribery risks	for the damage caused by pollution Failure to conform with laws and regulations about gender equality, international organizations, and social dialogue Risk of violations and discrimination in the work-force Risk of offering, paying, or receiving a bribe through any third party acting on behalf of the commercial organization

Source: our elaboration

(2001/453/EC), the Accounts Modernization Directive (2003/51/EC), and the Accounting Directive (2013/34/EU).²

An important step for the EU Directive was taken in the year 2011. Following a very successful public consultation which attracted over 300 responses between November 2010 and February 2011, in April 2011, the EU Commission officially announced the presentation of “a legislative proposal on the transparency of the social and environmental information provided by companies in all sectors” (EU Commission, 2011). In April 2013, the EU Commission presented the draft proposal for an EU Directive on non-financial reporting of companies. Finally, in April 2014, the non-financial reporting directive is issued. It amends the Accounting Directive (2013/34/EU); in fact, companies are required to include non-financial statements in their annual reports from 2018 onwards.

Making mandatory the disclosure of NFI, the 2014 EU Directive introduces an important novelty in European countries and, at the same time, puts an end to voluntary and different disclosure practices from one country to another with two main objectives: a) to improve comparability information; b) strengthen corporate accountability to better respond to the needs of all stakeholders interested in corporate performance. Therefore, the EU Directive allows the transformation of the NF reporting from a simple voluntary exercise to a regulatory obligation for the entities concerned.

²Among the voluntary initiatives, we can mention the Eco- Management and Audit Scheme (EMAS) in 1993 and its successive revision in 2001 (EC No 761/2001) and 2009 (EC No 1221/2009).

The purpose of the EU Directive is “to help companies disclose high quality, useful, consistent and more comparable non-financial information in order to promote resilient and sustainable growth and employment, and provide transparency to stakeholders” (European Commission, 2017).

The Non-Financial Reporting Directive represents an important regulatory step towards harmonizing the NF reporting practices of all European Member States. By establishing some minimum requirements in terms of NFI that larger companies and public interest entities (PIEs) with more than 500 employees must disclose to their stakeholders,³ it aims to achieve the objective of improving the consistency and comparability of disclosed NFI.

The NFRD is based on the right to know about the positive or negative impact that large companies have on the environment and on the local communities in which they operate. It mainly focuses on environmental and social disclosures. In detail, the NFI to disclose according to 2014 Directive is essentially “information to the extent necessary for an understanding of the development, performance, position and impact of the activity of the undertaking, relating to, as a minimum, environmental, social and employee matters, with respect for human rights, anticorruption and bribery matters, including: (a) a brief description of the business model of the undertaking; (b) a description of the policies pursued by the undertaking in relation to those matters, including due diligence processes implemented; (c) the outcome of those policies; (d) the principal risks related to those matters linked to the operations of the undertaking, including, where relevant and proportionate, its business relationships, products or services which are likely to cause adverse impacts in those areas, and how undertaking manages those risks; e) non-financial key performance indicators important to the particular business” (EU, 2014). Table 3 illustrates the topics to be disclosed relating to each individual issue requested by the NFRD.

Regarding the disclosure of NFI, the EU Directive offers Member States the option to allow companies not to disclose information relating to upcoming developments or issues under negotiation. This is where the principle of compliance or explanation is substantiated. This principle allows companies to exclude certain information from their non-financial statement through an explanation of the reason for the choice (Quinn & Connolly, 2017). The possibility of applying this principle may undermine the effectiveness of a mandatory regime for the disclosure of NFI, such as the one defined in the 2014 Directive.

Finally, as regards the assurance of disclosed information, the Directive allows Member States to decide whether independent assurance is a requirement.

The Directive focuses primarily on the type of NFI that must be disclosed, but includes very little information on their positioning; this means that information is more important than reporting (La Torre et al., 2018b).

The EU Directive considers the disclosure of NFI separately from financial information. It requires larger companies and PIEs to produce a non-financial

³This covers approximately 6000 large companies and groups across the EU, including listed companies, banks, insurance companies, other companies designated by national authorities as PIE.

Table 3 Directive 2014/95/EU: Issues and topic disclosure

Ref. directive 2014/95/EU	Topic disclosure
Art. 19a—Environmental issues	Materials; energy; water; biodiversity; emissions; effluents and waste; environmental compliance; supplier environmental assessment
Art. 19a—Social issues	Local communities; supplier social assessment; public policy; customer health and safety; marketing and labeling; customer privacy; socioeconomic compliance
Art. 19a—Employees	Employment; labor/management relations; occupational health and safety; training and education
Art. 19a—Human rights	Non-discrimination; freedom of association and collective bargaining; child labor; forced or compulsory labor; security practices; rights of indigenous peoples; human rights assessment
Art. 19a—Anti-corruption	Anti-corruption; anti-competitive behavior
Diversity	Diversity and equal opportunity
“Context” Topics Art. 19a—Business model, policies, outcomes, risks, and opportunities, Key Performance Indicators (KPIs)	Business model (general description); BM—input; BM—business activities; BM—outcomes
	Management approach (materiality, topic boundaries, targets, responsibilities, actions and practices, mechanisms to evaluate the management process); materiality determination process; qualitative disclosure of material matters—current period; qualitative disclosure of material matters—present period; qualitative disclosure of material matters—forward-looking period
	Risk and opportunities (for each topic: identification, effects on the business relationship, actions to manage); KPIs (for each topic): current period; KPIs (for each topic): prior period; KPIs (for each topic): forward-looking period; KPIs (for each topic): benchmark; KPIs (for each topic): measurement methods
Others	Economic performance; market presence; indirect economic impacts; procurement practices; ethics and integrity; stakeholder engagement.

Source: Rizzato et al. (2019)

statement that discloses “information on sustainability, such as social and environmental factors, with a view to identifying sustainability risks and increasing investor and consumer trust” (EU, 2014). This non-financial statement could be included in the management commentary or can be a separate report. If the NFI is disclosed in a separate report, it “must be published at the same time as the management report or

not later than 6 months from the balance sheet date and must be referred to in the management report". The EU Guidelines (2017) clarify that this approach is based on the connectivity of information, therefore there may be different sources of information, but they must be related.

Regarding the form that the separate report can take, although the EU directive promises to harmonize NFI in practice, companies can choose from a multitude of international, European, and national reporting frameworks to comply with the law, which is unlikely to improve comparability of information.

In 2016, the Federation of European Accountants (FEE) recognized nine international frameworks and guidelines appropriate for compliance with the 2014 Directive, out of over 30 international frameworks for sustainability reporting (Brown et al., 2009). These frameworks are: (1) the Global Reporting Initiative (GRI); (2) the International Integrated Reporting Council (IIRC); (3) the Sustainability Accounting Standards Boards (SASB); (4) the AccountAbility (AA); (5) the United Nations Global Compact (UNGC); (6) the Organization for Economic Co-operation and Development (OECD); (7) the European Federation of Financial Analysts Societies (EFFAS); (8) the International Standards Organization (ISO); (9) the Core and More Framework, promoted by Federation of European Accountants (FFE) (2016) since 2015 Federation of European Accountants (FEE 2015). Among these frameworks, the EU Directive specifically mentions (in paragraph no. 9 of the preamble) the GRI, the UNGC, and the OECD Guidelines for Multinational Enterprises.

Most companies use GRI guidelines or the IIRC framework when deciding to disclose NF information in a separate report. The GRI guidelines were one of the first frameworks for sustainability reporting; first released in 2000, they were developed for the purpose of providing a legitimate financial accounting framework to include NF information and target a wider audience of stakeholders (GRI, 2013). The IIRC Framework has evolved in response to criticisms of autonomous sustainability reporting. It provides a principles-based framework for an integrated form of reporting in which the links between the company's strategy, its business model, its governance, and its performance reveal how a company creates value over time (IIRC, 2013). The IIRC Framework is supported by policymakers involved in the implementation of the EU Directive, although the lack of disclosure requirements and rules under the IIRC represents a significant obstacle in the process of achieving the Directive's objective of harmonizing NF disclosure and making comparable NF information between European companies (Dumay et al., 2017).

In June 2017, the EU publishes its guidelines to help companies disclose environmental and social information. These guidelines are not mandatory and companies may decide to use international, European, or national guidelines according to their own characteristics or business environment. In June 2019, the EU published guidelines on reporting climate-related information, which, in practice, consist of a new supplement to the existing guidelines on non-financial reporting, which remain applicable.

In its “Communication on the European Green Deal” (11 December 2019), the Commission committed to review the non-financial reporting directive in 2020 as part of the strategy to strengthen the foundations for sustainable investment. The objectives of this review are two-fold: first, to improve disclosure of climate and environmental data by companies to better inform investors about the sustainability of their investments; secondly, to give effect to changes required by the new Disclosure Regulation⁴ and forthcoming Taxonomy Regulation. In line with this commitment, the Commission launched a public consultation on changes to the NFRD on 20 February 2020; that consultation closed on 14 May 2020.

The European legislation on NFI disclosure was adopted in Italy on 30 December 2016 with Legislative Decree no. 254, which entered into force on 25 January 2017 (to be applied starting from the 2017 fiscal year). The Italian regulation is, in some ways, more stringent than the European one due to the mandatory system of external controls which requires the assurance of the non-financial statement content and a sanctioning regime for directors and supervisory bodies. At the same time, it appears more flexible than European regulation due to the wide range of NFI reporting methods provided by the Italian legislator, with the possibility of also using an autonomous reporting methodology.

Legislative Decree 254/2016 introduced several new elements that do not appear in EU Directive and other national regulations implementing European legislation (Muserra et al., 2019). For example, as regards the content of the NF declaration, the minimum content required by the Decree is in line with the content required by the EU regulation, but more articulate. Furthermore, in compliance with the principle of materiality, which provides that the topics to be reported in the declaration are representative of the individual company, the Decree allows companies to identify issues other than those indicated by the EU Directive, eliminating and/or adding further aspects (Veltri, 2020).

With reference to digital risk, although the 2014 Directive does not explicitly include this type of risk among those deriving from the mandatory NF information to be disclosed, many international organizations have expressed their interest in this issue, raising awareness of numerous types of companies regarding its disclosure (Uddin et al., 2020).

The American Institute of Certified Public Accountants (AICPA), for example, stated that “Cybersecurity is a major concern for nearly every company in the world, large and small, public and private.” Therefore, cybersecurity is a business risk management problem that requires a global solution (AICPA, 2018a). The AICPA also stressed the importance of the entity-level cybersecurity reporting framework through which organizations can communicate useful information about their cybersecurity risk management programs to stakeholders (AICPA, 2018b).

The International Organization of Securities Commissions (IOSC) Board recognizes that cybersecurity risk is a growing and significant threat for the integrity, efficiency, and soundness of the global financial markets. Therefore, IOSCO

⁴Regulation EU 2019/2088 on sustainability-related disclosures in the financial services sector.

recommends having a regular and independent cybersecurity risk management framework for addressing cyber thefts and other data losses in financial institutions (IOSC, 2016).

The Organization for Economic Co-operation and Development (OECD) suggests the member countries frame policy-related guidelines for cybersecurity management at institutional levels. The guidelines should emphasize, for example, creating awareness of cyber risk and its consequences, identifying the parties responsible for information system networks, determining the responsible team to detect cyber threats and prevent incidents (OECD, 2015).

In the USA, the National Association of Corporate Directors (NACD), in 2014, in the Cyber Risk Oversight guide for the top management of companies, states that the risk of cybersecurity cannot be a problem confinable to the sphere of Information Technology (IT), but rather an issue to be addressed in the context of Enterprise Risk Management (ERM); while the National Institute of Standards and Technology (NIST), has created a Cybersecurity Framework that proposes an advanced approach to IT security management that companies should strive for (La Torre & Lucchese, 2020). Finally, also the Securities and Exchange Commission (SEC) stated it is essential that “Public companies take all necessary actions to promptly inform investors about risks and incidents relevant to cybersecurity” (SEC, 2018). The growing importance of cybersecurity incidents prompted the SEC to publish its first cybersecurity guidelines in 2011. The SEC continues to consider other means of promoting adequate disclosure of cyber incidents and is reinforcing and expanding that 2011 guidance (Haapamäki & Sihvonen, 2019).

2.3 The Role of Internal Auditing for the Disclosure of Digital Risk

New digital technologies have led to the emergence of several opportunities, but also new types of non-financial risks, which companies are required to manage. Among them, the digital risk, generally identified as cyber-risk, represents a major threat for organizations due to the growing sophistication and variety of data breaches and cyber-attacks on firms’ brands and reputations, often resulting in disastrous financial impacts.

In the corporate governance system, a central role for the management of the digital risk and for its disclosure is carried out by internal auditors, considered among the actors accountable for ensuring data security (Jarison et al., 2018; La Torre et al., 2019). A recent study of Kahyaoglu and Caliyurt (2018) shows that internal auditing should be an integral part of cybersecurity assurance process, as it has a unique position to look across organizations. The authors underline also that internal audit and information security functions could work together to support organizations accomplish a cost-effective level of information security.

The need for data protection and security are changing the conditions under which internal auditors work. Auditors' role is evolving; their actions and their practices are modifying in order to guarantee a reasonable degree of security and an adequate management of the related risks.

Literature reveals that the current "digital ecosystem" poses both opportunities and challenges for auditors (Kahyaoglu & Caliyurt, 2018). Following the International Standards of Audit (ISA) 250 (n.d.), auditors must consider the laws or regulations that have a material direct or indirect effect on financial statements. Nowadays, auditors respond to new external pressures stemming from demand for privacy and data protection. Thus, the first effect of the digital ecosystem on audit practice concerns the way the activities can be performed to provide audit judgments, the time to perform audit activities and the quality of the evidence produced (La Torre et al., 2019). Currently, the audit on financial information is conducted in phases and it is based on the concept of continuous auditing. Instead, the vast amounts of information generated by the use of the new technology could also give rise to a concept of "auditing by exception" (Vasarhelyi et al., 2015, p. 391). Furthermore, with the increasing size and complexity of the information, there will be little possibility the assurance activity can be accomplished in a predominantly manual way (Vasarhelyi et al., 2015, p. 391).

New current practices in internal auditing for data protection have been determined by two external forces.

The first one concerns the social and technological dynamics generating privacy concerns and data security issues (Boyd & Crawford, 2012; Kahyaoglu & Caliyurt, 2018). The development of information privacy has followed a similar trajectory as the development of informatics (Smith et al., 2011), but the increased use of the internet and of e-commerce at the end of the past millennium, the evolution of IT, and consequently, Big Data, has seen privacy concerns reach new heights (La Torre et al., 2019), and the companies aimed at ensuring the confidentiality, integrity, and availability of data (ISO, 2013; La Torre et al., 2018a).

The second force represents the "recognition and institutionalisation of this societal concern at a regulatory level". Over the years, privacy has transformed from a societal issue into an "acknowledged public right". The regulation on data protection represents an "institutional force that pushes companies to implement data protection practices and ensure adequate security measures for their data" (La Torre et al., 2019).

In this new scenario, the traditional audit models should be revisited for the development of new assurance services, especially with regard to cybersecurity and continuous assurance (Gyun No & Vasarhelyi, 2017).

There are many mechanisms and operations currently in existence which support cybersecurity assurance to prevent major threats (Hancock, 2017). These include risk assessment, risk treatment, risk management, security assurance, and auditing. Kahyaoglu and Caliyurt (2018) propose to modify, for example, the traditional audit frame to allow a set of assurance services in a modern age and include the following:

- Continuous (internal and external) audit
- Continuous control monitoring
- Continuous cybersecurity assurance.

In order to achieve a sound cyber-risk management and governance, internal auditors should consider four major cyber-focused standards and frameworks: Control Objectives for Information and Related Technology (COBIT), International Organization for Standardization (ISO), The American Institute of Certified Public Accountants (AICPA) and the National Institute of Standards and Technology (NIST).

COBIT is a framework created by the [Information Systems Audit and Control Association](#) (ISACA) for IT governance and management, which enables management to bridge the gap between control requirements, technical issues, and business risks simultaneously (ISACA, 2018).

ISO 27000 represent a series of standards that enable organizations to implement processes and controls to support the principles of information security. According to the ISO 27001 (ISO, 2013, p. 5), the aim of information security management is to guarantee “the confidentiality, integrity and availability of information by applying a risk management process that gives confidence to interested parties that risks are adequately managed”. This task is directly linked to the wider domain of risk management, as it involves the entire organization, and it should be part of, in an integrated way, the internal risk management process. Therefore, the main scope of data protection activities is to preserve a condition of security (confidentiality, integrity, and availability) and ensure that the security risks are properly controlled.

AICPA introduced a cybersecurity risk management reporting framework in order to assist organizations to have relevant and useful information about the effectiveness of their cybersecurity risk management programs. This framework is a key component of System and Organization Controls (SOC). SOC 2 reports for cybersecurity examinations. SOC is a suite of service offerings certified public accountants may provide in connection with system-level controls of a service organization or entity-level controls of other organizations.

The National Institute of Standards and Technology (NIST) has developed a cybersecurity framework which identifies standards, guidelines, and practices to guide organizations in practices that reduce the potential impacts of cyber-risks. According to the model, the following five macro activities constitute a security management system (NIST, 2014, pp. 8–9):

- “Identify”, regarding the “organisational understanding to manage cybersecurity risk to systems, assets, data, and capabilities”
- “Protect”, related to developing and implementing safeguards
- “Detect”, concerning the activities for identifying cybersecurity events
- “Respond”, regarding the activities to respond to the events detected
- “Recover”, concerning plans for resilience and restoring any capabilities affected by the event.

In investigating the role of internal auditing for cybersecurity, literature seeks to clarify how to deal with unstructured data for both planning and execution phases of the audit (Krahel & Titera, 2015); what is the auditors' liability if analytics uncovers issues not previously uncovered (Appelbaum et al., 2017; Brown-Liburd et al., 2015); how to use evidence from alternate sources such as social media (Griffin & Wright, 2015); how to identify parameters of real-time audit reporting (Vasarhelyi et al., 2015); and the shape of generally accepted accounting practice (Vasarhelyi et al., 2015). Only few studies consider the role of internal auditing for the disclosure of digital risk. Furthermore, although all these researches indicate the relevance of disclosure on cyber-risk, they appear to be fragmented and not supported by empirical evidence.

Even on a practical level, it seems that disclosure on cyber-risk is still underdeveloped. A recent survey conducted by Jarison et al. (2018) for "The Internal Audit Foundation" indicates there exists yet the opportunity for greater visibility to cybersecurity concerns at the board level. "Only 39 percent of the respondents said their organizations went beyond standard audit reports in reporting cybersecurity risk and trends to the board or audit committee" (Jarison et al., 2018, p. 18).

The relevance of the cyber-risk reporting seems to be, mainly, underlined in the studies focused on financial industry (Uddin et al., 2020). These studies reveal that, without adequate risk disclosures, institutions cannot ensure the best transparency in the decision-making process. Hence, to achieve greater transparency and increase the standard of governance, it is essential to let all stakeholders of financial institutions know about the risks of using cyber technology and the mitigation measures taken in the event of incidence. It may ensure effective control of cyber threats, response mechanisms, and cross-border collaboration to enhance resiliency and transparency in the cyber system. Moreover, Berkman et al. (2018) and Li et al. (2018) tested the relevance of cybersecurity disclosure to find a relationship between cyber risk disclosure and incidents.

From assurance perspective, literature reveals that the task of a cyber-advisor is not limited to assessing compliance with cyber-related policies and procedures; providing assurance on the organization's cybersecurity program; providing assurance on incident response, disaster recovery, and business continuity plans; but also to report cybersecurity-related engagement results to management and audit committee (Kahyaoglu & Caliyurt, 2018). Due to the changing technological conditions under which auditors operate, the traditional auditors' task of hearing and verifying extends to new phenomena that create risks for businesses. Thus, within data protection practices, auditors have the accountability to keep interested parties informed about data security and privacy risks and continue to transmit signals to users and instill confidence in businesses.

In analysing the cybersecurity assurance approaches to determine the key issues and weaknesses within the internal audit and risk management perspective, La Torre et al. (2018a) provide also some insights on the disclosure of the cyber risks. Authors show that, because of the public interest arising from the risks of cyber threats and data breaches, there can be no doubt about the increased corporate accountability in protecting data and the changes required from accounting information for

stakeholders. The traditional auditor's task of transmitting positive signals to users and providing confidence in business (O'Sullivan, 1993, p. 412) is renewed. Auditors hold the accountability for keeping internal and external stakeholders informed on data protection practices, providing sufficient confidence about the risks from cyber threats and, especially, data breaches. This means communicating standards for data security by placing and monitoring procedures, policies, and standards.

Starting from these considerations, in a more recent study, La Torre et al. (2019) propose also adding another important and cross-sectional function to the NIST cybersecurity framework that is "accountability", which aims to keep internal and external interested parties informed. While communication occurs in any activity of the model and extends beyond the organization's boundaries (NIST, 2014), the function of accountability permeates data protection practices and aims to gather information and keep actors and stakeholders informed about the cyber threats an organization faces.

A brief review of the professional literature has revealed how it is focused on the relevance of an internal disclosure for the cyber-risk (Hrubey, 2020; IIA, 2016). In these studies, an effective communication strategy between internal auditing and the board is considered essential (IIA, 2016). These researches underline that establishing periodic communication helps to ensure the board is provided with relevant information to effectively carry out an internal control oversight role. The study of Hrubey (2020) shows that companies need a clear reporting mechanism to report results from the Chief Audit Executive (CAE) back to the board. "The board needs to understand the information systems and data assets that are most crucial to their organization and gain assurance from the CIO, CISO, CSO, CTO, and CAE that controls are in place to prevent, detect, and mitigate cyber-risks within the acceptable level of tolerance".

3 The Disclosure of Digital Risk. An Empirical Investigation on the Governance Literature

In this section, we provide an empirical analysis on the existing studies dealing with the role of corporate governance for digital risk disclosure, with the ultimate aim to derive some implications for corporate governance and disclosure.

3.1 Methodology

In order to analyse the link between corporate governance mechanisms and digital risk disclosure, we conduct a review of literature and a visualization of the most frequent topics and chronological evolution on the existing studies dealing with the

role of corporate governance for digital risk disclosure, using a research protocol based on two steps.

In the first step, following a well-established procedure in the field (Pugliese et al., 2009; Arena et al., 2020), we conducted Boolean searches using the online library ISI Web of Science, which is a comprehensive and interdisciplinary bibliographic database with articles referenced from journals, books, and conference proceedings. With this aim, we employ the keyword “digital risk disclosure” or its synonymous equivalent, such as “cyber-risk information”, “informatic risk disclosure”, and “corporate governance”, in the topic (title, abstract, keywords, main text). No time limits were set to take into consideration all the most significant contributions. The research produced 202 articles. Then, we manually refined this search based on the article title and abstract and removed 98 articles not related to the management field. Subsequently, we read the entire text of the articles and additionally deleted 61 articles not relevant for the topic of governance and risk disclosure. Therefore, we conduct a data analysis on a sample of 43 articles illustrating the publication trend, the most prolific journals, and the country of authors’ affiliations.

In the second step, following recent studies (Van Eck & Waltman, 2017; Naciti et al., 2021), we performed a cluster analysis visualization technique in order to understand this emerging topic in terms of main themes, evolution over time, and literature background. For this purpose, we employed Vos Viewer software for analysis and visualization. We provided a representation of the keyword network clustering, their chronological analysis (overlay), and the co-citation network clustering. Keyword network clustering allows to analyse of the topic in terms of keywords that have most frequently been used in literature on digital risk and corporate governance and how they are interconnected. The importance of topics is represented by the size of the nodes (circle), and the strength of their linkage is depicted by the thickness of the lines between them. Chronological analysis aims at understanding to what extent the frequency of the keywords has changed over time. Lastly, we analyse the most frequently cited references in the literature to explore the theoretical foundations of the publications.

3.2 Data Analysis

The sampled articles have been published in 38 outlets, among which, nine are conference proceedings and 29 international scientific articles from 2010 to 2020. The first publication dates back to 2010 and, since 2016 onwards, there has been an increasing publication trend in line with the growing attention of academics, professionals, standard setters, and the media for the topic (Fig. 1).

Figure 2 shows that the most frequent academic outlets are “Journal of Information Systems”, “International Journal of Accounting Information Systems”, and “Journal of Cybersecurity”. However, the figure also shows that some articles have been published also in some highly ranked international accounting journal

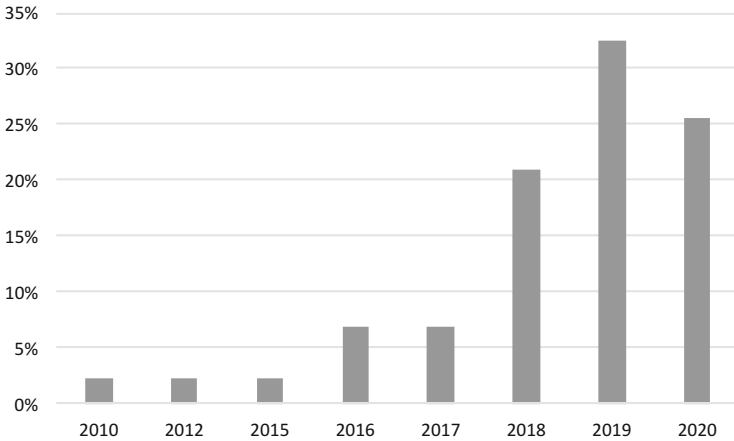


Fig. 1 Publication trend (Source: our elaboration)

such as “Review of Accounting Studies” and “Journal of Accounting and Public Policy”.

The most prolific author on cybersecurity disclosure appears to be Pinsker R. from Florida Atlantic University. As Fig. 3 shows, most of the contributors on the topic come from the USA, followed by England and Australia.

Figure 4 shows the results of the keyword co-occurrence network clustering, highlighting 24 major non-generic keywords that appeared at least three times in the titles and abstracts of the 43 publications selected.

The size of each circle represents the number of times of occurrence, and the colours indicate the cluster to which each keyword belongs. As shown in Fig. 4, the most frequently used keywords are “Cybersecurity”, “Governance”, “Market Value”. Our analysis shows five closely connected clusters that are coloured in red, blue, purple, green, and yellow. Although these clusters are closely connected to each other and show overlapping topics, it is possible to identify their main themes, which we have called “Information security management (green)”; “Governance and risk disclosure” (purple); “cybersecurity risk management” (red); “Cybersecurity Auditing and Market Value” (blue); “Quality of cybersecurity disclosure”, respectively. Overall, we observe four main structures in the network, namely, “Information security”, “Cybersecurity”, “Governance”, “Market Value”, whose nodes (keywords) are connected both directly and indirectly through several keywords associated to the theme of disclosure.

The chronological analysis of the keyword occurrence (Fig. 5) reveals the upward trend of publication on the topics in more recent years.

The transition from blue to yellow represents the average year of keyword occurrence from 2010 to 2020. Due to the substantial increase in the volume of items published in recent years, the average years of occurrence lies within the four-year window, 2017–2020. The transition within this period reflects that the theme was initially conceived as related to the computer science field (“modelling”,



Fig. 2 Most prolific journal (Source: our elaboration)

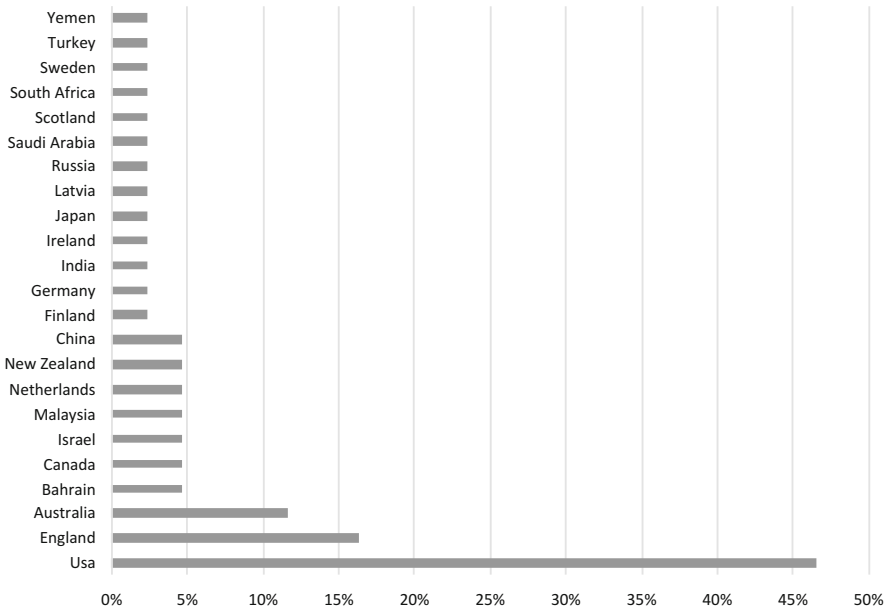


Fig. 3 Country of authors’ affiliation (Source: our elaboration)

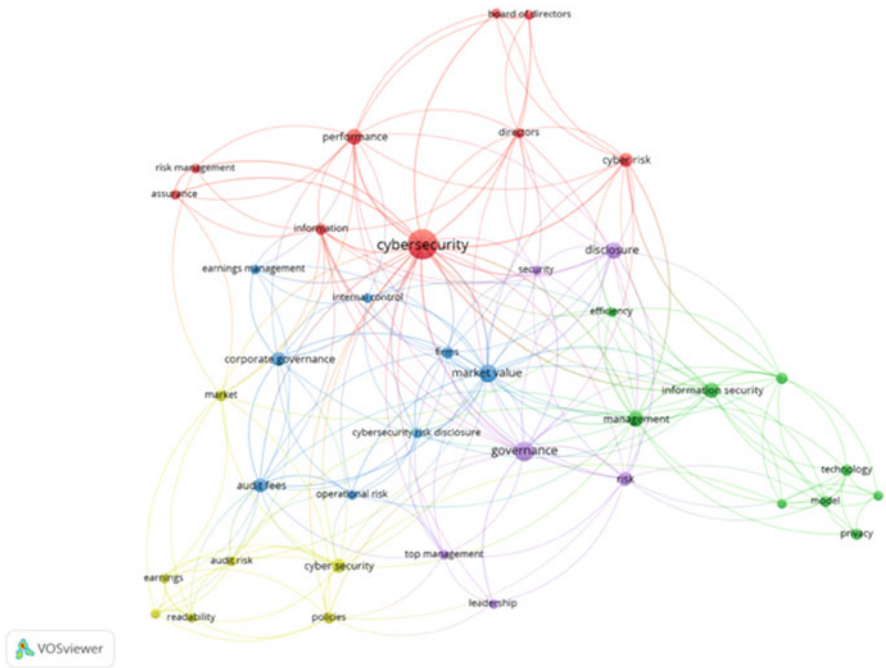


Fig. 4 Keyword network clustering (Source: our elaboration)

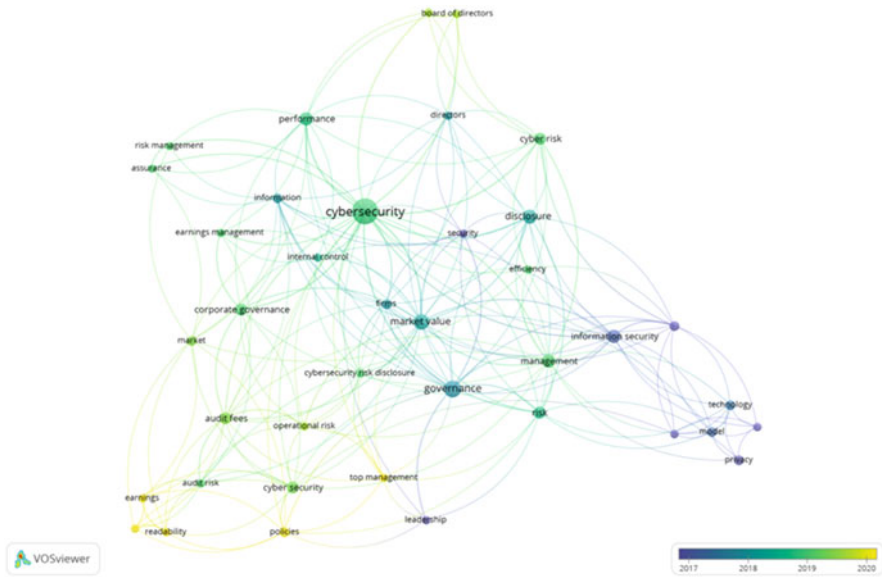


Fig. 5 Overlay visualization of keywords chronological analysis (Source: our elaboration)

“privacy”, “information security”), then it changed into studies on capital market effect of digital risk. At the same time, the relevance of cyber risk at a governance level emerged with specific reference to corporate governance, risk management, and internal audit. More recently, studies have focused on the relationship between board of directors and external audit characteristics and the quality of cyber-risk disclosure, also with reference to the issue of readability.

Finally, Fig. 6 shows the clustering results of the co-citation network, and reveals the existence of four main clusters (represented in green, blue, red, yellow).

As shown in the figure, Gordon et al. (2010) indicate the most important node of the green cluster and the most frequently cited item in the literature reviewed overall. Similarly, Cavusoglu et al. (2004) indicate the most important node of the blue cluster, and the second most cited overall. Wang et al. (2013) are the most cited of the red cluster. The most cited in the yellow cluster is SEC 2018—Commission Statement and Guidance on Public Company Cybersecurity Disclosures.

Each of these clusters covers diverse topics, but it is possible to note that the green cluster addresses the study on market value of voluntary information security disclosure. The blue cluster relates to the study on the capital market reactions for breached firms. The red cluster uncovers the association between the disclosed security risk factors and associated future breach announcements. The yellow cluster investigates the topic of the cybersecurity disclosure and SEC regulation. In the following sub-section, we provide a discussion of the findings from the studies in each depicted clusters.

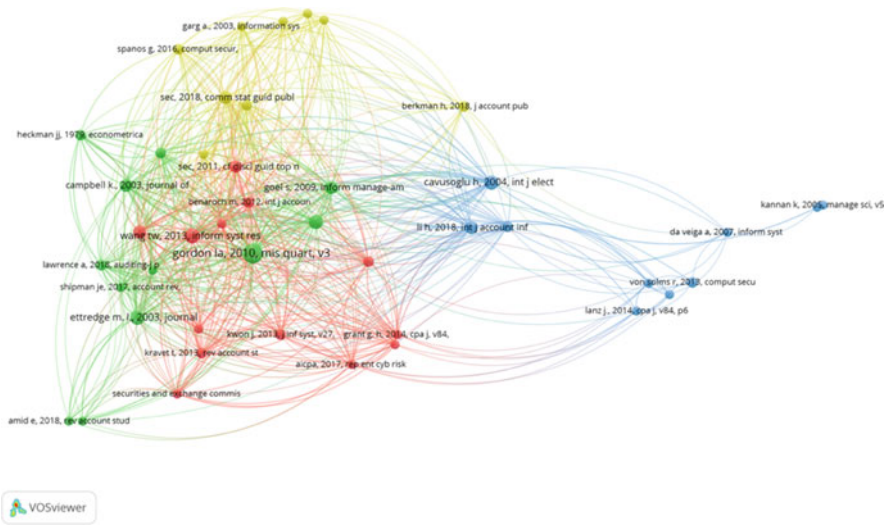


Fig. 6 Co-citation network clustering (Source: our elaboration)

3.3 Discussion of Findings

With the increasing importance of IT to the competitive position of firms, managers have become more sensitive to overall IT risk management because of unsophisticated IT usage (De Bakker et al., 2010).

Placed at the first position in the top 10 risk areas, cybersecurity risk reflects whether organizations are sufficiently prepared to manage cyber threats that could cause disruption and reputational harm (OnRisk 2020: A Guide to Understanding, Aligning, and Optimizing Risk). Digital risk represents a major threat for organizations due to the growing sophistication and variety of data breaches and cyber-attacks that continue to cause havoc on firms' brands and reputations, often resulting in disastrous financial impacts.

Since 2013, outsiders to the company such as criminals, hackers, and even competitors have attacked customer and corporate system and data with significant losses in terms of market value. The violation of high-profile payment-system has occurred at Neiman Marcus, UPS Stores, and Hard Rock Café. Hackers have also accessed the Apple iCloud data storage accounts of some celebrities, stealing and then releasing publicly their personal photos and videos. Other examples refer to Sony Picture, whose IT infrastructure was breached; Fiat Chrysler, that recalled Jeep vehicles as a cybersecurity flaw allowed hackers to remotely assume control of the car; and Monsanto Company was a victim of the theft of its advanced seed technology. More recently, Leonardo has been hacked for ten gigabytes of data and information of significant business value.

The emergence of cyber-attacks reveals that the disclosure of data, metrics, and information about digital risks is gaining importance for corporate stakeholders to assess the overall risk profile (Hilary et al., 2016; Li et al., 2018).

Corporate governance bodies hold the responsibility to monitor management's compliance with regulation and advise management in strategic decision making (Healy & Palepu, 2001; Ravasi & Zattoni, 2006; Garcia-Meca & Sanchez-Ballesta, 2010). When it comes to risk-related issues, the boards of directors' characteristics such as board independence, board-level committee structures, and other demographic characteristics might affect company disclosures (Beretta & Bozzolan, 2004; Eng & Mak, 2003; Linsley & Shrides, 2006; Ntim et al., 2013; Amir et al., 2018), shedding light on data theft and the loss of proprietary or customer information. Some studies also reveal that corporations with better governance and social responsibility may be more willing to invest in information security (Lending et al., 2018).

Our empirical analysis reveals that the topic of cyber-risk disclosure becomes central and urges to be addressed by organizations and regulators to ensure data security and protection for all stakeholders (Yallop & Aliasghar, 2020).

Cybersecurity has become a topic of great interest since 2010, when a milestone paper (Gordon et al., 2010) assessed the market value of voluntary disclosures concerning information security. Since the publication of this paper, disclosure of cybersecurity issues largely increased, also due to a 2011 requirement by the Securities and Exchange Commission. Subsequent studies on the post-guidance disclosure show that the market positively values cybersecurity awareness (Berkman et al., 2018).

This evidence notwithstanding, cybersecurity disclosure levels remain low. The two most commonly disclosed cybersecurity risks are risks of service/operation disruption and risks of data breach (Gao et al., 2020). Companies vary widely in the amount of detail they provide and the source of document. (e.g., annual MD&A, proxy circular, etc.) (Héroux & Fortin, 2020). Yet, managers withhold negative information on the more severe attacks (Amir et al., 2018). In addition, firms that have been involved in data security breaches are more likely to manipulate earnings through cutting discretionary expenses, decreasing discretionary cash spending, and reducing the cost of goods sold through overproduction (Xu et al., 2019).

Cybersecurity regulation has become very important for government organizations, agencies, and companies, as well as for other external stakeholders (Alelayani et al., 2020). Financial regulators of different countries also prescribe cybersecurity reporting policies for banks and financial institutions. However, the rules and guidance remain inadequate to address the various public and private interests at stake, especially when cyber risk is the concern of systemically important financial institutions, like the largest internationally active banks (Skinner, 2019). This remarks the importance for financial regulators to issue more stringent requirements to avoid boilerplate language.

While the importance of cybersecurity is widely acknowledged, there is no explicit requirement by regulators or standard setters for auditors to audit the related information. Evidence suggests that both past and future breach disclosures are associated with audit fees (Smith et al., 2019). Moreover, increases in audit fees

are smaller for firms with prior cybersecurity risk disclosure after 2011, when the SEC issued cybersecurity disclosure guidance (Li et al., 2020). Audit fees are not only influenced by the content in terms of number of words but also by the language disclosed in their cybersecurity risk disclosures (Calderon & Gao, 2020). As the length of cybersecurity risk disclosures increases over time, disclosures have become more difficult to read, especially for big firms. While the use of litigious language has increased over time, bigger firms tend also to use it less (Gao et al., 2020).

Besides this disclosure trend, it is important to understand the role of corporate governance for cyber-risks communication. With the mandatory data breach reporting rules, on the one hand, companies consider cyber-attacks an “IT issue” as opposed to a governance issue (Di Lernia et al., 2020). On the other hand, cybersecurity management has shifted towards strategic business issue with board-room implications (Schinagl & Shahim, 2020).

Shareholders and investors demand that their firms mitigate cybersecurity risk, and it is the responsibility of the board of directors to embed a culture of cybersecurity by appointing board members with IT knowledge and experience in order to gain and maintain stakeholder’s confidence (Al-Sartawi, 2020).

More often than not, firms are prioritizing the need to establish a board-level technology committee as part of the firm’s information technology (IT) governance to signal the firm’s ability to detect and respond to security breaches (Higgs et al., 2016). Top management has also a pivotal role in mitigating cybersecurity risk by establishing policies for biometric records, IT trainings, and disclosure of cybersecurity information to all stakeholders (Uddin et al., 2020).

4 Conclusion

In this chapter, we focused on the disclosure of NF risks and on the effectiveness of internal auditing procedures and corporate governance mechanisms in dealing with the emerging of cyber risk. With this aim, we started by presenting the diverse taxonomies of corporate risk in the existing literature, discussing the disclosure of NF risks, and illustrating the voluntary and mandatory frameworks for NF risks disclosure. It emerged that digital risk is not always present in the voluntary disclosure frameworks and empirical research. Then, we moved on to describe the evolution of European regulations with a particular attention to the role played by the recent Directive 2014/95/EU. Despite the 2014 Directive not explicitly including digital risk among those deriving from the mandatory NF information, there has been a rising awareness by numerous types of companies and regulatory bodies regarding its disclosure. Subsequently, we deepened the central role of internal auditors for the management of the digital risk and for its disclosure. After a brief review of the academic and professional literature, we showed the current practices in internal auditing for data protection and cybersecurity assurance. This overview revealed that traditional audit models should be revisited in order to develop new continuous assurance and cybersecurity services. It also revealed a gap in the relationship

between corporate governance mechanisms and cyber-risk disclosure. To fill this gap and in the light of the importance and the novelty of cybersecurity-related issues, we conducted a review of the studies on corporate governance and cyber-risk disclosure, with the ultimate aim to derive some implications for corporate governance and disclosure literature.

Our literature review on digital risk disclosure and corporate governance addressed this topic highlighting that, not long ago, the term cybersecurity was rarely mentioned; however, over just a relatively short period of time, it has become a high concern of companies, financial institutions, and many regulators. Owing to the fast advancement of technology, companies have an increasing need to maintain confidentiality and preserve information access control, but are also unequipped to mitigate the negative implication from a breach. Still, because outsiders cannot uncover cyber-attacks and managers often have incentives to withhold information, firms do not always provide complete digital risk disclosure. Regulators and financial institutions have recently recommended that companies release information on digital risk that materially damages their businesses (e.g., SEC, 2018; COSO 2017; ERM Framework); however, the disclosure remains low. Finally, the company's cyber security has become a responsibility of the board of directors and of the audit committee.

Overall, the findings of our study contribute to the disclosure literature by highlighting the governance characteristics that could impact on cybersecurity disclosure, thus complementing insights from prior governance research.

First, cybersecurity management needs to be a board of directors' concern that should be addressed, for instance, by increasing the membership on the board with cybersecurity knowledge, IT skills, and expertise, as directors are involved in management's decisions about digital risk related to financial reporting issues and disclosing data breaches.

Second, our study also points to the need to increase the top management sensitivity towards operational risks arising from data violations. Directors and executives with more diverse demographic characteristics could expose the board to broader perspectives when it comes to cybersecurity-related disclosure. Long tenured boards with more independent directors could be more engaged in IT issues and could give their valuable contributions to a better cybersecurity disclosure.

Third, companies with board-level technology committees are more committed to cybersecurity and more inclined to provide information on cybersecurity breach. This is just a starting point in recognition of the seriousness of cybersecurity threats in today's business environment. Strong internal audit teams might complement the board security expertise.

As for the practical implications, since voluntary disclosure of cyber-attacks is rare because managers tend to disclose less severe attacks and withhold information on attacks that cause greater damage, we claim that regulators should consider imposing strict mandatory disclosure rules regarding cyber-attacks and clear materiality thresholds. We also acknowledge the need to increase the external auditor's role and responsibilities in monitoring cybersecurity disclosure. However, several questions remain unanswered. For instance, how should board members be selected

in order to constructively contribute to boardroom discussions on cybersecurity disclosure? Which qualifications should they possess? Future research in the governance and disclosure domain could fruitfully address these questions.

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Implementing SDGs and Mandatory Non-financial Reporting in Corporate Practices: Insight from an Italian Global Player



Jonida Carungu, Matteo Molinari, Giuseppe Nicolò, Giacomo Pigatto, and Claudio Sottoriva

1 Introduction

Within the last decades, worldwide organisations have come under pressure to act responsibly and align their business models, strategic objectives, and operations with environmental protection, social equity, and ethics concerns (Lodhia, 2015; Manes-Rossi et al., 2018; Wachira et al., 2019). This goes hand in hand with the need to expand the magnitude of corporate reporting practices beyond the financial dimension, taking a broader perspective that also embraces non-financial information, to provide a more meaningful illustration of business performance to stakeholders (Lodhia, 2015; Manes-Rossi et al., 2018; Wachira et al., 2019).

J. Carungu

Guildhall School of Business and Law, London Metropolitan University, London, UK
e-mail: j.carungu@londonmet.ac.uk

M. Molinari

Kent Business School, University of Kent, Kent, UK
e-mail: m.molinari@kent.ac.uk

G. Nicolò (✉)

Department of Business Studies – Management and Innovation Systems, University of Salerno, Salerno, Italy
e-mail: gnicolo@unisa.it

G. Pigatto

Institute of Management, Sant’Anna School of Advanced Studies, Pisa, Italy
e-mail: g.pigatto@santannapisa.it

C. Sottoriva

Department of Economics and Business Management Sciences, Università Cattolica del Sacro Cuore, Milan, Italy
e-mail: claudio.sottoriva@unicatt.it

In 2015, Member countries of the United Nations (UN) adopted the 2030 Agenda for Sustainable Development, including 17 Sustainable Development Goals (SDGs) that represent a coherent and necessary blueprint for coping with the most relevant sustainability challenges (UN, 2015; GRI, 2017; Fonseca & Carvalho, 2019; Manes-Rossi et al., 2020). Under the SDGs agenda paradigm, governments, businesses, and civil society actors are called upon to take common actions to drive the progress towards the SD (Scheyvens et al., 2016). In particular, private businesses have been increasingly expected to take a leading role in achieving the SDGs due to the critical role as engines of “economic growth and employment, and as a source of finance, technology and innovation” (OXFAM, 2018, p. 5).

Thus, companies are called upon concretely to incorporate SDGs in their business models and strategies, designing value creation processes that balance—in a triple-bottom-line perspective—the economic, social, and environmental pillars of SD (Scott & McGill, 2018; Fonseca & Carvalho, 2019). To this end, non-financial reports, such as Sustainability Reports, may represent pivotal and strategic tools to better understand and measure the corporate progress towards the achievement of the SDGs (Fonseca & Carvalho, 2019; García-Sánchez et al., 2020). They support governance and management actors in internalising the SDGs’ spirit and setting internal goals and strategies that are more aligned with the SDGs priorities. Moreover, non-financial information disclosure—explaining the different ways companies are committed to achieving the SDGs—is crucial to satisfying stakeholders’ interests and attracting potential investors (García-Sánchez et al., 2020). Accordingly, as sustainability is progressively becoming “the lens through which a business is judged by its customers, workforce, society, governments and even its investors” (CGMA, 2018, p. 7), SDGs and their implications for value creation processes should necessary be integrated into corporate non-financial reporting practices (GRI, 2017; Fonseca & Carvalho, 2019).

Against this backdrop, the 2014/95/EU Directive (the EU Directive) on the disclosure of non-financial and diversity information (EU, 2014) is expected to encourage private sector commitment and action towards the achievement of the SDGs (GRI, 2017). It complements and supports the SDG target 12.6 (GRI, 2017), which claims to “Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle”.

Therefore, the EU Directive requires large companies—with more than 500 employees—to provide information on a pre-definite set of non-financial issues from the fiscal year 2017 (Biondi et al., 2020; Doni et al., 2019; Manes-Rossi et al., 2020). It has signed a far-reaching action towards greater accountability and transparency about non-financial matters (Carungu et al., 2020; Guthrie et al., 2020; Manes-Rossi et al., 2020). Although it does not directly mention the SDGs, the adoption of the EU Directive is called to support companies to concretely implementing responsible business models and operating conducts (GRI, 2017). Hence, the EU Directive should stimulate businesses to focus on addressing those issues that are pivotal to creating a more sustainable future (GRI, 2017; García-Sánchez et al., 2020). Along this line, the adoption of Sustainability Reporting to

comply with the EU directive may represent a reasonable opportunity to align business strategies and practices with SDGs and enhance the accountability and transparency towards stakeholders (Fonseca & Carvalho, 2019; García-Sánchez et al., 2020). However, this requires in-depth organisational changes, including the overhaul of corporate strategy, governance structure, culture, business models and operations, which should be harmonised with the priorities stemming from the SDGs considered relevant for the specific business (Scott & McGill, 2018; Di Vaio et al., 2020; Nicolò et al., 2020a, 2020b).

Nevertheless, studies exploring the implications of adopting the EU Directive in practice are still scant despite the topic's relevance. Moreover—due to the SDGs global relevance and its potential to inspire in-depth organisational changes—recently scholars have raised the need for more empirical research that provides evidence about how SDGs are operationalised in the organisational context and how manager and governance structures deal with the complexities and peculiarities stemming from its adoption (Bebbington & Unerman, 2018; Manes-Rossi et al., 2020).

Therefore, this research provides twofold contributions to the existing literature in the attempt to respond to these calls.

Firstly, it aims to explore how the SDGs are being integrated into corporate strategies and practices in the context of Sustainability Report preparers.

Secondly, it aims at enhancing the understanding of the organisational changes stimulated by the introduction of the EU Directive. In particular, due to its strategic role in reporting decisions and disclosure strategies, this work focuses on the impacts and the implications produced by the EU Directive introduction from a governance perspective.

A case study approach—focused on a multinational global player—is adopted to understand better how an organisation that adopts the Sustainability Reports internalises the SDGs and deals with the prescriptions of the EU Directive. In doing so, in-depth interviews with key decision-makers—who played a crucial role in preparing the Sustainability Reports and the EU Directive adoption—and document analysis have been conducted.

The rest of the research work unfolds as follows. The next section is devoted to the literature review. The third section illustrates the theoretical background which informs the research, while the fourth section explains the research methods. The fifth section presents and discusses the results. The last section outlines concluding remarks.

2 Literature Review

2.1 *Non-financial Disclosure and the Directive 2014/95/EU*

Within the accounting area, the non-financial disclosure agenda roots its origins in the 1970s when the Friedman's (1962) neoclassical theory—based on the

assumption that the only responsibility of companies was to maximise the profit to the primary benefit of stakeholders—has begun to be called into question (Prado-Lorenzo & García-Sánchez, 2010; Ioannou & Serafeim, 2017). In the aftermath of negative events and circumstances such as the global financial crisis, environmental pollution, climate changes, accounting scandals, and unethical social practices, companies have experienced a dramatic increase in stakeholders' scrutiny for the social and environmental impacts of their activities (Ioannou & Serafeim, 2017; Manes-Rossi et al., 2018). As a result, Friedman's assumption was overturned as the companies have been increasingly expected to increase the spectrum of their responsibilities beyond the simple economic dimension of increasing shareholder wealth (Lodhia, 2015). Organisations were called upon to include new responsibilities in their decision-making processes and new duties towards the stakeholders and society at large that can be resumed under the umbrella concept of Corporate Social Responsibility (CSR), whereby "companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (EU, 2002). Along this line, the significance of traditional reports—mainly focused on financial issues—has been discussed at length. Accordingly, non-financial disclosure emerged in the 1970s both in the USA and in Europe (e.g. Netherlands and France) as an extension of earlier forms of corporate reporting that add information about the social policies and the impacts of their activities (e.g. human rights; health and safety of employees; impacts on society) to meet the renewed interests of stakeholders (Milne & Gray, 2007; Milne & Gray, 2013). In the same way, following the Exxon Valdez disaster and the creation of the US-based Coalition for Environmentally Responsible Economies (CERES) principles for the corporate environmental conduct—starting from the end of the 1980s—stand-alone voluntary reports focused on firms' environmental performance began to spread (Milne & Gray, 2007; Ioannou & Serafeim, 2017).

Meanwhile, first empirical studies have been conducted, evidencing that non-financial disclosure was not a systematic activity as it was not regulated by norms (Guthrie & Parker, 1989, 1990; Gray et al., 1995; Hackstone & Milne, 1996; Hahn & Kühnen, 2013). Human resources and community involvement represented the most addressed issues, while environmental disclosures appeared to be mainly associated with reactions to negative events of firms operating in particular environmental sensitive sectors such as Oil and Gas, chemical, mining and steel (Deegan & Gordon, 1996; Deegan & Rankin, 1996; Guthrie & Parker, 1989; Patten, 1992). Moreover, while size has been largely identified as a positive determinant of non-financial disclosure, both profitability and leverage exert mixed impacts (Hahn & Kühnen, 2013).

The 1990s were marked by the diffusion of more comprehensive and mature forms of voluntary non-financial reporting based on the Triple-Bottom Line (TBL) idea of providing—to a wider range of stakeholders—accountability for the environmental, social, and economic impacts of business activities (Milne & Gray, 2007; Prado-Lorenzo & Garcia-Sanchez, 2010). The launch of the Global Reporting Initiative (GRI) in 1997 by the CERES and the United Nations Environment Programme (UNEP), and the release of the first GRI Guidelines in 2000, represent

two watershed moments in the non-financial disclosure agenda. In the wake of these initiatives, the TBL approach to corporate reporting gained growing prominence among worldwide organisations (Milne & Gray, 2013; UNEP et al., 2010). Accordingly, Sustainability and CSR reports based on GRI Guidelines have become the most popular forms of non-financial reporting, albeit, for many years, a lack of mandatory requirements for non-financial disclosure persisted.

Afterwards, in 2003, the EU passed the Directive 2003/51 (the Modernisation Directive) to realise a first attempt to mandate non-financial reporting. In amending the Accounting Directive, the Modernisation Directive established that starting from the fiscal year 2005, European companies should include information on environmental and employee matters with related Key Performance Indicators (KPIs) in their annual and consolidated reports (EU, 2003; Camilleri, 2015; Manes-Rossi et al., 2020). Along this line, several EU Member States (e.g. UK; France; Sweden; Spain; Netherlands; Denmark) have started to adopt internal laws to transpose the Modernisation Directive and make Sustainability Reporting mandatory. This wide spectrum of regulatory instruments which followed the Modernisation Directive paved the way for realising a final step consisting of standardising and harmonising non-financial reporting practices.

To this aim, in September 2014, the EU released the Directive 2014/95/EU on the disclosure of non-financial and diversity information (EU, 2014). It recognises that non-financial information is pivotal for ensuring progress towards a sustainable global economy and aligning the long-term corporate profitability with the pillars of social justice and environmental protection (EU, 2014; GRI, 2017). Moreover, the EU Directive also aimed to encourage private sector companies in contributing towards achieving the 17 SDGs enounced in the 2030 Agenda For Sustainable Development (UN, 2015) and reporting on their progress (GRI, 2017; Manes-Rossi et al., 2020; Nicolò et al., 2020b).

According to the EU Directive, public-interest entities—with more than 500 employees—are required to include—in their management report or a separate non-financial statement—a minimum extent of non-financial information related to environmental, social and employee-related matters, respect for human rights, bribery and anti-corruption issues, and diversity on the boards of directors, as from the year 2017 (EU, 2014; Guthrie et al., 2020; Manes-Rossi et al., 2020; Nicolò et al., 2020a). In addition, companies must add a description of the business models and the policies adopted to address non-financial issues and illustrate the risks stemming from operations related to those matters (GRI, 2017). Also, the use of non-financial KPIs relevant to the business is requested (Camilleri, 2015; GRI, 2017).

The EU Directive covers approximately 6000 large companies and groups across the EU, including banks, listed companies, insurance companies, and other organisations identified by national authorities as public-interest entities (Guthrie et al., 2020). However, it confers some degrees of flexibility to the Member States for its transposition and companies selecting the best reporting form and framework to comply with its requirements (Biondi et al., 2020; La Torre et al., 2018; Molinari & Carungu, 2019).

To date, each EU Member State has finalised the transposition of the Directive into national laws with some differences related to: (1) the definition of organisation as large undertaking and public-interest entities; (2) Report topics and content; (3) Reporting framework and Disclosure format; (4) Auditor's involvement and independent assurance obligations; (5) Penalties for non-compliance (GRI, 2017; La Torre et al., 2018).

However, the piecemeal and diversified approaches adopted to comply with the EU Directive raise many concerns among policymakers and regulators. The resulting pitfalls in terms of comparability, usefulness, and reliability of non-financial reporting is undermining the investors' ability to both evaluate firms' sustainability-related risks and opportunities and assess the environmental and social impacts of their investments (EC, 2020a). As a result, in keeping with the Commission's Communication on the European Green Deal (EC, 2020b), a review of the Non-Financial Reporting Directive has started in 2020 as part of the strategy to improve the foundations for sustainable investment (EC, 2020a).

2.2 Non-financial Disclosure and Corporate Governance

In this section, firstly, we will describe how non-financial disclosure has been viewed as a response to the principal-agent problem. Secondly, we will provide some insights into the linkages between corporate governance (CG) and non-financial disclosure.

2.2.1 The Agency Problem and the Disclosure of Information

Disclosing information—whether voluntary or mandatory—is seen to decrease the principal-agent relationship's information asymmetry. According to Jensen and Meckling (1976), agency costs are the reason why accounting reports would be voluntarily provided to creditors and shareholders by managers. This view of corporate disclosure is coherent with the incremental information approach rooted in voluntary disclosure theory that aims at improving investors' decision-making, and it is in opposition to the impression management approach that sees voluntary disclosure as an opportunistic choice of managers (Bolino et al., 2008; Brennan & Merkl-Davies, 2015; Dye, 1985; Merkl-Davies & Brennan, 2007; Verrecchia, 1983). For example, Clarkson et al. (2008) found a positive association between the voluntary disclosure of environmental information and the environmental performance of companies as predicted by economics-based voluntary disclosure theories.

As Buhr et al. (2014) describe, voluntary disclosure over the years has mainly been focused on the disclosure of non-financial information. In particular, they identify disclosure threads related to employee reporting, social reporting, environmental reporting, sustainability reporting, and < IR >. According to KPMG's (2017)

survey on the 250 world's largest companies (G250) and on the 4900 companies comprising the top 100 companies by revenue in 49 countries (N100), the trend of voluntary disclosure has been positive since the early 2000s. The share of G250 companies issuing a voluntary report has increased from 35% in 1999 to 93% in 2017, while the share of N100 companies has increased from 24% to 75% in the same period. This surge in non-financial reporting is also complemented by the proliferation of reporting frameworks and standards such as, among others, the Global Reporting Initiative, the Carbon Disclosure Project, the Sustainable Accounting Standards Board, and the <IR> Framework (IIRC, 2013), to name a few. Further, to reinforce such a trend of non-financial disclosure—as seen in Sect. 2.1—actions have been undertaken by regulators to push the disclosure as in the case of the Directive 95/2014/EU and the King Code of Corporate Governance in its fourth version (The Institute of Directors in Southern Africa, 2016).

2.2.2 Corporate Governance Mechanisms and Non-financial Disclosure

De Villiers and Hsiao (2018) argue that disclosure is a means for investors to supervise managerial actions, potentially complementing or substituting CG mechanisms.

CG is a field of inquiry studied in different disciplines such as accounting, organisational theory, management, sociology, and psychology, to name a few. In broad terms, CG refers to the “formal structures, informal structures, and processes that exist in oversight roles and responsibilities in the corporate context” (Hambrick et al., 2008, p. 381). Traditionally, CG has been viewed as a direct consequence of Jensen and Meckling's (1976) agency problem, in which owners of a company (the principals) set up controls and constraints upon managers (the agents) to reduce misallocation of resources and self-serving behaviours (Clarke, 2004) as well as to limit impression management strategies (de Villiers & Hsiao, 2018).

It is believed that good CG is essential for having a healthy economy. The OECD (2004, p. 2) affirms that good CG “contributes to growth and financial stability by underpinning market confidence, financial market integrity and economic efficiency”. To achieve such a good CG, the OECD (2004) describes six principles organisations should follow to bridge the gap of interests between shareholders and those who run the company. Among such principles, the fifth is about disclosure and transparency. It states that “the corporate governance framework should ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company” (OECD, 2004, pp. 8–9). It follows that disclosure is seen as a necessary effort that agents should sustain to provide accountability to their principals.

Velte and Gerwanski (2020) identify two different types of mechanisms of CG that may impact the decision to disclose information. On the one hand, internal CG mechanisms such as the composition of the board of directors (BoD) and its committees should reduce the agency costs. Reviewing extant literature on <IR>

and CG found that many factors related to internal CG mechanisms may impact <IR> practice, such as gender and foreign diversity of the BoD, board independence, size, and meeting frequency. Besides, the audit committee's effectiveness, the frequency of its meetings, and its authority are positively associated with the quality of integrated reports. On the other hand, the presence of external CG mechanisms such as the presence of institutional investors and independent assurers is helpful to increase the credibility of reports and to monitor management's sustainability-related activities (Velte & Gerwanski, 2020). Also, Smith (2019) argues that providing management with frameworks, dashboards, and reports through which they can communicate strategic information to relevant stakeholders may be a good move to prevent—and possibly tackle—challenging issues.

3 Theoretical Background

This section will describe two competing frameworks used in the literature to explain why companies disclose non-financial information. In the remainder of this chapter, we will use a multi-theoretical approach to interpret the case study's data (Hoque et al., 2013; Wang et al., 2019). First, we will provide an overview of shareholder and stakeholder theories as descendants of the agency relation described in Jensen and Meckling (1976). Second, we will dive into the stewardship theory (Davis et al., 1997) as an alternative approach to the manager–owner relationship.

3.1 *Shareholder and Stakeholder Theories*

Shareholder and stakeholder theories are rooted in the agency model of the firm (Jensen & Meckling, 1976; Turnbull, 1997). Shareholder theory posits that owners need to construct rules and incentives to effectively align the behaviour of individualistic, opportunistic, and self-serving subordinates to their desires (Turnbull, 1997). The stakeholder model concerns providing voice and ownership-like incentives to those groups (e.g. consumers, employees, investors, NGOs) contributing to and receiving benefits from the firm (Clarke, 2004).

In such models, disclosing information coincides with the necessity to overcome the information asymmetry problem, thus giving relevant parties the necessary information for their decision-making activities (Jensen & Meckling, 1976). Therefore, as individuals informed about the organisation's true performance, managers may voluntarily disclose information either to be accountable for their action or to manage owners' impressions for self-serving purposes (de Villiers & Hsiao, 2018; Velte & Gerwanski, 2020).

Similarly, from an agency perspective, CG mechanisms are constraints that “managers put upon themselves, or that investors put on managers” to ensure that management bears the costs of its misconduct, therefore, promoting self-control

(Clarke, 2004, p. 5). In other words, CG mechanisms are in place to oversee managerial decisions and ensure efficient corporate operations on behalf of the investors and other relevant stakeholders (de Villiers & Hsiao, 2018).

3.2 Stewardship Theory

Davis et al. (1997) criticise the economic approach to governance based on agency and propose a sociological and psychological approach based on stewardship. They argue that the assumption of individualism and self-actualisation on which the agency approach rests may not apply to all managers. In Davis et al.'s (1997) view, subordinates are not individualists but collectivists; not opportunistic but pro-organisational; not self-serving but trustworthy. As shown in Table 1, many differences exist between agency and stewardship approaches such as the emphasis on control in the former and on involvement in the latter. Besides, Dumay et al. (2019, p. 29) see in the stewardship theory and behaviour “the ground of the organisations’ commitment to sustainability that should inform their corporate governance”.

Table 1 Comparison of Agency Theory and Stewardship Theory

	Agency Theory	Stewardship theory
Model of man	Economic man	Self-actualising
Behaviour	Self-serving	Collective serving
<i>Psychological mechanisms</i>		
Motivation	Lower order/economic needs (physiological, security, economic) Extrinsic	Higher-order needs (growth, achievement, self-actualisation) Intrinsic
Social comparison	Other managers	Principal
Identification	Low-value commitment	High-value commitment
Power	Institutional (legitimate, coercive, reward)	Personal (expert, referent)
<i>Situational mechanisms</i>		
Management philosophy	Control oriented	Involvement-oriented
Risk orientation	Control mechanisms	Trust
Time frame	Short term	Long term
Objective	Cost control	Performance enhancement
Cultural differences	Individualism Higher power distance	Collectivism Low power distance

Source: Davis et al. (1997, p. 37)

3.3 Agency, Stewardship, and Sustainability Practices

Naciti et al.'s (2021) review of studies on sustainability and CG identifies stakeholder theory as the most influential in the early development of CG and sustainability literature. Moreover, in recent times a surge in studies analysing the interplays between the BoD composition and sustainability practices reinforces the prevalence of the agency paradigm in the field (Naciti et al., 2021).

However, the agency–stewardship dichotomy is not just a matter of theoretical discussions but entails practical differences (Davis et al., 1997). For example, Rubino and Napoli (2020, p. 15) found that coherently with an agency perspective, Italian firms with “(1) a larger proportion of independent directors on their boards; (2) boards of a larger size and (3) family firm status” obtain better environmental performance. However, Chevrollier et al. (2020, p. 134) maintain that “a company with a stronger strategic orientation on stewardship has significantly higher ESG performance than a company with a strategic orientation that is more instrumental”. Such examples showcase that different CG approaches to sustainability practices have different performance and impacts outcomes.

In the remainder of this chapter, we will use the insights of agency-rooted theories of CG and stewardship theory. This choice is coherent with a multi-theoretical approach to the case study (Wang et al., 2019), and it is similar to the theoretical triangulation explained in Covaleski et al. (2003) and Hoque et al. (2013). In other words, since no theory has a monopoly on explanations (Hoque et al., 2013; Laughlin, 1995), using multiple perspectives help the researchers in producing different insights (Gurd, 2008).

4 Research Methodology

This section presents the research methodology, and it is structured into two sub-sections. Sub-sect. 4.1 focuses on the research approach implemented and the introduction of Enel. Sub-sect. 4.2 examines the process of data collection and the research technique adopted for the data analysis.

4.1 Case Study Approach and the Selected Company

In order to observe the corporate governance mechanisms and effects on compulsory non-financial reporting, we selected a case study approach. The case study is considered the qualitative research approach *par excellence* and a very useful research tool (Yin, 1989, 2003). In particular, we are applying a “single case study design”, exploring the non-financial reporting phenomenon within a selected company (Daymon & Holloway, 2010, p. 119).

The justification of this research is try and help to shed light on an important issue (such as adoption and implementation of non-financial reporting), by providing “rich” descriptions of what goes on in an environmentally sensitive sector (such as electric utilities), in a specific case (such as Enel) and regarding a particular group of people (such as the Board of Directors, Management Committee, and Sustainability Committee) (Daymon & Holloway, 2010, p. 13).

Enel, first established in 1962, is now a multinational Italian company and one of the world’s leading integrated electricity and gas operators.

The company operates in more than 30 countries across five continents, and it counts 80.3 billion of euros of total revenue earned at a group level (Enel, 2020). On December 31, 2019, the group counted 68,253 total employees, 69.9 million customers (5.9 million gas customers and 64.0 million electricity customers), a share capital of 10.17 billion of euros, consisting of national and international investment funds, insurance companies, pension and ethical funds, as well as approximately 800,000 small savers (Enel, 2020).

Sustainability plays a fundamental role for Enel. It is considered the “driving force” of the business model. This is also highlighted in Enel’s purpose:

“Open Power for a brighter future. We empower sustainable progress” (Enel, 2020, p. 11).

In particular, in the 2019 Sustainability Report, objectives such as: the fight against climate change, the reduction of negative environmental impact, the protection of stakeholders and communities, and the contribution to a circular economy are emphasised as part of a broader commitment towards SDGs (Enel, 2020).

The company’s considerable commitment towards non-financial practices has also been developed from previous studies. For instance, Mio and Fasan (2013) provide a discussion on Enel, as an International Integrated Reporting Council (IIRC) pilot programme company, evolving its corporate disclosure towards Integrated Reporting (IR).

4.2 Data Collection and Analysis

The selected company was directly and actively observed for 9 months (March, 2020–November, 2020), and data collection consists of two phases. First, two semi-structured interviews with the BoD and Sustainability Committee members are conducted to provide in-depth insights into governance mechanisms changes following mandatory non-financial reporting adoption. Also, an in-depth online semi-structured interview with a key informant (Head of Sustainability Planning and Performance Management) is conducted to analyse the interviewee’s experiences (Seidman, 2013). The interview questions were consistent with the research purpose and they did not “lead” a respondent to give a detailed response or take an extreme position (Brotherton, 2008). For example, some of the open questions were:

Table 2 Non-financial documents 2017–2019

	Published documents
2017	Consolidated Non-financial Statement ex Legislative Decree 254/16—year 2017; Sustainability Report 2017; Business model for a low carbon growth; Communities and value sharing; Green Bond Report 2017.
2018	Consolidated Non-financial Statement ex Legislative Decree 254/16—year 2018; Sustainability Report 2018; Total Tax Contribution 2018; Long term sustainable growth 2018; Green Bond Report 2018; Growth across low-carbon technologies and services.
2019	Sustainability Report 2019—Consolidated Non-financial statement; Green Bond Report 2019; Commitment to the fight against climate change 2019; Sustainability plan.

Source: Authors' elaboration from company's website

1. Can you please provide some background information about yourself and your role? (Educational background, Professional Experience, N. of years in the organisation, etc.). What is your role in Enel's non-financial reporting process?;
2. How is Enel's sustainability strategy developed?;
3. What are the main documents and tools you use for non-financial reporting (e.g. sustainability report, integrated report, supplementary documents, website, institutional communications, etc.)?;
4. How do the corporate governance mechanisms in Enel contribute to the non-financial reporting process?

Interviews are conducted in Italian and translated in English. Interview transcripts are then profoundly analysed.

Also, a documentary analysis was adopted to analyse secondary data from different types of non-financial documents prepared by Enel (e.g. sustainability reports, sustainability plan). The secondary data analysed are collected from the company's website, and they include the non-financial reports prepared by Enel from 2017. In particular, as shown in Table 2, we selected sustainability reports, presentations, and plans published from 2017 to 2019.

Time limit (i.e. 2017) is demarcated from the mandatory requirements for preparing non-financial reports from the Italian Legislative Decree no. 254/16. The first analysis is conducted on the overall structure of the reports published from January 1, 2017, in order to familiarise with the company's non-financial reporting content. Secondly, we have examined the reports, by observing the corporate governance engagement and scrutinising the business's sustainable strategy. The investigation of additional documents is considered significant in qualitative research as "the information provided in them may differ from or may not be available in spoken form" (Daymon & Holloway, 2010, p. 277).

The selected data analysis method conducted on the transcripts, notes, and non-financial documents is content analysis (Krippendorff, 1980, 1989, 2004), which was manually performed.

In particular, content analysis is defined as a "research technique for making replicable and valid inferences from data to their contexts (or other meaningful matter) to the contexts of their use" (Krippendorff, 1989). Even if it relies on

collecting data from documentary or mainly text-based sources (Daymon & Holloway, 2010, p. 276), content analysis can be carried out with a quantitative or qualitative focus. The former relates to the identification and the counting patterns of frequency and regularity in many texts (Daymon & Holloway, 2010, p. 276). Conversely, according to Pickering (2006), qualitative content analysis “begins at the point where statistical presentation reaches its limits”, meaning that there are features, rhetoric, metaphors, and figures that are hidden. Consequently, in this chapter, a qualitative content analysis is carried out.

Finally, the methodological limitation of this study is mainly related to the number of interviews conducted and the fact that we are only focusing on a single case study (Yin, 2003).

5 Findings and Discussion

Drawing on agency- and stewardship-rooted theories of CG, this section discusses the findings of the case study analysis, and it is divided into 3 sub-sections. Sub-sect. 5.1 highlights the integration of SDGs into sustainability strategy of Enel Group. Sub-sect. 5.2 presents the sustainability corporate governance structure. Sub-sect. 5.3 shows the main organisational changes prompted by the implementation of the Non-financial disclosure regulation.

5.1 *The Integration of SDGs into Sustainability Strategy*

The concept of Sustainability characterises the lever through which Enel faces current sustainable development challenges, and “*for creating, together, a new balanced development model that leaves no one behind*” (Head of Sustainability Planning and Performance Management). Indeed, the sustainability strategy represents a shared commitment within the organisation towards developing and growing a better quality of life for society (Davis et al., 1997). Consistently, in 2015, Enel revolutionised its growth model, placing sustainability at the core of the value chain process, and renewable energy’s projects as the driver of growth:

[...] the new strategic plan shows how we will invest 190 billion euros in the next ten years to the renewable technologies and intelligent energy distribution projects. Sustainability investments aim at reducing direct CO2 emissions by 80% in 2030 compared to 2017, generating more than 100 billion of Gross Domestic Product (Head of Sustainability Planning and Performance Management)

Sustainability and value creation are absolutely linked. By investing in environmentally and socially sustainable projects, Enel aims at minimising risks while contributing to the achievement of the SDGs:

[...] Some numbers: socially responsible investors continue to grow in 2019 and hold 10.8% of total shares (10.5% in 2018), equal to 14.1% of the free float (13.7% in 2018). In addition, Enel investors who have subscribed to the United Nations Principles for Responsible Investment (UN PRI) hold 43% of the total shares. Enel is also present in the main sustainability indices and ratings, positioning itself as a sector leader on several occasions [...] (Sustainability Committee Member)

The sustainability plan identifies the strategic priorities of the Group in line with strategic plan priorities. More specifically, centrality of people and communities, sustainable supply chain, solid governance, occupational health and safety, and attention to the environment strengthen and complement the Group's sustainable strategy. The strategic plan calls for specific investments dedicated to the electrification of consumption, promoting growth, and constant increases in efficiency supported by the creation of global business platforms (Davis et al., 1997).

The 2020–2022 strategy focuses on achieving the UN SDGs throughout the entire value chain, placing SDG 13 (Action to combat climate change) at the centre. The pillars are the decarbonisation of the energy mix by accelerating renewable capacity growth (SDG 7—Affordable and clean energy) and the gradual closure of coal plants, combined with the electrification of consumption. The enabling factors are infrastructure and networks, in line with SDG 9 (Industry, innovation and infrastructure), ecosystems and platforms, and SDG 11 (Sustainable cities and communities). Figure 1 shows the 2020–2022 sustainability plan of Enel Group.

The organisation's management philosophy is involvement-oriented and long-term framed (Davis et al., 1997). Indeed, a high level of attention is devoted to the organisation's employees, considered key actors of the strategy and energy transition. In this context, Enel promotes the development of upskilling and reskilling programmes aimed at developing existing professional skills and creating new occupational profiles. Clear and precise objectives also concern the performance appraisal, the corporate atmosphere, and the development of digital skills:

"In the matter of diversity and inclusion the commitment to reaching 50% of women involved in selection processes by 2022 is proceeding, plus a new objective aimed at raising the number of female managers and middle managers in the organisation" (Sustainability Committee Member)

Enel also continues to promote the economic and social growth of the local communities. Clear objectives are also linked to rising levels of attention to occupational health and safety, promoting a sustainable supply chain, an increasingly integrated governance structure and environmental management based on reducing emissions and consumption while also promoting biodiversity. Consequently,

"by means of a sustainable business model and clear and challenging objectives, Enel seeks to accelerate the energy transition without leaving anyone behind, creating value over the long term for stakeholders of all categories" (Enel Sustainability Report, 2019, p. 22).

The integration between business and sustainability materialises in the strategy, in the operations, in the financial instruments, in the corporate reporting, and the remuneration policy (Davis et al., 1997). Recently, the Group issued the first Sustainability-Linked Financing Framework, an all-encompassing document with

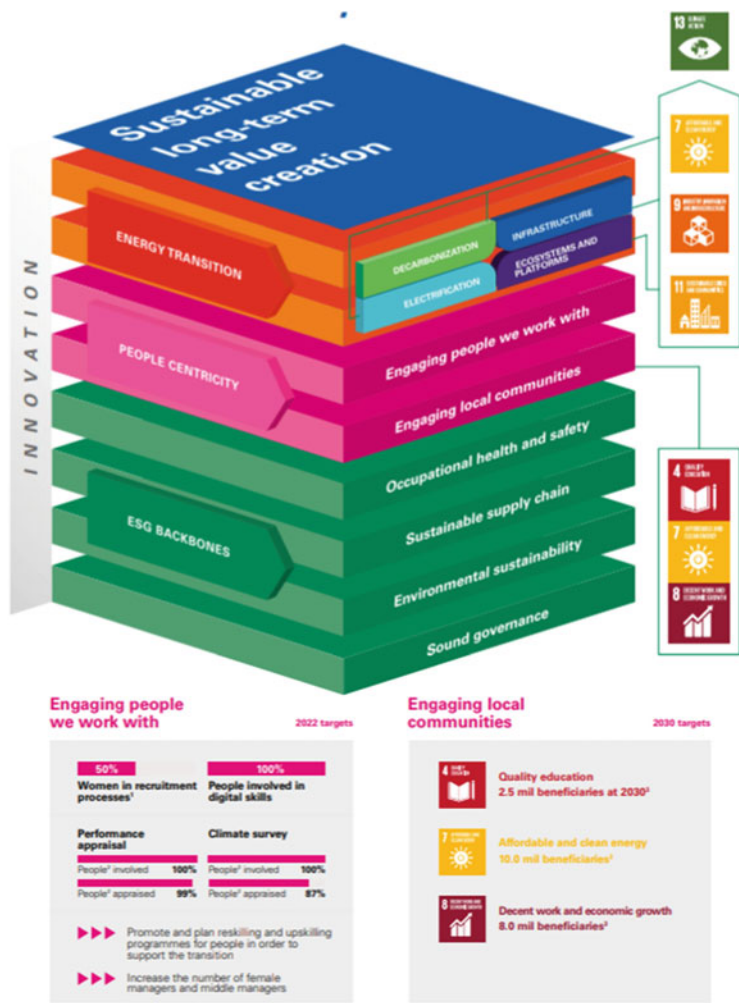


Fig. 1 2020–2022 Enel Sustainability Plan. (Source: Enel Sustainability Report (2019, p. 21))

which Enel regulated the link with the sustainability of all the financial instruments used, such as loans, commercial paper, and bond issues. The Group aims to increase the share of sustainable funding sources to 48% by 2023 and more than 70% by 2030 (Head of Sustainability Planning and Performance Management). Furthermore, Enel paid even greater attention to sustainability objectives in the remuneration policy. The weight of the sustainability objectives increased from 25% to 30% for the short-term variable component and from 10% to 25% for the long-term component (Enel Sustainability Report, 2019). From an accounting perspective, in 2019, Enel revolutionised its corporate reporting framework to communicate both financial and non-financial elements to all stakeholders in a broad and targeted way, and

therefore reducing agency costs (Jensen & Meckling, 1976). Enel's new corporate reporting consists of Annual Financial Report, Sustainability Report, Corporate Governance Report, and Remuneration Report:

"The Sustainability Report, which now constitutes the Non-financial report, is aimed at all categories of stakeholders and has focused attention on ESG (Environmental, Social and Governance) issues, contributing to sustainable development. The report makes it possible to disseminate future ESG megatrends and relevant innovative issues, providing a broader vision of Enel as a sustainable company of the future, including issues that, like today, do not have a financial impact" (Sustainability Committee Member)

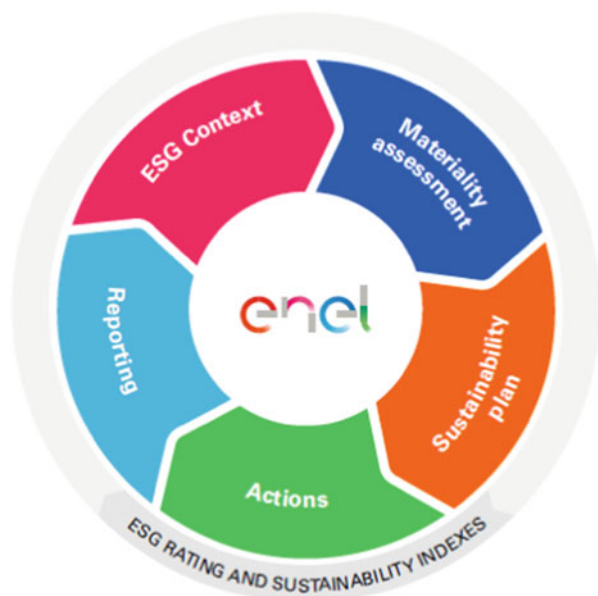
However, the integration of SDGs into the sustainability strategy of Enel is still ongoing, and there are some aspects to develop further. For instance, the recent sustainability reports of the company do not provide in-depth information and full disclosure on the related impacts of sustainability investments for the long-term value creation process. Moreover, even if the Enel sustainability plan identifies the related SDGs that sustainability projects and initiatives aim to pursue, questions raise whether the SDGs' contribution can be properly measured and monitored. Furthermore, Enel's new corporate reporting lacks a comprehensive communication approach, which an Integrated Report could address. These critiques should further inspire organisational changes in the context of Sustainability Report preparers, which in turn, could entail higher sustainability compliance.

5.2 Sustainability Corporate Governance Structure

The corporate governance structure of Enel is inspired by a collective serving behavioural approach (Davis et al., 1997). Indeed, Enel relies on international best practices, which permeate the decision-making and operational processes along the entire value chain based on high-value commitment identification. The integration of environmental, social, and governance issues is guaranteed through structured processes, which include analysis of the sustainability context, identification of priorities for the organisation and the stakeholders, sustainability planning, implementation of specific actions, reporting and management of ESG ratings and sustainability indices (Head of Sustainability Planning and Performance Management). Figure 2 depicts the sustainability governance process.

Enel's internal operational structures and procedures for implementing sustainability practices are well defined and structured and aim to reduce agency costs (Velte & Gerwanski, 2020). The Board of Directors examines and approves the strategic, industrial, and financial plans, including the annual budget and the Group Business Plan, which incorporate the principal guidelines to promote a sustainable business model and lay the basis for long-term value creation. The Board is responsible for approving the Sustainability Report, which constitutes the Consolidated Non-Financial Statement according to Legislative Decree no. 254/16, after consulting the Control and Risks Committee and the Corporate Governance and Sustainability Committee. By coordinating the activities of the Board of Directors,

Fig. 2 Sustainability governance process.
(Source: Enel internal documents)



the Chairman of the Board of Directors, who currently also occupies the post of Chairman of the Committee for Corporate Governance and Sustainability, performs a proactive role in the process of approval and supervision of the sustainability strategy. Under the Board member, the Chief Executive Officer and General Manager are responsible for defining and implementing a sustainable business model, defining the guidelines for the management of the energy transition, promoting zero-carbon emission energy generation and corporate practices that award consideration to the needs of the various stakeholders. Moreover, the Innovability Function (Innovation and Sustainability), which reports directly to the Chief Executive Officer, manages all activities from sustainability and innovation (Enel Sustainability Report, 2019).

The Corporate Governance and Sustainability Committee plays a key role in the governance of Sustainability based on high-value commitment, performance enhancement, and a pro-organisational and trustworthy approach (Davis et al., 1997). Particularly, the committee monitors the sustainability topics linked to the pursuit of operating activities and interaction between the organisation and its stakeholders; examines the guidelines of the sustainability plan and the methods of implementation of the sustainability policy; monitors Enel's ranking in the main sustainability ratings; examines the layout of the sustainability report and articulation of the related contents, and also completeness and transparency of the disclosures supplied by the documents in question; examines the main company procedures rules and procedures of significance about stakeholders (Head of Sustainability Planning and Performance Management).

Among other aspects, responsibilities of the Control and Risks Committee include examining sustainability report contents of significance concerning the Internal Control and Risk Management System, and the main corporate rules and procedures linked to the Internal Control and Risk Management System and having a significant impact in preventing and tackling challenging sustainability issues (Smith, 2019). Then, the global Business Lines, countries, global service Functions, and Holding Functions incorporate ESG factors in their decision and operational processes to generate sustainable value in the long term (Velte & Gerwanski, 2020).

5.3 *Organisational Changes for Non-financial Disclosure*

The process of non-financial reporting implementation is strictly linked with corporate governance mechanisms as relevant changes in reporting practices necessarily require proper governance systems (de Villiers & Hsiao, 2018). Accordingly, corporate governance structural changes attuned with strategies implemented and internal practices and routines put in place to cope with the new mandatory requirements. As previously discussed, Enel had already set up a corporate governance system to support sustainability reporting. However,

“[...] the turning point was 2014 when a new structuring of the Sustainability area was defined, reporting directly to the CEO. In any case, specific tasks were already assigned to the Committees and the Board of Directors in terms of Sustainability Reporting analysis and approval” [...] (Sustainability Committee Member)

Noteworthy, the introduction of the Non-financial regulation has strengthened the culture of non-financial reporting within the organisation, promoting greater awareness, especially in the non-financial information “owners”, and advancing a collective serving behavioural approach and high-value commitment (Davis et al., 1997):

“Strong commitment and solid corporate governance are essential for non-financial disclosure, and for ensuring relevance of non-financial information to the corporate business model and related sustainability strategy” (Sustainability Committee Member)

In 2017 and 2018, Enel published both the sustainability report and the non-financial report as a separated document, providing an overlapping of non-financial information (Carungu et al., 2020). From 2019 on, Enel has integrated the reporting scope and decided to disclose non-financial information in a single document to increase the report’s credibility (Velte & Gerwanski, 2020).

Overall, the implementation of the Non-financial disclosure regulation has enhanced the impact of the corporate governance mechanisms—already in place within the organisation—on non-financial disclosure and reporting practices towards collectivistic, pro-organisational, and trustworthy approach (Davis et al., 1997). Furthermore, the shift from a voluntary to a mandatory non-financial reporting has reinforced the guiding and coordinating role played by the Sustainability Planning and Performance Management unit, aimed at ensuring transparency, standardisation, comprehensiveness, and credibility of the corporate governance mechanisms for Sustainability (Velte & Gerwanski, 2020):

“I believe our governance system allows us to adequately support non-financial reporting. The roles assigned to both the Control and Risks and Governance and Sustainability Committees make it possible to analyse the issue of Sustainability from an end-to-end perspective, ensuring that the non-financial reporting is complete and representative of the business” (Head of Sustainability Planning and Performance Management)

Nevertheless, additional organisational changes are necessary to reinforce the role of the Sustainability Planning and Performance Management unit to fully comply with the sustainability requirements imposed by the Non-financial disclosure regulation and to address higher stakeholders demands on non-financial performance properly.

6 Concluding Remarks

This research aimed to explore how corporate governance mechanisms deal with mandatory non-Financial reporting adoption. In particular, we investigated how the SDGs adoption is internalised and the requirement of the Directive No. 2014/95/EU is managed by members charged with governance and internal control systems within a multinational global player, such as Enel. These objectives were pursued by implementing a case study approach, through in-depth interviews with key decision-makers, who played a key role in the preparation of the Sustainability Reports and the EU Directive adoption. Additionally, qualitative content analysis on the sustainability documents published by the company was performed.

Results are grounded on multi-theoretical approaches, involving both the agency relation (Jensen & Meckling, 1976) and the stewardship theory (Davis et al., 1997), as an alternative approach to the manager–owner relationship.

Our main findings show that from 2015, Enel has revolutionised its growth model, placing Sustainability at the core of the value chain process and renewable energy’s projects as the driver of growth. Enel has restructured its corporate reporting framework to communicate both financial and non-financial elements to all stakeholders, reducing agency costs. The 2020–2022 company’s strategy focuses on achieving the UN Sustainable Development Goals (SDGs), demonstrating a strong commitment throughout the entire value chain and placing SDG 13 (Action to combat climate change) at the centre.

The organisation’s management philosophy is “involvement” oriented and long-term framed (Davis et al., 1997). In particular, the Board of Directors implements the company’s best practices, such as the strategic, industrial, and financial plans, including the annual budget and the Group Business Plan, which incorporate the principal guidelines to promote a sustainable business model and lay the basis for long-term value creation. The Enel’s Board of Directors is also responsible for approving the Sustainability Report, which constitutes the Consolidated Non-Financial Statement according to Legislative Decree no. 254/16, after consulting the Control and Risks Committee and corporate governance Sustainability Committee.

In addition, our findings illustrate that the introduction of the Non-financial regulation has strengthened the culture of non-financial reporting within the organisation, encouraging greater awareness and an overall high-value commitment. In fact, the shift from voluntary to mandatory non-financial reporting has reinforced the guiding and coordinating role played by the Enel's Sustainability Planning and Performance Management unit, aimed at ensuring transparency, standardisation, comprehensiveness, and credibility of the corporate governance mechanisms for Sustainability (Velte & Gerwanski, 2020).

In conclusion, we can point out that since 2019, Enel has attempted to integrate the disclosure of non-financial information in a single document (Sustainability Report 2019—Consolidated Non-financial statement), by increasing the credibility of the report published (Velte & Gerwanski, 2020). However, further developments in terms of SDGs integration, sustainability compliance, and corporate reporting communication approach are needed.

The research leaves opportunities for further studies. For instance, this work may be extended to a multi-sector comparison, including, for example, a company operating in a non-sensitive industry. In addition, we can develop chronological research investigating Enel's case study in the future years, by implementing also other research methods, such as focus groups.

The main limitation of this study is mainly related to the number of interviews conducted and the disadvantages connected to the adoption of a single case study (Yin, 2003).

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Part II

Social and Environmental Sustainability

A Systematic Literature Review of Theories Underpinning Sustainability Reporting in Non-financial Disclosure



Francesca Bartolacci, Marco Bellucci, Katia Corsi, and Michela Soverchia

1 Introduction

Corporate non-financial disclosure, in its broadest sense, aims to describe and communicate how economic, social, and environmental practices influence corporate strategies (Chelli et al., 2019) and, thereby, corporate performance (Hassan & Romilly, 2018; Yang et al., 2019). It is an extensively investigated topic that has been of interest to both researchers and practitioners.

In the early 80s, researchers focused on the nature of accounting as a social phenomenon (Burchell et al., 1980; Tinker et al., 1982). Further research has analyzed social factors influencing the development of accounting practices and their social effects (Burchell et al., 1985). Moreover, the studies on corporate social reporting (CSR) that have been undertaken (Cowen et al., 1987) were significant in this issue.

For some authors, non-financial accounting can represent the universe of all possible accountings (Gray, 2002; Deegan & Soltys, 2007), which go beyond financial disclosure, including all those that can be variously labeled. Non-financial accounting is a vast and composite concept that includes several accounting and reporting practices, such as integrated reporting (Cheng et al.,

F. Bartolacci · M. Soverchia

Department of Economics and Law, University of Macerata, Macerata, Italy
e-mail: francesca.bartolacci@unimc.it; michela.soverchia@unimc.it

M. Bellucci

Department of Economics and Management, University of Florence, Florence, Italy
e-mail: marco.bellucci@unifi.it

K. Corsi (✉)

Department of Business and Economics, University of Sassari, Sassari, Italy
e-mail: kcorsi@uniss.it

2014), social accounting (Parker, 2011), gender disclosure (Furlotti et al., 2019), sustainability reporting (Buhr, 2007), environmental reporting (Clarkson et al., 2011), social reporting (Guthrie & Parker, 1989) and others. The literature contains empirical studies, normative statements, philosophical discussion, non-accounting studies, teaching programs and textbooks, regulatory frameworks, and other reviews (Mathews, 1997).

Parker (2011) draws attention to a more recent balancing between the environmental and social subject areas after highlighting a predominance of environmental over social accounting (Parker, 2005). Lots of studies on these topics cover both theoretical aspects and empirical analysis in different sectors. However, Parker (2011) states that recent shifts in methodological approaches are increasingly emphasizing the employment of content analysis and case studies.

Moreover, at the EU level, non-financial disclosure is a very current topic. This is proved by Directive 2014/95/EU on the disclosure of non-financial and diversity information (NFI), which, from 2017 onward, imposes a series of social, environmental, and governance statements on large companies (exceeding 500 employees). More recently, EFRAG has been appointed by the European Commission to explore possible EU non-financial reporting standards that could be inserted into the future revised Non-Financial Reporting Directive (NFRD). They are analyzing the main existing standards and working on the connection between financial and non-financial information (www.efrag.org report up to 31/10/2020).

Social and environmental disclosures have a long history (Guthrie & Parker, 1989; Buhr, 2007). Nevertheless, this issue has drawn considerable attention over the past decades, proving very controversial in defining the theoretical concepts, scopes and possible implementation tools. The pluralism in theoretical approaches and methodologies applied to common research problems yielded incremental understandings that are improved by both commonalities and differences.

As highlighted by Parker (2005), all approaches are valuable. Nevertheless, no one theory can fully describe the complexity of social reality, and certain theoretical concepts, while subject to contestation, may dominate others (Spence et al., 2010). Indeed, the dominance of specific explanatory theories over others in the field of non-financial disclosure is quite evident. Since a unitary theory for this communication has not appeared, it can be useful to distinguish and analyze the different theoretical approaches. There is an evident research gap on the different theories to the study of social, environmental, and sustainability reporting, which necessitates systematic literature to explore which theories have been most debated and whether some new research perspectives have been considered.

This study focuses on reporting concerning social and environmental sustainability (SES). In particular, it wants to contribute to deepening the theoretical bases of this kind of non-financial disclosure produced in all kinds of organizations (companies, governments, nonprofit organizations), identifying the main theories—both mainstream and emerging ones—used in literature to explain and support the analysis of SES reporting. We want to understand if and how these theories are combined with each other and for what purposes they are mainly used.

Although other literature reviews have been published on this topic (Spence et al., 2010; Parker, 2011; de Villiers et al., 2014; Owen, 2008; Deegan, 2019), our work differs from them because it encompasses a wider period of analysis and a broader range of literature sources. This is an important point because in the last decades a lot of studies have been published, for example, concerning environmental and sustainability reporting, and we want to understand if they used new or different approaches from a theoretical point of view.

This study is structured as follows. The next Section presents the methodological protocol for our systematic literature review. Section 3 discusses the different applications of the theories that emerged from our literature review. Section 3.1 focuses on the main theories as those most frequently used to investigate non-financial disclosure; Sect. 3.2 examines the more significant interconnections with established theories; and finally, Sect. 3.3 considers emerging or less frequent theories. Section 4 concludes and provides ideas for further research.

2 Methodology

Our literature analysis follows the more traditional protocols proposed by several scholars (Wee & Banister, 2016; Massaro et al., 2016), which helps authors “to protect objectivity by providing explicit descriptions of steps to be taken” (Tranfield et al., 2003, p. 215).

The first step was data collection using the Scopus database. This choice is because this database has extensive coverage of peer-reviewed journals, offering a valuable collection of data. It is recognized as the most extensive database with multidisciplinary scientific literature and analysis tools and was introduced by Elsevier in November 2004 (Aghaei Chadegani et al., 2013).

The process research (as shown in Fig. 1) was preceded by a preliminary analysis of the main papers about non-financial disclosure to make the first investigation on possible keywords helpful in defining the research string and on the main theoretical frameworks used for studying this issue.

According to work aim, the data was obtained by searching publications whose title, abstract, or keywords contain words beginning with “sustainab” or¹ “social” or “environmental” combined with words beginning with “report” or “disclosure” and also with words beginning “theor.” Specifically, the query was run in the Scopus database as follows: (TITLE-ABS-KEY (sustainab*) OR TITLE-ABS-KEY (social) OR TITLE-ABS-KEY (environmental) AND TITLE-ABS-KEY (report*) OR TITLE-ABS-KEY (disclosure) AND TITLE-ABS-KEY (theor*)) AND (LIMIT-TO (DOCTYPE , “ar”)) AND (LIMIT-TO (SUBJAREA , “BUSI”)) AND (LIMIT-TO (LANGUAGE , “English”)).

¹ Boolean operators.

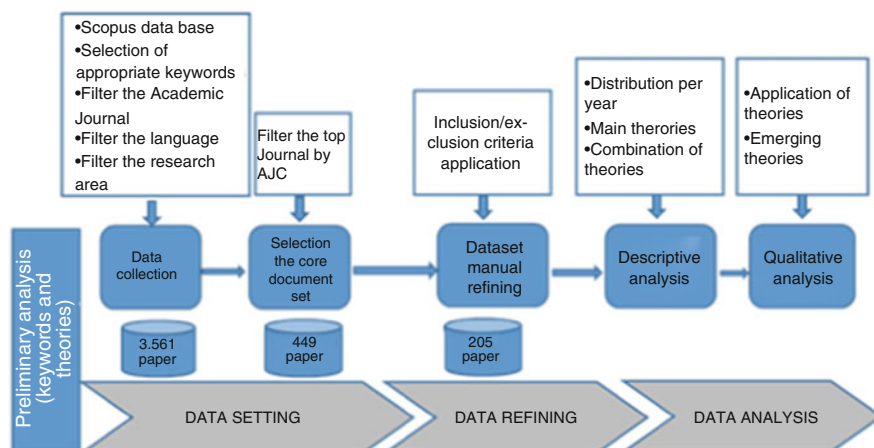


Fig. 1 Research protocol

Data was collected in June 2020 considering all the works published up to 2019 (leaving out a few articles published in 2020) to grasp the theoretical frameworks used to support the works regarding non-financial disclosure since more ancient years. The numerous documents that resulted from this first step are also limited in relation to document type and interest area. We selected only articles published in an academic journal for the quality control of the research because of the peer-review process. We only included papers in the “Business, Management and Accounting” area. From this step, we had 3561 articles to review.

Considering the high number of selected papers and the fact that the aim of our analysis requires the reading of the abstract and often the full paper, we proceeded to make a further restriction to consider only articles in the top journals. We adopted the Academic Journal Guide (AJG 2018, published by CABS—Chartered Association of Business Schools, charteredabs.org) in the area of Accounting but also General Management, Ethics, Gender, and Social Responsibility with three or four stars. This choice was motivated by the will to select journals with general recognition as the leading journals in our field based on both citations and impact. At this point, our database included 449 papers.

Subsequently, the authors performed a manual refinement of papers by reading the title, abstract, and keywords and agreeing in advance on the inclusion/exclusion criteria (Tranfield et al., 2003) of papers, such as the specific focus on non-financial disclosure and the presence of a clear theoretical framework. In particular, the papers focused on sustainability but not on disclosure or reporting, and previous literature reviews on sustainability disclosure were eliminated. The authors carried out this analysis independently, and subsequently, a cross-check was carried out. For those papers that presented elements of ambiguity or discrepancy, the authors extended the reading to the full paper and decided to include or exclude it. At the end of this process, the sample was composed of 205 articles.

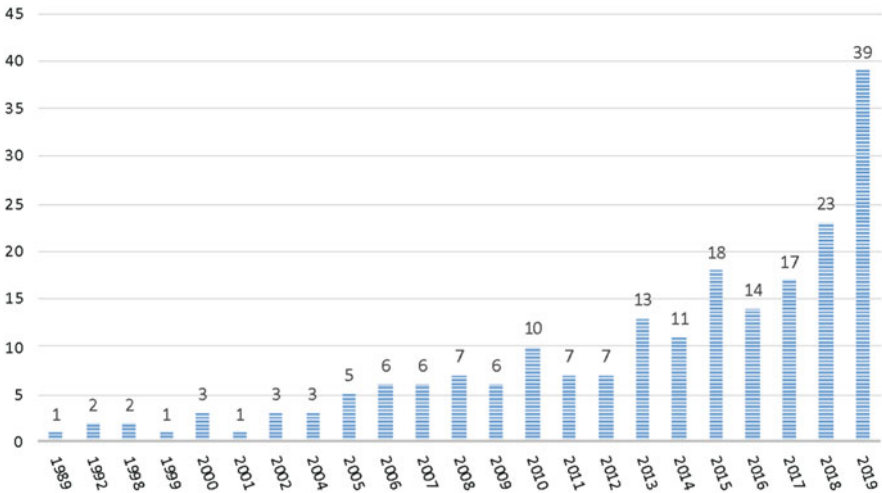


Fig. 2 Articles by year of publication

In the next step, all the authors worked separately to identify the theoretical frameworks used in each considered paper. From the preliminary analysis, some traditional theoretical frameworks used to support research on non-financial disclosure were identified by the authors. From an operational point of view, a grid was built in which each article indicated in line with its own ID was associated with one or more theoretical frameworks. Among these, the authors identified the theories traditionally used to explain the company disclosure issue, such as Institutional Theory, Legitimacy Theory, Stakeholder Theory, Resource-Based Theory, Agency Theory, Signaling Theory, and Impression Management Theory. Other theories that also emerged from the analysis include media agenda setting, voluntary disclosure theory, and resource dependence theory.

Publication dates of the 205 articles included a range from 1989 to 2019. See Fig. 1 for a timeline showing the increasing interest in the topic of SES reporting. The most represented journals are *Accounting, Auditing and Accountability Journal* (60 articles) and *Journal of Business Ethics* (57), followed by *British Accounting Review* (14), *Accounting Forum* (13), *Business & Society* (11), *Critical Perspective on Accounting* (11) and *Accounting, Organizations and Society* (10) (Fig. 2).

3 Results and Discussion

3.1 Main Theories

3.1.1 Legitimacy Theory

Legitimacy theory has been widely used by scholars to explain certain behaviors adopted by organizations regarding social and environmental disclosure. According to this theory, organizational activities should be congruent with societal rules, beliefs, and expectations (Suchman, 1995; de Villiers & van Staden, 2006). Legitimacy theory considers social and environmental disclosure as a mechanism that can be used implicitly by companies to condition how they are perceived by their relevant publics, a means to gain or maintain legitimacy that influences societal perception (Cho & Patten, 2007). Most prior research in social and environmental accounting has argued that in the context of perceived legitimacy threats, organizations would maintain or increase their disclosures (Belal & Owen, 2015).

A vast body of literature explains social reporting practices as a legitimizing strategy, suggesting that the disclosure of information is beneficial to organizations (Monfardini et al., 2013). Based on this theory, companies facing greater exposure—firms operating in environmentally sensitive industries (Cho, 2009), with imposing size (Branco & Rodrigues, 2008; Adams et al., 1998), or with poorer environmental performance (Heflin & Wallace, 2017)—would be expected to provide more extensive off-setting or positive environmental disclosures in an attempt to address the increased threats to their legitimacy (Cho & Patten, 2007). Nevertheless, Michelon et al. (2015) analyze the substantive versus symbolic use of CSR-related reporting practices, highlighting an increasing skepticism about their use as tools employed to improve perceived accountability.

Legitimacy theory continues to be cited, examined, and tested in a vast number of empirical studies that quantitatively analyzed corporate decisions related to social and environmental disclosures (Patten, 1992; Cho & Patten, 2007; Adams et al., 1998). Other researchers (Borgstedt et al., 2019; Hahn & Lülfs, 2014; Lauwo et al., 2016) have employed qualitative methodologies to observe the management's views in-depth and strategies related to disclosure choices in their reports. Chelli et al. (2014) and Tilling and Tilt (2010) used both quantitative and qualitative approaches.

Central to legitimacy theory is the concept of the “social contract” (Patten, 1992; Cho, 2009), which allows companies to continue to use social resources and maintain their license to operate (Guthrie & Parker, 1989). A break of this contract and the failure to meet societal expectations may lead to its withdrawal. This could be damaging and may jeopardize the company's existence (Cho, 2009). Because the social contract is what justifies an organization's survival, much effort will be made to ensure its preservation (de Villiers & van Staden, 2006).

Archel et al. (2009) highlight the relevant role of the state in the alignment of the micro-level objectives of the firm with the macro-level goals of the state that represent the public interest. Following the neo-pluralist view of society, Muttakin

et al. (2018) examine the association between corporate political connection and the level of voluntary corporate social disclosure and verify that politically connected firms perceive a reduced need for corporate social responsibility (CSR) disclosures as a legitimization strategy. Magness (2006) states that legitimacy theory can be seen as a means of explaining what, why, when, and how certain items are addressed in corporate communication with outside audiences. When stakeholders' power is high, companies with an active strategic posture make greater social responsibility disclosure. While Monfardini et al. (2013) highlight that legitimacy depends on the legitimacy of the disclosure tool itself and that not all stakeholders recognize legitimacy in the same way. So the organizations must understand which of the stakeholders' interests have to be addressed first.

Corporate environmental reporting of all kinds is increasing and will continue to grow over time (Wilmschurst & Frost, 2000). Although Mobus (2005) highlights the importance of mandatory environmental accounting disclosure for investors, regulators and public policymakers who need reliable information and social and environmental statements have a lengthy tradition of voluntary disclosure (Beck et al., 2017). Legitimacy strategies can be identified through a comprehensive analysis of the objectives' voluntary reporting patterns (Borgstedt et al., 2019). Corporations will do whatever they consider necessary to preserve their image of a legitimate business, with legitimate aims and methods of achieving it. Therefore, companies can change the extent and type of disclosure when they perceive legitimacy threats, even reducing the overall disclosure to appear legitimate (de Villiers & van Staden, 2006). Additionally, Tilling and Tilt (2010) argue that legitimacy theory could be used to explain a decreasing trend in voluntary social and environmental reporting.

Companies can follow a proactive or reactive approach toward achieving legitimacy. Many studies have found evidence of the latter approach, meaning that companies publish environmental information in reaction to some external event (Chelli et al., 2014) or crisis facing either the company (Cho, 2009) or the industry (Patten, 1992). The proactive approach consists of designing the disclosure to prevent legitimacy concerns from arising (van Staden & Hooks, 2007). The literature shows a reactive approach, especially when there is a negative relationship between environmental disclosure and environmental performance. In this case, the environmental disclosure is higher for worse performers (Patten, 1992; Cho & Patten, 2007). A positive association between environmental responsiveness and environmental disclosure may indicate that companies are following a proactive legitimizing strategy (van Staden & Hooks, 2007). However, examinations of the performance–disclosure relationship report different results. To verify the reaction approach, Guthrie and Parker (1989), with their case study, failed to confirm legitimacy theory as the primary explanation of social reporting during a period of significant social, economic or political events. Nevertheless, that work remains a highly cited and influential paper in the social and environmental accounting literature.

Legitimacy theory is frequently used in literature to explain the motivations for CSR disclosures. It is also used for emerging economies, where governments and policymakers have to gain legitimacy toward external stakeholders, such as international aid agencies and foreign governments (Khan et al., 2013) or following social

changes in the developing economy (Mahadeo et al., 2011a). Khan et al. (2013) highlight the vital role of top management, and thus the corporate governance of an organization, in reducing the legitimacy gap through extended CSR disclosure.

3.1.2 *Stakeholder Theory*

According to stakeholder theory, organizations must not only be accountable to investors but also balance a multiplicity of stakeholder expectations and interests that can affect or be affected by the organization's actions (Freeman, 1984). Stakeholders are accorded increasing importance in public discourse. Stakeholder theory has also emerged as a meaningful framework for the analysis of corporate social performance and sustainability reporting (Harvey & Schaefer, 2001), where the latter is intended as part of the dialog between organizations and stakeholders. Roberts (1992) provides one of the seminal studies on the application of stakeholder theory to non-financial disclosure. This study empirically tests and supports the ability of stakeholder theory to explain CSR disclosure, finding that measures of stakeholder power, strategic posture, and economic performance are significantly related to levels of corporate social disclosure. Building on stakeholder salience theory, Thijssens et al. (2015) also empirically investigate whether differences in environmental disclosure among companies are systematically related to differences in the level of power, urgency, and legitimacy of the environmental non-governmental organizations with which these companies are confronted.

Greenwood (2007) questions the simple "more is better" assumption that the more an organization engages with its stakeholders, the more it is responsible. Her study builds a more complex model of the links between stakeholder engagement and corporate (ir)responsibility and discusses important issues of stakeholder identification and conflicting stakeholder claims. Joseph (2012) suggests an emphasis on principles based on normative stakeholder theory and notes that sustainability reporting continues to become more widespread despite ambiguities underlying different interpretations and wider scopes of managing public perceptions and organizational façades (Blanc et al., 2019). Liao et al. (2015) examine the impact of corporate board's characteristics on the voluntary disclosure of greenhouse gas emissions. Their results are consistent with stakeholder theory, suggesting that a diversified and independent board and the existence of a board-level environmental committee may balance a firm's financial and non-financial goals with limited resources and moderate the possible conflicting expectations of stakeholders who have disparate interests. The behavior of management with respect to their stakeholders is also critically tackled by Moneva and Llena (2010), who investigate the environmental reporting behavior of Spanish companies through the lens of stakeholder theory, highlighting different patterns in the utilization of quantitative and qualitative data.

Recent calls in the non-financial disclosure literature have started emphasizing the importance of giving voice to non-managerial stakeholder groups in the social, environmental, and sustainability reporting process, especially in developing

countries (Elijido-Ten, 2011). Elijido-Ten et al. (2010) provide insights into stakeholder expectations regarding the types of environmental disclosures a firm should make, and if dissatisfied with the disclosure policy, whether it should use different intervention strategies in an attempt to induce the desired disclosure outcome. They apply stakeholder theory to support the understanding of reporting practices in the context of developing countries. Belal and Roberts (2010) also employ stakeholder theory to examine the perceptions of a diverse set of non-managerial stakeholders in the context of Bangladesh through a series of semi-structured interviews.

Another interesting research strand on the associations between stakeholder theory and sustainability reporting refers to the determinants of non-financial disclosure (Chiu & Wang, 2015). Orij (2010) finds that corporate social disclosure levels relate to national cultures in an international sample of large companies. The results are consistent with the associations suggested by stakeholder theory and, in particular, a country-specific stakeholder orientation toward communitarianism.

Furthermore, stakeholder involvement is often essential to the management of biodiversity. Moreover, corporate commitment to preserving biodiversity is increasingly scrutinized by stakeholders and now represents an important research avenue in social and environmental accounting. In this perspective, Boiral and Heras-Saizarbitoria (2017) analyze how mining and forestry companies can manage biodiversity issues through stakeholder involvement based on a content analysis of 430 sustainability reports using the Global Reporting Initiative (GRI) framework. Gaia and Jones (2017) also explore the use of narratives in biodiversity reports disclosed by UK local councils as a mechanism to raise awareness of biodiversity's importance. Kaur and Lodhia (2018) also focus on local councils, and in particular, they employ managerial stakeholder theory providing a theoretical basis for exploring stakeholder engagement in the sustainability accounting and reporting processes of Australian local councils.

3.1.3 Institutional Theory

The institutional theory (Selznick, 1957, 1996) focuses on the relationship between institutional context and organization. A new version of this theory labeled “new-institutionalism” introduces the “isomorphism” concept (Meyer & Rowan, 1977; Di Maggio & Powel, 1983; Scott, 2001), which explains how organizations operating in the same institutional context are forced (with different pressures: coercive, normative, mimetic isomorphism) to make very similar decisions and demonstrate their legitimacy within their contextual environment. The need to conform to contextual expectations for legitimacy aims is confirmed by the oldest and more cited paper, which uses the institutional theory (Bansal & Clelland, 2004). The authors, analyzing the reports and stock prices of 100 societies, argue that firms earn environmental legitimacy when their environmental performance meets stakeholders' requirements, and these environmentally legitimate firms incur less systematic stock market risk than illegitimate ones.

Following this research stream, the non-financial disclosure and the different approach to realize it is explained as an answer to contextual pressures. Many scholars attempt to consider several factors both outside (country-level determinants, such as economic, social development, and government) and within organizations (firm-level determinants) to explain the behavioral heterogeneity regarding whether or not to disclose or the level of disclosure (Leong & Hazelton, 2019; Kühn et al., 2018; Situ et al., 2018).

Among these studies, Cormier et al. (2005) show that risk, ownership, fixed assets age, firm size, and routine determine the level of environmental disclosure by German firms, and their disclosure converges over time, especially by the routines (translated into protocols, processes, and procedures), according to normative isomorphism. Other papers (Bebbington et al., 2009; Aerts et al., 2006) highlight the mimetic isomorphism that influences activity and the content of social and environmental disclosure. For example, the industry emanates a mimetic process that is enhanced in highly concentrated industries and is weakened when a firm is subject to public media exposure. The behavior of disclosing non-financial information is also linked to the nature of the firm: the CSR report differs between family and non-family firms because the first are, on average, more willing to disclose CSR reports but less compliant with CSR standards (Campopiano & De Massis, 2015). For state-owned firms, those that operate in environmentally sensitive industries are more likely to disclose environmental information (Zeng et al., 2012).

The institutional lens sees the effectiveness of non-financial disclosure associated with the nature of pressures that influence a management practice: the external pressures push to implement the practice in a more superficial way and to design disclosure to “green” the company’s overall reputation. With particular regard to the greenwashing phenomenon, Lyon and Montgomery (2013) show that social media could help to tackle it.

Institutionalism also helps explain the process of implementing and developing social and environmental reports in a firm (Leong & Hazelton, 2019; Russo-Spena et al., 2018; Shabana et al., 2017). Russo-Spena et al. (2018), studying the environmental and social reports of automotive companies, show that the companies are becoming more experienced in standalone reporting. They move from increased social and environmental accountability toward a normative isomorphism, and hence specific links between sustainability issues and actors emerge. Shabana et al. (2017) deal with the institutionalization of CSR reporting, reflecting the types of isomorphism in the different phases of development of this report over time. In the first phase (defensive reporting), the decision to report is driven by coercive isomorphism to close the gap between expectations and performance. In the second stage (proactive reporting), the knowledge of CSR reporting spreads and normative isomorphism brings other organizations to consider the report as a potential new opportunity to achieve the firm’s goals. Finally, in the third stage (imitative reporting), the practice of CSR has become widely accepted because it represents a competitive factor and the benefits of CSR increasingly outweigh the costs due to mimetic isomorphism.

In recent years in the field of institutional theory, some authors have created new concepts, such as “institutional logics” (Thornton et al., 2012) and “institutional work” (Lawrence & Suddaby, 2006), which are adopted in more recent works on social and environmental disclosure.

Thornton et al. (2012) argue that individual and organizational behavior is influenced by the specific “institutional logic” that “both regularizes behaviour and provides opportunities for agency and change” (pp. 101–102). Different orders (such as family, state, market, corporation, profession, and community) have different logics that influence knowledge, interests, and actions. Among the examined papers, the institutional logic concept is used in two recent contributions. Contrafatto et al. (2019) focus on how and why the social and environmental report (SER) has evolved over time. They attribute to institutional rationalities and logics the ability to provide resources and create opportunities to change and develop the report, which has three steps of life: “birth,” “development” and “de-structuring.” Ferdous et al. (2019), aligning the existing institutional logics of an organization with community expectations, consider a fourth type of isomorphic pressure (reflexive isomorphism). This type seeks to align the organizational logic with external institutional influences and to legitimize the organization to manage environmental information by meeting community expectations (also regarding sustainability).

The other new concept derived from institutionalism is “institutional work,” defined as “the broad category of purposive action aimed at creating, maintaining and disrupting institutions” (Lawrence & Suddaby, 2006, p. 216). Additionally, the institutional work perspective was recently used in a paper dated 2019. Farooq and de Villiers (2019) focus on the institutionalization of the sustainable report, following four phases of institutional work, which progressively lead to a higher level of maturity of sustainability report: (1) education and engagement of managers to sustainability; (2) decentralization of sustainability reporting process; (3) creation of formal and sophisticated materiality assessment process and (4) using sustainability key performance indicators in the control system.

3.2 *Interconnections Between Theories*

3.2.1 *Legitimacy Theory Combined with Other Theories*

Legitimacy theory is one of the most used theories in the group of articles we analyzed. It is used alone but also combined with other theories.

Among these papers, the most dated is Brown and Deegan (1998), where legitimacy theory is combined with media agenda-setting theory, according to which increased media attention is supposed to lead to increased community concern about a particular issue. In this article, the authors conduct an empirical longitudinal analysis of Australian companies to investigate the relationship between the print media coverage given to various industries’ environmental effects and the levels of annual report environmental disclosures. Findings show that, according to media

agenda-setting theory, the media can be particularly effective in driving the community's concern about the environmental performance of companies. Where such concern is raised, firms respond by increasing the extent of environmental disclosure within the annual report, as explained by legitimacy theory.

Several articles use legitimacy theory with stakeholder theory. These theories are two of the main socio-political ones that have been extensively used in literature to investigate corporate financial and non-financial reporting. While legitimacy theory considers interactions between the firm and society as a whole, stakeholder theory considers how the firm interacts with specific categories of stakeholders. There are several articles by this group in which the proximity/complementarity of the two theories is recalled. Vithana et al. (2019), for example, highlight that while legitimacy and stakeholder theories are considered distinct in relation to their origins, they collectively provide an understanding of the diverse role of communication and disclosure in the interactions between the firm and its environment, both in the sense of particular interest groups (i.e., employees) and, more broadly, in society as a whole in terms of the norms, expectations, and values that it reflects. In brief, they provide a macro (legitimacy) and a micro (stakeholder) framework to explain a firm's specific actions. In some cases, it is claimed that for some aspects, the two theories are highly overlapping (Liesen et al., 2015; Mahadeo et al., 2011b).

The most cited article in this subgroup is Bebbington et al. (2008). It is an exploratory study that aims to deepen the link between the theoretical explanation of social accounting and reporting and corporate reputation. In particular, the authors want to understand if CSR reporting can be considered and interpreted as both an outcome of and a part of reputation risk management processes. To do this, they try to integrate legitimacy theory, stakeholder theory, and reputation concepts (such as quality of management, social and environmental responsibility, and quality of goods/services). The resulting framework is used to analyze a corporate CSR report, exploring the possible usefulness of the concept of reputation risk management in the understanding of CSR reporting practice. Findings show evidence that CSR reporting could be seen as including a reputation risk management aspect.

As for methodology, only two papers present a case study (Buccina et al., 2013; Kuruppu et al., 2019), in which legitimacy and stakeholder theories are used to guide the analysis. In the first paper, the theories are employed to demonstrate how the natural environment of a region in a less developed country (Ecuador) can be severely damaged by a large multinational company without the company facing a threat to its legitimacy. The authors of the second paper examine how legitimacy is gained, maintained, or repaired through direct action with main stakeholders and through external reporting.

In most of the articles, therefore, the two theories are employed as theoretical framework and background to develop and support hypotheses that are then tested with quantitative empirical analysis, in some cases with vast amounts of observations due to big samples of companies. This is the case, for example, of Chan et al. (2014), in which the association between CSR disclosure and corporate governance quality is investigated. Consistent with both legitimacy and stakeholder theory, the authors realize an analysis of a sample of 222 listed companies for which the annual

reports have been read in order to find the voluntary provision of CSR information. Findings suggest that firms providing more CSR information have better corporate governance ratings, are more extensive, belong to higher-profile industries, and are more highly leveraged. Furthermore, it emerges that corporate governance quality is an important internal contextual factor that is positively associated with CSR activities and disclosure. Another article containing an empirical quantitative analysis conducted to verify hypothesis based on legitimacy and stakeholder theory is Fonseka et al. (2019), the only work of this sub-group investigating whether non-financial disclosure—namely environment information disclosure—have any effect on a specific dimension of financial performance in a broader sense, that is the cost of equity capital. They find a negative relationship: firms that increase their level of environmental disclosure reduce the cost of equity capital, helping to increase firm value. Thus, environmental disclosure reduces the agency problem and information asymmetry between firms and investors.

Sometimes the two theories are recalled and used to create and propose a theoretical model. This is the case of Cormier et al. (2004), whose purpose is to assess how management's perceptions regarding certain aspects of environmental reporting relate to the firm's actual reporting strategy. Toward that end, the authors propose a model where a firm's environmental disclosure is conditional upon executive assessments of corporate concerns.

Among the papers that realize an empirical analysis there is also Busco et al. (2019), the only article of this sub-group that uses legitimacy theory and stakeholder theory to address the topic of integrated reporting and integrated thinking, an issue that has recently received lots of attention by scholars: in particular, the authors provide empirical evidence on the nature and determinants of companies' levels of integration, examining the drivers of different levels (holistic, integrated, conservative, and minimalist).

In other articles legitimacy theory is combined with impression management theory. It is one of the most well-known social psychology theories that concerns studying identity performances, namely how individuals present themselves to others in order to be perceived favorably by the audience. It has been applied also to organizations and companies and is often linked with the notion of legitimacy,² since the latter can be achieved if the public impression of the firm's activities is a positive one regardless of actual company performance. In fact, companies may use non-financial reporting as a symbolic action to manage public perceptions and gain or maintain legitimacy (Barkemeyer et al., 2014).

The most dated—and the most cited—paper of this subgroup is Hooghiemstra (2000), a descriptive study asserting that corporate social reporting can be viewed as a form of impression management that can contribute to the firm's reputation. In particular, companies facing public pressure and increased media attention due to major social/environmental incidents can use social reporting—according to

²In our sample, in fact, aside from 1 article, impression management is always used together with legitimacy theory.

impression management—to handle legitimacy threats that in turn could affect companies' reputation.

Other papers use this theoretical framework—based on legitimacy + impression management—to analyze the switch from voluntary to mandatory environmental disclosure. Meng et al. (2013), for example, provide a theoretical explanation for environmental information disclosure in different stages of regulation: while impression theory can be used to explain the disclosure motivation during the voluntary disclosure period, legitimacy theory (focused on pressure) can be employed during the period of mandatory disclosure.

In another group of articles, legitimacy theory is used together with voluntary disclosure theory.³ The latter assumes that management's voluntary disclosures provide relevant information aimed at improving investor decision-making. These two approaches, apparently conflicting,⁴ are sometimes used within a theoretical framework. Both perspectives might complement each other, as the voluntary disclosure approach explains the publication decision of strongly performing firms, and the legitimacy one explains the publication decision of weakly performing firms. Focusing for example on environmental issues, on the one hand, strong environmental performers may consider it advantageous to publish their favorable information; on the other hand, weak environmental performers may legitimize their actions by providing additional disclosures (Hummel & Schlick, 2016; Ott et al., 2017).

3.2.2 Multi-theory Articles

As emerged in this systematic literature review, many theories can inform the study of sustainability reporting. A recent research trend sees the combined utilization of several different theories in the same research design. In particular, our systematic literature review found eight articles built on a combination of three or more theories. These articles often include legitimacy theory in combination with stakeholder theory and a third, less popular theory, such as agency, signaling, media agenda setting, or resource dependency theory. The most represented journals for this group of articles are the *Journal of Business Ethics* (3) and *Accounting, Auditing and Accountability Journal* (2).

³In our sample, 6 articles use voluntary disclosure theory, and 5 of them do it in association with legitimacy theory.

⁴Voluntary disclosure theory, in fact, predicts that better social/environmental performers make more extensive non-financial disclosures to distinguish themselves from poorer social/environmental performers. This seems to be in contrast with legitimacy theory, assuming that management's voluntary disclosures represent an attempt to manipulate and manage the impression conveyed to users of accounting information: thus, concerning environmental disclosure, legitimacy theory implies poorer environmental performers provide more environmental disclosures than better performers to create the impression of environmental concern.

Our literature review finds that multi-theory articles are concentrated in the period between 2013 and 2019, while the most dated article traces back to Reverte (2009) and also represents the most cited paper. Reverte (2009) analyzes whether several firm and industry characteristics, as well as media exposure, are potential determinants of CSR disclosure practices by Spanish listed firms. Building on other empirical studies that have shown that non-financial disclosure can be justified by several theoretical constructs, such as legitimacy, stakeholder, and agency theories, Reverte (2009) discusses how legitimacy theory can effectively explain the reporting practices of Spanish listed firms.

Kent and Zunker (2013) study the quantity and quality of voluntary employee-related information disclosed by Australian listed companies in their annual report. They combine signaling theory and legitimacy theory in an attempt to determine whether companies adopt employee-related disclosures to legitimize their relationship with society. Moreover, media agenda-setting theory is also used as a measure of an attempt to gain legitimacy following adverse publicity from the media. Coetzee and Van Staden (2011) also build on media agenda setting and combine this theory with legitimacy and stakeholder theory. Their study aims to examine safety disclosures in the sustainability reports of South African mining organizations following two major mining accidents. They find that reporting levels are influenced by stakeholder pressure, which motivates corporate social disclosures according to legitimacy and stakeholder theories, while the media attention devoted to mining accidents appears to be unrelated to safety disclosure levels. Hahn et al. (2019) aim to contribute to legitimacy, signaling theory, and its counterpart screening theory by using an incentivized experiment to show that nonprofessional investors divest from companies with a track record of negative sustainability-related incidents. They also show that symbolic legitimation, which only evasively explains a negative incident, is not a strong enough signal to counter this divestment behavior.

Ntim and Soobaroyen (2013) investigate the extent to which South African listed firms voluntarily disclose information on Black Economic Empowerment—an integration program launched by the South African government to reconcile South Africans and redress the inequalities of Apartheid—in their sustainability reports. They discuss their results as largely consistent with the predictions of agency, legitimacy, resource dependence and stakeholder theories: institutional ownership is negatively associated with the extent of disclosures, whereas government ownership, board diversity, board size and non-executive directors are positively related.

Comyns (2016) shows that regulation under the EU emissions trading scheme and reporting according to the global reporting initiative (GRI) guidelines leads to better quality and more extensive reporting, while demonstrating that institutional theory along with stakeholder theory and legitimacy theory can give further insights into the greenhouse gas reporting practices of multinational companies.

A theoretical framework discussing agency, stakeholder, signaling, institutional, legitimacy, and stewardship theories and their implications for sustainability is provided by Rezaee (2016). This paper provides a synthesis of research on sustainability and presents a theoretical framework consisting of multiple theories and

standards relevant to economic, governance, social, ethical, and environmental dimensions of sustainability performance and risks and their integration into business models, value creation and reporting.

Gaia and Jones (2019) analyze the current nature and content of biodiversity reporting practices adopted by UK local councils by building on a multi-theoretical framework that relies on economic and social theories, such as agency, stakeholder, legitimacy and institutional theories. Their study aims to investigate the factors that explain the extent of biodiversity disclosure, such as the level of the local council's population, the presence of councilors from environmentally oriented parties and environmental non-governmental organizations operating in the local council area, poor biodiversity management practices, and local councils' visibility.

3.3 *Minor Theories*

3.3.1 *Agency Theory*

Agency theory emerged in the 1970s with Jensen and Meckling (1976) from the discipline of economics. Business administration studies adopt this theory focusing on the delegation concept to interpret the relationship between the board and shareholders of a company but also other relationships, such as between managers and stakeholders or managers and employees. These relationships are characterized by the presence of information asymmetry, opportunistic behaviors, and conflicts of interests between the principal (shareholder) and the agent (manager), which impose the control of agents. In this theoretical context, disclosure (financial or non-financial) is a tool needed to reduce information asymmetry. To date, few studies consider only the agency theory to explain sustainability disclosure and several issues linked to it; many more studies combine this theoretical approach with others, such as stakeholder, institutional, and legitimacy theories.

Among these studies, Terlaak et al. (2018), studying Korean family groups, find that the effect of family control on environmental performance disclosure is neither good nor bad because this disclosure, on the one hand, weakens the owning family's control over its business group while, on the other, it increases the family's reputation. However, the impact of family control on environmental disclosure is more complex because it depends not only on the degree of family ownership but also on the presence of a family CEO. This position in a firm in which the family holds the majority of shares can eliminate classic agency costs. Other scholars that consider the relationship between CSR and corporate governance, using the agency theory lens, are Jizi et al. (2014). While carrying out a quantitative analysis of a sample of large US banks, they find that board independence and board size, the two board characteristics usually associated with the protection of shareholder interests, are positively related to CSR disclosure, but also the powerful CEO (CEO duality) promotes a high level of CSR disclosure.

One study adopts agency theory to appreciate the effectiveness of disclosure on some users, such as institutional investors (Solomon & Solomon, 2006). The authors, involving these actors in the interviews, found that public social, ethical and environmental (SEE) disclosure is not adequate to support the decision process of institutional investors, stimulating the development of sophisticated private SEE disclosure channels, such as engagement meetings, in which there are relevant information synergies between the companies and institutional investors.

3.3.2 Signaling Theory

Signaling theory suggests that the more informed party tries to credibly convey information about itself to the less informed party to reduce information asymmetry (Spence, 1973). The whole information process is composed of three elements: sender, signal, and receiver.

Yang et al. (2019) apply signaling theory to analyze the relationship between sustainability reporting drawn up according to the Global Reporting Initiative (GRI) guidelines and companies' financial performance. It can be difficult for external parties to fully understand a company's sustainability-related practices. To reduce this information asymmetry, the company (sender) can release its sustainability report (signals) to relevant parties, such as customers, suppliers, governmental authorities, and other stakeholders (receivers). The reporting would provide the company's attitudes, management practices, and intents on social and environmental issues, thus creating an avenue to increase the overall firm reputation. After receiving the signal, the stakeholders can assume that the company runs well or not and is committed or not to sustainability issues. Findings show a positive relationship, suggesting that GRI sustainability reporting significantly increases firm profitability, even if surprisingly the impact on financial performance is negatively correlated to the firm's internationalization level.

In other works, signaling theory is used as a framework to focus on specific issues. Clarkson et al. (2019), for example, analyze the decision to have the CSR report assured and the consequences of this voluntary assurance. Key findings are consistent with the predictions of signaling theory, highlighting that firms with high CSR commitment are more likely to provide standalone CSR reports, obtain assurance, and adopt a higher assurance scope. Furthermore, the existence of benefits from obtaining CSR assurance in terms of enhanced market valuation emerges.

3.3.3 Laclau and Mouffe's Theory of Discourse

Laclau and Mouffe's discourse theory belongs to the discourse analysis field, looking at the specific role of language in forming consent. In particular, Laclau and Mouffe use the hegemony concept as a starting point of their approach. Hegemony is much more sophisticated and resilient than authoritarian political systems because it rests not simply on domination or coercion but on the consent

of the masses and on the ability of the hegemonic group to demonstrate moral and intellectual leadership (Laclau & Mouffe, 1985).

The most dated and cited paper of this subgroup is Spence (2007), which focuses on social and environmental reporting (SER) and employs the discourse theory of Laclau and Mouffe to frame SER as a hegemonic practice, also using the theory as a lens by which to interpret the results of an empirical study exploring managerial perceptions of SER motivations and organizational, social and environmental interactions. From the interviewees emerge a distortion, a simplification of an overdetermined reality that results in a sort of sweetened picture of the business–society relations exposed in SER. This contingent and partial nature of reporting gives SER an ideological and hegemonic character. Through the metaphor of balance, SER attempts to present the interests of business as largely congruent with social and environmental wellbeing, trying to synthesize the interests of various social groups around the business aims. According to the author, the insights of Laclau and Mouffe in the SER context are of particular interest in making sense of the hegemonic discourse that permeates SER and in inferring any hegemonic character from SER.

Conversely, Tregidga et al. (2014) use Laclau and Mouffe's theory of discourse to address sustainable development concepts. They investigate how organizations represent themselves in relation to sustainable development by conducting an empirical analysis of corporate reports from 1992 to 2010 in New Zealand. Laclau and Mouffe's discourse theory is employed to frame the analysis and interpret the findings. In particular, Laclau and Mouffe's conceptualizations of discourse, identity, and group formation, as well as their theorization of hegemony, are drawn upon. Three different identities that capture key organizational representations are identified: environmentally responsible and compliant organizations, leaders in sustainability, and strategically good organizations.

3.3.4 *Attribution Theory*

According to attribution theory, voluntarily disclosing moderately negative information may have favorable effects, as it can be ascribed to the credibility of the company since management has no advantage in publishing it when it is untrue (Jahn & Brühl, 2019). Consequently, attribution theory predicts trustworthiness “to be a monotonically increasing function of the amount of negative information communicated” (Crowley & Hoyer, 1994). However, past research on the effect of negative information on CSR disclosures is scarce and provides contradictory findings. However, the readers can perceive the voluntary disclosure of negative information as unlikely, and this adversely affects trustworthiness. For this reason, Jahn and Brühl (2019) highlight the two countervailing effects that influence corporate trustworthiness.

Cohen et al. (2017) examine the effect of environmental and labor performance on investment decisions. Findings show that investment decisions are influenced by CSR performance. The results support the attribution theory explanation in that positive news about a company is discounted unless an investor has some sense that

the disclosure is reliable. This suggests that without some signal of the reliability of information, investors may be wary of the veracity of positive CSR disclosures.

3.3.5 *Social Movement Theory*

Islam and van Staden (2018) use both social movement theory (King & Soule, 2007) and collaboration theory (Wood & Gray, 1991) to examine influences on conflict mineral disclosures. They find that collaboration with NGOs (social movement organizations) and activist protests lead to more comprehensive, and therefore more transparent, disclosures. Their findings have practical and policy implications in that improved corporate transparency is the result of social movement actions via NGOs, that is regulation on its own may not result in comprehensive disclosures.

3.3.6 *Structuration Theory*

The structuration theory is a social theory by Giddens (1976, 1984), which is based on interplaying between agent and structure and considers the structure (society) as a process that develops through time and across space, interacting with human actions. The structure is defined as “rules and resources recursively implicated in the reproduction of social systems” (Giddens, 1984, p.377), which can provide to society: meaning (signification), morality (legitimation), and influence (domination). In subsequent years, Stones (2005) has developed and strengthened this theory, later named “strong structuration theory,” claiming that the duality between agent and structure is best understood through a quadripartite framework comprising external structures, internal structures, active agency, and outcomes.

Based on structuration theory, Buhr (2002) investigates the reasons underlying the environmental report, carrying out two case studies. It seems to be a tool to increase transparency regarding environmental performance but also to change ways of doing business. The environmental report process is long and complicated, even when agents push to make changes, but the structure interferes in different ways. In more recent years in a theoretical contribution, Coad et al. (2016) show the interdisciplinary value of the strong structuration theory and emphasize its use in environmental report issues.

4 Conclusions

This study focuses on reporting concerning social and environmental sustainability, aiming to deepen the theoretical bases of this particular kind of corporate disclosure through a review of the most relevant literature of the last thirty years. It involves the application of different theories to the study of SES reporting.

Our research findings make at least two main contributions. First, to the best of our knowledge, this is the first systematic literature review specifically focusing on the different theories—and their interconnections—that showed a successful capacity for explaining firms' commitment toward SES reporting. Our review highlighted that legitimacy, institutional and stakeholder theories are by far the most used and popular for informing empirical or conceptual studies in SES reporting. Legitimacy, in particular, is the most used for both single-theory and multi-theory frameworks when combined with stakeholder, impression management, voluntary disclosure/signaling, institutional and resource-based theories. Others, such as agency, signaling, Laclau and Mouffe's discourse theory, and attribution theory, are present but in a less prominent way. Our literature review also pointed out the presence of multi-theory approaches where more than three theories are used together to inform the empirical or conceptual analysis. The combination of two or more theories is a recent trend in SES studies, whose development deserves further attention.

Second, this study aims to represent a comprehensive literature review of the most significant contributions, and for this purpose, we included both accounting and management journals. In particular, we decided to include articles published in the top (three or four stars) journals in the area of Accounting, but also General Management, Ethics, Gender, and Social Responsibility. We screened a large account of manuscripts to include the most relevant articles. Thus, SES reporting being a topic that lends itself to being addressed from a multidisciplinary perspective, we believe this literature review can contribute to all the above-mentioned academic communities and favor a profitable contamination among different theories.

In light of the above, on the one hand, our research findings are useful for scholars needing a systematization of the last thirty years of literature concerning theoretical frameworks able to support the study of non-financial disclosure and, particularly, sustainability reporting. On the other hand, this literature review can enable policymakers and practitioners to better understand the rationales behind firms' commitment to voluntary non-financial disclosure and the arguments advocating mandatory disclosure frameworks with respect to SES issues.

Our analysis is restricted until the end of 2019. It would be interesting in the future to continue such an analysis for the coming periods. Our results show that in recent years the number of studies conducted on this topic is largely growing, so it is probable that future analyses could be based on a larger number of papers. It will be interesting to understand if mainstream theories will continue to be used or if they will leave more room for emerging theories. Furthermore, our findings derive from an analysis conducted on a group of articles, half of which are published in two journals: *Accounting, Auditing and Accountability Journal* and *Journal of Business Ethics*. This represents value for our work because of the prestige of these two journals. However, other journals are much less represented in the analyzed group of papers; thus, future research could focus on different sources to verify whether the results are comparable or not.

Our research aims not only to offer a picture of the theoretical approaches to support SES reporting but also goes as far as to appreciate their use in several

surveys concerning different aspects of non-financial disclosure. For the future, we wish to combine our descriptive analysis with a bibliometric one aimed at grasping the spatial distribution of the various theories and the “more near” contributions regarding issues and theories through co-citations and co-authorship analysis.

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Sustainability and Greenhouse Gas Emissions Disclosure: A Systematic Literature Review About Empirical Studies



Carmela Gulluscio and Pina Puntillo

1 Introduction

In recent times, the expectations of stakeholders toward the information provided by companies are rapidly expanding. Various categories of stakeholders are interested in knowing the impacts that the actions of companies have not only on the economic and financial performance but also on social and environmental aspects. In this, context, the concept of sustainability has become central to the disclosure of companies.

In recent years, within sustainability disclosure, the environment is an aspect gaining progressively importance (Gray et al., 1995; Patten, 2002; Prado-Lorenzo et al., 2008, 2009). Many aspects of the environment deserve attention in firms' disclosure, e.g., biodiversity, water, natural resources, energy, and climate change. Among them, the latter is the subject of particular attention. Climate change is believed to be caused by CO₂ and other greenhouse gas (GHG) emissions. In this context, a relevant role is played by the Kyoto Protocol of the United Nations Framework Convention on Climate Change, signed in 1997. It aims at sinking GHG emissions and moving the costs related to climate change from citizens of deprived countries producing a lower level of polluting emissions to the firms producing them.

C. Gulluscio (✉)

Department of Law and Economic Sciences, Unitelma Sapienza University of Rome, Rome, Italy

e-mail: carmela.gulluscio@unitelmasapienza.it

P. Puntillo

Department of Business Administration and Law, University of Calabria, Rende, Italy

e-mail: pina.puntillo@unical.it

Over the past few decades, companies have changed their attitude toward the need to take action to combat climate change, to document the actions taken to this end, and to report on the results obtained. Until the early 1990s, most corporations ignored this need. Starting in the mid-1990s, the firms in some sectors using large quantities of fossil fuels began to feel the need to regulate GHG emissions. Only in recent years, companies are beginning to understand that limiting climate change is not only a constraint but also an opportunity for them, since financial markets reward companies active in the fight against climate change (Kolk et al., 2008, p. 719).

In this context, there is an increase in stakeholders' expectations about GHG reporting. At present, this type of disclosure is mainly a voluntary and non-standardized activity (Federation of European Accountants, 2009; Liesen et al., 2015), and it is also in the first stage of development (Smith et al., 2008, p. 470). These factors can limit the informative capacity of GHG disclosure, leading to the production of not comparable information among the various firms. In this way, stakeholders are not able to assess the differences in GHG performance among the firms (Liesen et al., 2015, p. 1048).

The purpose of this chapter is to present a systematic literature review of empirical studies about sustainability and GHG emissions disclosure. The need to investigate this type of sustainability disclosure emerges from a literature review about sustainability and climate change accounting/reporting (Gulluscio et al., 2020). Here it was found that climate change disclosure is in an initial and expansive phase. The same need also emerges by other contributions highlighting that, despite a growing stakeholder need for GHG emissions disclosure, empirical research on this topic is still scarce (Liesen et al., 2015; Rankin et al., 2011; Solomon et al., 2011).

Given the relative novelty of this research area, this chapter develops a systematic review on the GHG emissions disclosure-based literature during the period 1999–2018, by focusing only on articles published in international peer-reviewed journals. The literature review aims at mapping the conceptual structure and the evolution of the GHG disclosure-related literature in order to understand its current status, identify gaps to be filled, and challenge scholars to increase their work on relevant areas for their future sustainability disclosure research.

In the authors' opinion, the literature review here performed can be useful for a varied group of readers since it:

- Exhibits the different perspectives addressed by GHG emissions disclosure research.
- Calls attention to new research areas in which sustainability disclosure should be beneficial.
- Picks out some development perspectives of the accounting discipline.

The chapter is structured as follows: Sect. 2 describes the research methods; Sect. 3 reports the findings, divided into more subsections 3.1, 3.2, and 3.3 report the main findings from the bibliometric analysis, while Sect. 3.4 describes the findings from the qualitative analysis. In Sect. 4 discussion and conclusions are reported.

2 Research Methods

The literature review was performed according to a mixed approach: after identifying the publications to be analyzed (phase 1), a bibliometric approach was used to analyze and to quantitatively evaluate publications about sustainability disclosure and GHG emissions (phase 2). Thereafter, the Guthrie et al. (2012) analytical framework was adjusted to the dataset to qualitatively analyze the contents of the articles within the sample (phase 3).

The identification of the publications to be analyzed (phase 1) was structured into different moments. At a first stage, the analysis was focused upon a broad dataset previously extracted by the authors on Clarivate Analytics Web of Science (WoS at <http://www.webofknowledge.com>), centered on what accountants (both at the academic and at the professional level) published about sustainability. This broad dataset was obtained through the following topical query launched on WoS:

- (((“account*” OR “report*”) AND (“global reporting initiative” OR “GRI”)))
- (((“account*” OR “report*”) AND (“social*” OR “environment*” OR “sustainab*” OR “CSR” OR “responsib*” OR “TBL” OR “triple” OR “integr*”)))
- (((“account*” OR “report*”) AND (*financial)))
- (((“account*” OR “report*”) AND (“carbon” OR “divestment” OR “Paris agreement” OR “multigenerational benefit” OR “climate change” OR “consequential” OR “natural disaster” OR “ecological”)))

The first results were refined using the following criteria:

- Only articles.
- Only English language.
- Research areas: environmental sciences, ecology, business economics, operations research management science, energy fuels, social science’s other topics, and water resources.
- Web of Science categories: environmental sciences, ecology, energy fuels, engineering environmental, environmental studies, management, water resources, business finance, business, social sciences interdisciplinary, green sustainable science technology, operations research management science, development studies, and ethics.
- Time span: 1999–2018. The authors used 1999 as the starting year of the analysis since in this period the first sustainability reports and similar disclosure tools were published as a result of the issuing of the first GRI guidelines (Kolk, 2010, p. 370).
- Citation Indexes: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, and ESCI.

As a result of this broad search, approximately 99,000 relevant documents were found. From the first analysis of these results, it emerged that many articles were not coherent with the subject of the research. Therefore, the researchers performed individual analyses of each document to decide to include them within the analysis

or to exclude them. These analyses were performed focusing primarily on the title, keywords, and abstract and, where necessary, also on the full text. This phase of the analysis lasted about 5 months. In this way, the two researchers selected a sample of approximately 900 articles about “sustainability disclosure” including both accounting and reporting aspects. It was a long work to extract this broad sample, conceived as a large basin to draw for subsequent in-depth studies on more specific issues within sustainability disclosure.

Since the focus of this chapter is GHG sustainability disclosure, falling within the broader climate change topic, the authors subsequently re-assessed the articles with the keywords *climate*, *climate change*, *climate-change* and *warming*, selecting 148 documents. The researchers read the selected papers and excluded those deemed not coherent with the research aim, obtaining a sample of 85 documents. In this way, it was possible to obtain a broad picture of what accounting scholars and practitioners published about GHG emissions sustainability accounting and reporting.

In the last stage, the authors examined the 85 above-mentioned documents, selecting only those focusing on empirical aspects of GHG emissions disclosure. The “empirical aspects” were identified in papers focusing on: (a) how GHG emissions were included in firms’ disclosure; (b) case studies focusing on GHG emissions disclosure. In this way, a sample of 19 papers to be analyzed was obtained (see Appendix).

In phase 2, the authors used the *bibliometrix* R-package (<http://www.bibliometrix.org>) as a tool to provide support in data collection, analyses, and visualization. This tool supported the researchers in (a) data loading and converting to R data frame; (b) data analysis, through the creation of a descriptive analysis of the bibliographic data frame, network creation for bibliographic coupling, co-citation, collaboration, and co-occurrence analyses, and data normalization; and (c) data visualization through conceptual structure mapping and the creation of a network mapping.

In phase 3, the authors adopted a qualitative approach to analyze the contents of the articles within the sample. During a pilot stage, the authors read five of the papers included in the sample (using both abstracts and full texts) and thereafter discussed them and made preliminary classifications. Consequently, the Guthrie et al. (2012) coding scheme was slightly modified, as outlined in Sect. 3.4. Thereafter, one author coded manually the papers and the other author checked the coding. The criteria used and the results that emerged through the qualitative analysis are synthesized in Sect. 3.4.

3 Findings

The bibliometric analysis of scientific publications was performed through the *bibliometrix* tool. It uses several functions. In this chapter, the authors limited its use to the following functions (Aria & Cuccurullo, 2017):

Table 1 Main information about the 85 articles falling within the literature review

Description	Results
Documents	19
Sources (journals, books, etc.)	9
Keywords plus (ID)	58
Author’s keywords (DE)	77
Time period of publication of the selected documents	2008–2018
Average citations per document	51.11
Authors	45
Author appearances (i.e., number of publications per author)	47
Authors of single-authored documents	2
Authors of multi-authored documents	43
Single-authored documents	2
Documents per author	0.422
Authors per document	2.37
Co-authors per documents	2.47
Collaboration Index	2.53
Document types: articles	19

1. The *biblioAnalysis* function, whose results are displayed in Sect. 3.1.
2. The functions *summary* and *plot*, whose results are displayed in Sect. 3.2.
3. The *citations* function, described in Sect. 3.3.

3.1 Main Information Derived from the Biblioanalysis Function

The analysis was performed on 19 articles published in the period 2008–2018. They were published in 9 different journals and were written by 45 authors. Only 2 papers were single authored. The main information about the collection is summarized in Table 1.

3.2 Main Information Derived from the Summary and Plot Function

This function summarizes the main results emerging from the bibliometric analyses. This section presents the following results:

- Annual scientific production
- Most relevant and cited sources
- Most relevant authors

- Most productive countries based on first author's affiliations and most relevant affiliations
- Most frequent keywords

Figure 1 shows the annual scientific production of articles during the period 2008–2017. The number of articles per year within the sample is low: there was only one article about this topic in the years 2008, 2009, 2014, 2015, and 2017. The most productive years were 2011 (5 articles) and 2018 (4 articles). This testifies to the relative novelty of the theme. The growing but still limited attention towards GHG emissions disclosure emerged in conjunction with some events drawing attention to environmental issues, e.g., the economic recession, bank failures, and potential EU member state failures (Milne & Grubnic, 2011).

Figure 2 shows the 9 journals in which most of the articles analyzed were published. The largest number of articles was published in the *Journal of Cleaner Production*, *Business Strategy and the Environment*, *Accounting Auditing & Accountability Journal*, *Australian Accounting Review*, and *Journal of Business Ethics*.

Bibliometrix allows investigating also the most cited sources within the sample (Fig. 3). This means that it is possible to download from WoS not only the main identification data of the articles, i.e., author(s), journal, title, and year of publication, but also the citations of each article. For this reason, the bibliographic citations here analyzed are in greater number than the 19 articles making up the sample. The largest number of citations was published in *Accounting, Auditing and Accountability Journal*, *Accounting, Organizations and Society*, *Journal of Business Ethics*, *Journal of Cleaner Production*, and *Business Strategy and the Environment*. The joint analyses of Figs. 2 and 3 show the most relevant journals in terms of GHG disclosure.

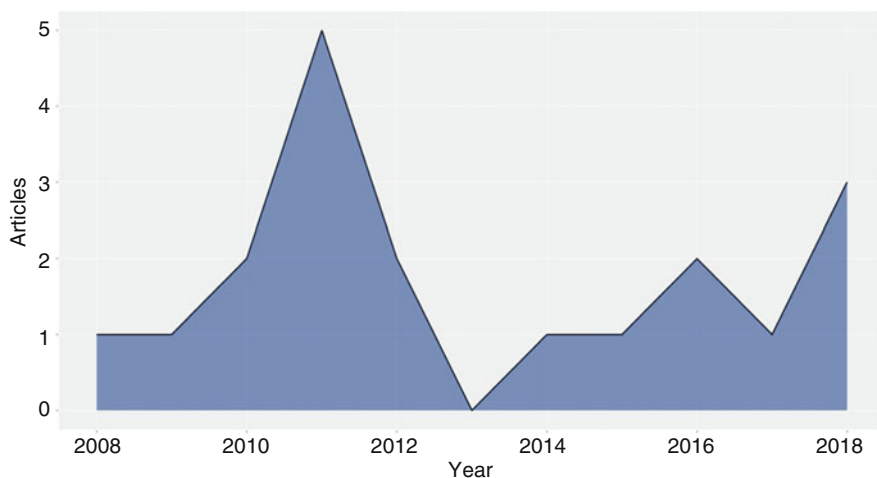


Fig. 1 Annual scientific production

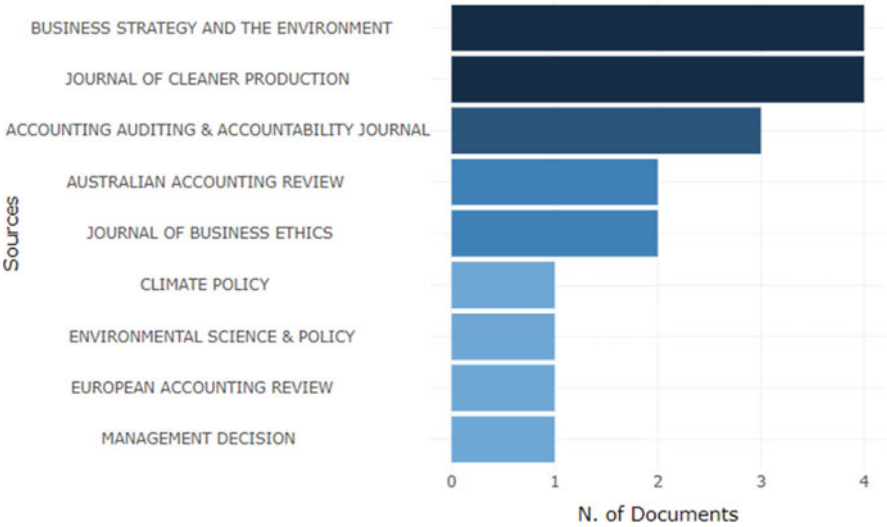


Fig. 2 Most relevant sources

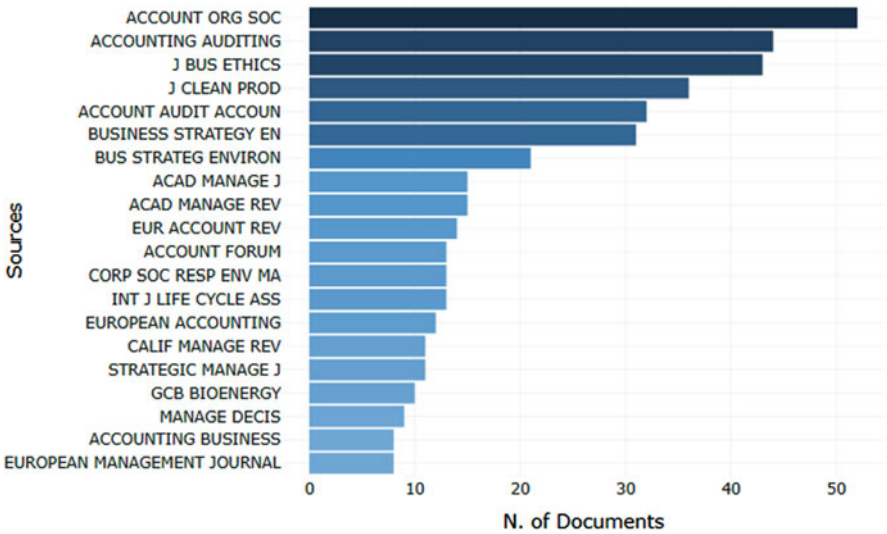


Fig. 3 Most cited sources

Table 2 shows the most active authors in terms of articles. The authors publishing the highest number of publications within the sample were Isabel Gallego Alvarez (3 articles) and Isabel-Maria Garcia Sanchez (2 articles), both affiliated with the University of Salamanca in Spain. They acted as co-authors for 2 articles within the sample. All other authors within the sample published (as single authors or co-authors) only one article.

Table 2 Most relevant authors

Authors	Articles
Gallego Alvarez I	3
Garcia Sanchez IM	2
All other authors	1

Table 3 Most productive countries

Region	Freq	Region	Freq
UK	10	Greece	2
Australia	7	Netherlands	2
France	5	China	1
Canada	4	Germany	1
USA	4	Indonesia	1
Spain	3	Sweden	1

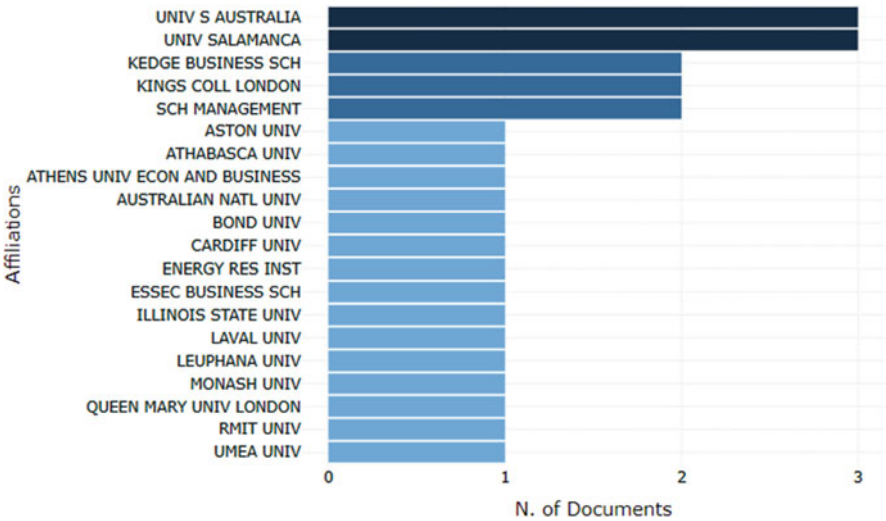


Fig. 4 Most relevant affiliations

Table 3 shows the most productive countries based on the first author’s affiliation. The higher number of articles within the sample was published by authors in the UK (10 articles), Australia (8), France (5), Canada (4), USA (4), and Spain (3).

Figure 4 shows the authors’ university affiliations. The Universities of South Australia and Salamanca are the most productive affiliations, with 3 papers each.

The conceptual structure of the sample could be analyzed through the most frequently used keywords. *Bibliometrix* analyzes them through the following types of keywords: (a) keywords plus (identified by Clarivate Analytics), (b) authors keywords (i.e., keywords declared by the authors), (c) words within titles, and (d) words within abstracts (see Table 4). Looking at all these types of keywords,

Table 4 Most frequently used keywords

Keywords Plus	Occurrences	Author keywords	Occ.	Words in titles	Occ.	Words in abstracts	Occ.
Climate change	5	Climate change	6	Corporate	9	Reporting	47
Legitimacy	5	GHG emissions	3	Climate	7	Climate	45
Companies	4	Sustainable reporting	3	Reporting	7	Disclosure	42
Environmental disclosures	4	Sustainable development	3	Disclosure	6	Companies	41
Strategies	4	Financial performance	2	Change	5	Change	36
Greenhouse gas emissions	3	GHG reporting	2	Accounting	4	Emissions	33
Management	3	Attributional LCA	1	Carbon	4	Carbon	22
Performance	3	Australian mining industry	1	Emissions	4	Corporate	22
Politics	3	Bioenergy	1	Evidence	4	GHG	20
Determinants	2	Canadian extractive sector	1	Gas	4	Greenhouse	20
Environmental performances	2	Carbon	1	GHG	4	Paper	20
Firms	2	Carbon accounting	1	Greenhouse	4	Analysis	19
Impact	2	Carbon greenhouse gas emissions	1	Assessment	3	Firms	18
Social responsibility	2	Cleaner production	1	Companies	3	Gas	18
Social responsibility disclosure	2	Climate change disclosure	1	Exploring	3	Environmental	16
Additional harvest	1	Climatology	1	Performance	3	Study	14
Audit culture	1	CO ₂ emission variation	1	Australian	2	Sustainability	14
Behaviour	1	Communication channels	1	Business	2	Global	13
Biomass energy	1	Consequential Ica	1	Emerging	2	Management	13
Business	1	Consumer	1	Emission	2	Reports	13

the most common concepts are *climate/climate change*, *reporting*, *emissions*, *disclosure*, *GHG/greenhouse gas*, and *carbon*.

3.3 Main Information Derived from the Citations Function

Table 5 shows the 20-most cited papers in terms of total citations and total citations per year. These could be papers outside the sample. Here we find the most cited papers within the articles in the sample. Kolk et al. (2008), Lozano and Huisinigh (2011), and Rankin et al. (2011) are the most cited papers.

3.4 Qualitative Analysis

The descriptive statistical analysis was accompanied by a qualitative analysis based on the Guthrie et al.'s (2012) analytical framework (and its improved version proposed by Dumay et al., 2015). The authors used the PDFs of the articles within the sample and downloaded their texts and their citations into an endnote database. Thereafter, the authors used a Microsoft Access database for their coding.

Table 5 Top 20-most cited papers

Paper	Total citations	TC per year
KOLK A, 2008, EUR ACCOUNT REV	241	18.538
LOZANO R, 2011, J CLEAN PROD	196	19.6
RANKIN M, 2011, ACCOUNT AUDIT ACCOUN	86	8.6
PRADO-LORENZO JM, 2009, MANAGE DECIS	75	6.25
BURRITT RL, 2011, AUST ACCOUNT REV	67	6.7
PELLEGRINO C, 2012, J CLEAN PROD	58	6.444
HADDOCK-FRASER, 2010, BUS STRATEG ENVIRON	49	4.455
SOLOMON JF, 2011, ACCOUNT AUDIT ACCOUN	48	4.8
HAQUE S, 2010, AUST ACCOUNT REV	39	3.545
ALVAREZ IG, 2012, BUS STRATEG ENVIRON	24	2.667
GALLEGO-ALVAREZ I, 2014, BUS STRATEG ENVIRON	21	3
LIESEN A, 2015, ACCOUNT AUDIT ACCOUN	20	3.333
DEPOERS F, 2016, J BUS ETHICS	20	4
TABLBOT D, 2018, J BUS ETHICS	11	3.667
HALKOS G, 2016, ENVIRON SCI POLICY	8	1.6
BRANDER M, 2017, J CLEAN PROD	6	1.5
DILLING PFA, 2018, J CLEAN PROD	1	0.333
TANG S, 2018, BUS STRATEG ENVIRON	1	0.333
PULLES T, 2011, CLIM POLICY	0	0

In the first stage, the authors read five articles each, discussing about a modification of the Guthrie et al. (2012) and the Dumay et al. (2015) analytical frameworks. This modification resulted in the framework displayed in Table 6.

In the following, the authors explain the categories of the framework and report a synthesis of the main results emerged.

3.4.1 Jurisdiction (A)

This criterion includes articles based on a focus upon: (A0) supranational/international/comparative contexts, (A1) national contexts (states), (A2) local governments, (A3) public business enterprises, (A4) private companies, and (A5) specific economic sectors. As shown in Table 6, the only focus of the sample is on private companies. In many cases, the articles within the sample identified broad samples of firms operating in more than one production sector. In other cases, the articles within the sample focused on case studies or samples in specific economic sectors, e.g., investment institutions (Solomon et al., 2011), energy sector (Talbot & Boiral, 2018; Dilling & Harris, 2018; Brander, 2017), mining industry (Pellegrino & Lodhia, 2012), and road transport (Pulles & Yang, 2011).

Literature suggests a relevant “industry effect” on non-financial disclosure, including sustainability and GHG emissions disclosure. According to Line et al. (2002), firms operating in the chemical, mining, and oil sectors disclose more information about environmental management, employees’ safety actions, and health. Firms operating in the financial and tertiary-service sectors, on the contrary, seem to be more involved in the disclosure of labor practices and product responsibility. According to other studies (Ahmad et al., 2003; da Silva Monteiro & Aibar-Guzmán, 2010; Hackston & Milne, 1996; Patten, 1991; Roberts, 1992) in sectors with high environmental impact, such as mining, oil and gas, energy, petroleum, chemicals, building materials, steel/metal, petroleum, and transport, firms disclose about their environmental impact more than firms operating in other sectors. According to Deegan (2009), companies operating in resource extraction and manufacturing and electricity production are usually more affected by the influence of climate change. For these reasons, within the criterion “jurisdiction” we searched for evidence about characteristics of the GHG disclosure in different industries.

Within the sample analyzed, some papers dealt with one specific economic sector, while a large part of them focused on more than one sector. The most frequent sectors analyzed in the papers within the sample are energy, mining/metals/extractives, oil and gas/petroleum/refining, industrials, utilities (e.g., energy and water utilities), aerospace/airlines, chemicals, financial services, telecommunications, and motor/automotive.

Findings within the sample confirm a relevant relationship between the volume of information about GHG emissions and the sectors in which companies operate, thus confirming the relevance of the industry effect on the disclosure of voluntary information, which is usually a means for reducing political costs. This is in line with previous literature about the industry effect, e.g., Cowen et al. (1987); Hackston

Table 6 Analytical framework

A. Jurisdiction	Articles	%
<i>A0. Supranational/international/comparative context</i>	0	0.00
A1. State	0	0.00
A2. Local government	0	0.00
A3. Public business enterprises (PBE);	0	0.00
A4. Private company/ies	19	100.00
A5. Specific economic sector (e.g. chemistry, energy, etc.)	0	0.00
Totals	19	100
<i>B. Location</i>	1	5.26
B1. Europe	3	15.79
B2. Australia	4	21.05
B3. UK	4	21.05
B4. Greece	1	5.26
B5. France	1	5.26
B6. Not a single specific location (more companies from different locations)	7	36.84
B7. Canada	1	5.26
B8. Germany	1	5.26
Totals	19	100
<i>C. Focus of the article</i>	9	47.37
C1. Different types of GHG emission disclosures (e.g. voluntary and incomplete emissions disclosure)	9	47.37
C2. Private climate change reporting	1	5.26
C3. External assurance of climate information	0	0.00
C4. Use of GHG disclosure as legitimizing strategy/Impression management strategies	0	0.00
C5. Quality and quantity trend in GHG reporting	1	5.26
C6. Relationship between firm performance and emission reduction	2	10.53
C7. GHG emissions inventories according to the United Nations Framework Convention on Climate Change (UNFCC)	1	5.26
C8. Attributional corporate GHG inventories, consequential life cycle assessment, and project/policy GHG accounting	1	5.26
C9. Mandatory disclosure of GHG emissions	2	5.26
C3+C4 (mixed category)	1	5.26
C1+C4 (mixed category)	1	5.26
C1+C6 (mixed category)	1	5.26
Totals	19	100
<i>D. Research methods</i>		
D1. Single case study	1	5.26
D2. Multi case/field/panel study	1	5.26
D3. Interviews	0	5.26
D4. Content analysis of reports or other documents	0	0.00
D5. Statistical analysis for hypotheses testing	0	0.00
D6. Grounded theory	0	0.00
D2+D5 (mixed category)	6	31.58

(continued)

Table 6 (continued)

A. Jurisdiction	Articles	%
D2+D4+D5 (mixed category)	2	10.53
D1+D4 (mixed category)	1	5.26
D2+D4 (mixed category)	4	21.05
D2+D3 (mixed category)	1	5.26
D3+D4 (mixed category)	2	5.26
D2+D6 (mixed category)	1	5.26
Totals	19	100
<i>E. Frameworks, models and theories</i>		
E1. No framework/model/theory proposed	6	31.58
E2. Applies or considers previous frameworks/models/theories	11	57.89
E3. Proposes a new framework/model/theory	1	5.26
E2+E3 (mixed category)	1	5.26
Totals	19	100
<i>F. Academics and practitioners (i.e. paper with academic and/or practitioner authors)</i>		
F1. Academics	18	94.74
F2. Practitioners	1	5.26
F3. Academics and practitioners	0	0.00
Totals	19	100
<i>G. Objective of the paper</i>		
G1. To explain the reasons behind a certain type of GHG disclosure	4	21.05
G2. To examine/describe a certain type of disclosure	6	31.58
G3. To examine the quality/reliability of a certain type of disclosure	1	5.26
G4. To examine the strategies behind the use of a certain type of disclosure	0	0.00
G5. To examine the quantity trends in GHG reporting	0	0.00
G6. To explain how a certain type of disclosure is used to answer the stakeholders' expectations	1	5.26
G7. To identify the effects of the emission reduction (and disclosure) on the firms' performance	0	0.00
G8. To compare a GHG reporting framework with the disclosure of companies	1	5.26
G9. To compare financial and environmental performance of firms	1	5.26
G3+G4	1	5.26
G3+G5	1	5.26
G2+G7	1	5.26
G1+G6	1	5.26
G1+G2+G7	1	5.26
Totals	19	100

and Milne (1996); Archel (2003); Gul and Leung (2004). The strongest relationship between the volume of GHG information provided and economic sectors was found for aerospace/airlines, motor/automotive, and chemicals.

Within the dimension “jurisdiction,” also firm dimension plays a relevant role. According to Rankin et al. (2011), firms voluntarily disclosing GHGs information are usually large firms, with high corporate governance quality, and often operate in the mining and industrial sectors. Moreover, the most credible information is usually reported by large companies operating in the energy, mining, industrial, and services industries. According to Halkos and Skouloudis (2016), who analyzed the discretionary climate change disclosure (CCD) of the largest 100 firms in Greece published on the web during the first quarter of 2011, environmentally sensitive sectors and the companies’ international presence are variables positively affecting GHG disclosure, while companies’ size has a positive yet negligible effect on GHG disclosure.

According to Prado-Lorenzo et al. (2009), it was found a positive relationship between corporate size, market capitalization, and the disclosure of information related to GHG emissions according to the Global Reporting Initiative (GRI). Corporate size is also positively related to the production of any type of voluntary information. Large companies are more prone to publish a wide range of voluntary information. An inverse relationship was found between ROE and GHG disclosure. The results of this paper confirm the relevant influence of activity sectors on the volume of GHG emissions information. The paper also showed that the best GHG reporting practices emerged in companies whose headquarters are in countries applying the Kyoto Protocol. Finally, the paper showed that companies with poor economic performance publish more environmental information to improve their image for stakeholders.

3.4.2 Location (B)

This criterion specifies the location(s) analyzed in the examined articles. In most cases, the articles within the sample focused not on a single location, but on an international sample of companies. The most frequent locations were Australia and Europe. In most cases, they were samples of companies identified at the international (Liesen et al., 2015; Talbot & Boiral, 2018; Gallego Alvarez, 2012; Gallego Alvarez et al., 2014; Pulles & Yang, 2011; Kolk et al., 2008; Prado-Lorenzo et al., 2009) or the national level (Rankin et al., 2011 in Australia; Solomon et al., 2011 in the UK; Halkos & Skouloudis, 2016 in Greece; Depoers et al., 2016 in France; Dilling & Harris, 2018 in Canada; Haddock-Fraser & Tourelle, 2010 in the UK; Tang & Demeritt, 2018 in the UK; Burritt et al. 2011 in Germany). Only in few cases they were single companies or small groups of companies identified at a national level (Pellegrino & Lodhia, 2012; Haque & Deegan, 2010 in Australia; Brander, 2017 in Scotland; Burritt et al., 2011 in Germany; Lozano & Huisingh, 2011 in Mexico and the USA).

The papers within the sample show differences in firms’ GHG information production according to their geographic location. These differences are quite clearly shown by Kolk et al. (2008), who found geographical variations in Carbon Disclosure Project (CDP) response. They found a better response by North American firms, followed by European firms and Asian-Pacific firms. Firms operating in emerging economies have the lowest response rate. Until 2005, the number of North American

firms using CDP for disclosing emissions information was lower than European firms. Thereafter, North American firms (and especially US firms) increased significantly their CDP disclosure.

3.4.3 Focus of the Article (C)

In most cases, the articles fell within the category focused on different types of GHG emissions disclosures (C1). In this broad category, there emerged, for example, articles about voluntary GHG disclosure (Rankin et al., 2011), incomplete emissions disclosure (Liesen et al., 2015), the status of climate change disclosure practices in a specific sample of firms (Halkos & Skouloudis, 2016), the annual reporting procedures of the United Nations Framework Convention on Climate Change (UNFCCC) (Pulles & Yang, 2011), corporate governance disclosure practices (Haque & Deegan, 2010), factors behind the disclosure of corporate information about GHG emissions and climate change (Prado-Lorenzo et al., 2009), comparisons among GHG reports of different companies.

In two cases, the focus was upon the relationship between firm performance and emission reduction (C6) (Gallego Alvarez, 2012; Gallego Alvarez et al., 2014). All other categories identified recurred only one time within the sample. The authors also identified some mixed categories, i.e., articles focusing on more than one topic, such as external assurance of climate information and use of GHG disclosure as legitimizing strategy (C3 + C4) (Talbot & Boiral, 2018), different types of GHG emission disclosures and use of GHG disclosure as legitimizing strategy (C1 + C4) (Haddock-Fraser & Tourelle, 2010), and different types of GHG emission disclosures and relationship between firm performance and emission reduction (C1 + C6) (Burritt et al., 2011).

Focusing on the most widespread subcategory within this dimension of the framework, most of the articles in the sample were categorized into the group named C1 (GHG emissions disclosures) including, for instance, voluntary and incomplete emissions disclosure. In this group, Liesen et al. (2015) aimed at examining corporate quantitative GHG emissions disclosures and at ascertaining the ability of stakeholders' pressure in influencing the reporting. The results confirmed the influence of stakeholders' pressure on the decision to introduce some type of GHG disclosure, but there emerged also a little influence on the completeness of these reports. In fact, within the sample of European countries analyzed in this paper during the period 2005–2009, a high percentage of companies disclosed at least some type of quantitative GHG emissions information. In most cases, this information was not complete in terms of type (i.e., information about CO₂ and other GHGs) and reporting margins (i.e., information about activities of the whole group of companies).

3.4.4 Research Methods (D)

Most of the papers within the sample used more than one research method. In most cases (six papers), there was a combination of multi-case/field/panel studies (D2) and statistical analysis for hypotheses testing. Papers falling within this mixed category focused on hypotheses about the following aspects:

- Whether external stakeholder pressure influences the existence and completeness of GHG disclosure. Results suggest that external stakeholder pressure influences the existence of GHG disclosure, but not of its completeness (Liesen et al., 2015).
- Factors affecting the credibility of voluntary GHG disclosure (Rankin et al., 2011). Results that emerged suggest that firms are more likely to voluntarily disclose credible GHG emissions information in the following cases. (a) If they have voluntarily activated an environmental management system; (b) if they have voluntarily implemented ISO14001 certified systems; (c) if they have voluntarily introduced environment committees within their boards; (d) if they have a good corporate governance quality; and (e) if they report information according to the GRI.
- The identification of variables affecting climate change disclosure (Halkos & Skouloudis, 2016). Results suggest that relevant factors are: (a) adherence to externally developed voluntary initiatives; (b) firms presence at the international level; and (c) belonging to environmentally sensitive sectors.
- Amount and variation over time of CO₂ emissions and the impact of CO₂ emissions on firms performance (Gallego Alvarez, 2012). Results suggest that the CO₂ emissions of the firms analyzed decreased in the timeframe examined. Moreover, there was found a significant impact of the decrease of CO₂ emissions on firms performance, with a positive correlation with ROE and a negative correlation with ROA.
- Factors influencing the implementation of environmental measures by close-to-consumer companies (C2C) (Haddock-Fraser & Tourelle, 2010). Results suggest that reputation is a relevant business motivator for investing in such initiatives.
- The relationship between environmental and financial performance (Gallego Alvarez et al. 2014). Results suggest that, in times of economic crises, the synergy between these two types of performance is high. Therefore, it is useful to invest in sustainable projects, since this improves not only the relationship with stakeholders but also the economic performance of the firms.

Another relevant mixed category encompasses a combination of multi-case/field/panel studies (D2) and content analysis of reports or other documents (D4). Within this group, Talbot and Boiral (2018) demonstrated the ineffectiveness of external assurance in certifying the quality and representativeness of the GHG disclosure. Dilling and Harris (2018) found an increase of environmental reporting quality and quantity within the sample they analyzed in a specific timeframe both in financial reports and in sustainability reports, even though the overall disclosure quality they analyzed was still low. Haque and Deegan (2010) found that starting in the 1990s,

climate change disclosure within the sample analyzed increased, and some firms started disclosing about new items, i.e., emissions accounting, research & development (R&D), and potential liability reduction. They found a relevant increase in emissions accounting since the early 1990s. The most frequent issue in these disclosures is board committees.

3.4.5 Frameworks, Models, and Theories (E)

This criterion distinguishes among papers: not proposing any framework, model, or theory (E1); applying or considering previous frameworks/models/theories (E2); and proposing a new framework/model/theory (E3). In most cases, the articles within the sample applied previous frameworks, models, and theories. The most frequent theories were legitimacy and stakeholder theory. Findings of the papers within the sample confirm stakeholder theory's assumption about the relevance of stakeholders' pressure to stimulate GHG emissions reporting. They also confirm legitimacy theory's assumption that companies often use GHG disclosure as a symbolic act to address legitimacy aspects.

3.4.6 Academic and/or Practitioner Authors (F)

The last criterion distinguishes among papers with only academic authors (F1); only practitioner authors (F2); both academic and practitioner authors (F3). In most cases, academic authors were identified. Only in one case practitioner authors emerged (Pulles & Yang, 2011). No relevant differences emerged between articles with academic and with practitioner authors.

3.4.7 Objective of the Paper (G)

The last criterion used to categorize the papers within the sample is the objective declared by the authors. The most frequent objective was to examine/describe a certain type of disclosure (G2). In this category the following papers were placed:

- Liesen et al. (2015), aiming at shedding light on incomplete corporate disclosure of quantitative GHG emissions and at investigating whether external stakeholder pressures are able to influence the existence and the completeness of voluntary GHG emissions disclosures by a broad sample of European companies.
- Solomon et al. (2011), exploring the nature of "private climate change reporting," taking place in one-on-one meetings between institutional investors and companies.
- Brander (2017), focusing on attributional GHG inventories, consequential life cycle assessment, and project GHG accounting.

- Burritt et al. (2011), examining the practices of leading German companies in the reporting of carbon and carbon-equivalent emissions.
- Kolk et al. (2008) and Lozano and Huisinigh (2011), aiming at assessing the degree to which companies address the economic, social, and ecological issues in a separated or in an integrated manner.

Another frequent objective was to explain the reasons behind a certain type of GHG disclosure (G1). In this category, the following papers were placed:

- Rankin et al. (2011), aiming at confirming or disproving the hypotheses that GHG reporting is related to internal organization systems, external privately promulgated guidance, and European Union Emissions Trading Schemes.
- Halkos and Skouloudis (2016), exploring the state of the disclosure practices about climate change mitigation of the largest 100 Greek firms, and aiming at shedding light on the determinants driving Greek firms to publicly disclose this type of information.
- Haque and Deegan (2010), using content analysis to investigate the climate change-related corporate governance practices of some Australian companies.
- Prado-Lorenzo et al. (2009), aiming at analyzing the different factors behind the disclosure of corporate information about GHG emissions and climate change worldwide.

Other relevant objectives emerged, but they were identified in a few papers, thus suggesting more research about the following aspects:

- (a) To examine the quality/reliability of a certain type of disclosure (G3), identified in the following papers: Depoers et al. (2016), Talbot and Boiral (2018), Dilling and Harris (2018).
- (b) To explain how a certain type of disclosure is used to answer the stakeholders' expectations (G6), identified in the following papers: Pellegrino and Lodhia (2012), Haddock-Fraser & Tourelle, (2010).
- (c) To compare a GHG reporting framework with the real disclosures of companies (G8), identified by Pulles and Yang (2011).
- (d) To compare financial and environmental performances of firms (G9), identified in Gallego Alvarez et al. (2014).

4 Discussion and Conclusions

The literature review here performed was aimed at understanding the current state of research about sustainability and GHG disclosure, identifying gaps to be filled, and challenging scholars to increase their work on relevant areas for their future sustainability disclosure research.

The main limitation of this literature review is the small number of articles in the sample analyzed (19 articles). Usually, bibliometric analyses focus on a higher number of contributions.

The results show that this stream of research is on the increase. This situation is consistent with the growing importance that sustainability and polluting gas emissions are assuming in contemporary societies. Most of the publications falling within the sample were identified in journals having a primary focus on environmental aspects, such as the *Journal of Cleaner Production*, *Business Strategy and the Environment*, *Journal of Business Ethics*, *Climate Policy*, and *Environmental Science & Policy*. Many other publications within the sample were published in more typically accounting journals, such as *Accounting*, *Auditing & Accountability Journal*, *Australian Accounting Review*, and *European Accounting Review*.

Most of the citations within the sample refer to papers published in typical accounting journals (such as *Accounting*, *Auditing and Accountability Journal*, and *Accounting, Organizations and Society*), but also on the above-mentioned journals focusing primarily on environmental aspects, such as the *Journal of Business Ethics*, *Journal of Cleaner Production*, and *Business Strategy and the Environment*. These journals represent, therefore, the main reference for accounting scholars dealing with sustainability and GHG emissions disclosure.

Publications about sustainability and GHG emissions disclosure seem to be in an initial stage of development. A fairly small number of articles was identified through the literature review. Moreover, the number of publications per author within the sample was low: for the most productive author, only 3 articles were identified. This suggests a future increase in accounting scholars' research on the subject.

Focusing on the topics dealt with within the sample, empirical studies about sustainability and GHG disclosure mainly focus on private companies, and specifically on samples of companies from different geographical locations, different types of GHG emissions disclosures, and usually adopt multi-case, field, and panel study research methods. In most cases, they aim at examining/describe a certain type of disclosure and at explaining the reasons behind a certain type of GHG emissions disclosure.

Most authors in the sample are academics. No collaboration networks emerged with practitioner authors. Indeed, collaborations between academics and professionals would be particularly desirable in this field of study, as the respective skills could merge into a more in-depth analysis of the status quo, clarity and transparency of these disclosure tools, and the need for changes in sustainability and GHG emissions disclosure.

The review showed the main gaps in the literature to be filled. These gaps are partly cited by the same articles within the sample and partly emerge from the critical readings of the same. The papers analyzed mainly focused on case studies or panel studies in specific timeframes. Although they have provided relevant information, further research on these issues is desirable, since there is the need to broaden the knowledge about the following aspects also in other activity sectors, in other geographical locations, and in more recent timeframes:

- The quality/reliability of GHG emissions disclosure.
- The strategies behind the use of a certain type of disclosure.

- The ability of specific types of non-financial disclosure to answer the stakeholders' expectations.
- The identification of the effects of the emissions reduction (and the connected disclosure) on the firms' performance.
- Comparisons of firms' GHG emissions disclosures with specific GHG reporting frameworks.
- Comparisons of financial and environmental performances of firms.
- The identification and analysis of GHG emissions-related risk management and its concrete effects on firms' risks.
- The state and quality of GHG emissions management practices, including emissions management disclosure.

The involvement of various disciplines in sustainability and GHG emissions suggests the need for collaboration networks between academics and practitioners in the study of these aspects of GHG disclosures, also in an interdisciplinary context.

The main limitation of this chapter is the little space here devoted to the results of the qualitative analyses described in Sect. 4.4. This simple qualitative analysis was used to extract the deeper layers of meaning of the papers within the sample and to use them to interpret the current state (and the possible future evolution) of research knowledge about sustainability and GHG emissions disclosure. Future developments of this author team will be built upon a broader description of the articles' contents.

Author Contributions: Even if the chapter is the result of the conjoint work of all authors, Sects. 1, 3.3, 3.4, and 4 are to be attributed to C.G., Sects. 2, 3, 3.1, and 3.2 are to be attributed to P.P.

Appendix: The 19 Articles Within the Sample

	Authors	Title	Journal	Year	Volume
1	Liesen, Andrea; Hoepner, Andreas G.; Patten, Dennis M.; Figge, Frank	Does stakeholder pressure influence corporate GHG emissions reporting? Empirical evidence from Europe	Accounting Auditing & Accountability Journal	2015	28
2	Rankin, Michaela; Windsor, Carolyn; Wahyuni, Dina	An investigation of Voluntary Corporate Greenhouse Gas Emissions Reporting in a Market Governance System Australian Evidence	Accounting Auditing & Accountability Journal	2011	24
3	Solomon, Jill F.; Solomon, Aris; Norton, Simon D.; Joseph, Nathan L.	Private Climate Change Reporting: An Emerging Discourse of Risk and Opportunity?	ACCOUNTING Auditing & Accountability Journal	2011	24

(continued)

	Authors	Title	Journal	Year	Volume
4	Halkos, George; Skouloudis, Antonis	Exploring the Current Status and Key Determinants of Corporate Disclosure on Climate Change: Evidence from the Greek Business Sector	Environmental Science & Policy	2016	56
5	Depoers, Florence; Jeanjean, Thomas; Jerome, Tiphaine	Voluntary Disclosure of Greenhouse Gas Emissions: Contrasting the Carbon Disclosure Project and Corporate Reports	Journal of Business Ethics	2016	134
6	Talbot, David; Boiral, Olivier	GHG Reporting and Impression Management: An assessment of Sustainability Reports from the Energy Sector	Journal of Business Ethics	2018	147
7	Dilling, Petra F. A.; Harris, Peter	Reporting on Long-Term Value Creation by Canadian Companies: A Longitudinal Assessment	Journal of Cleaner Production	2018	191
8	Pellegrino, Catherine; Lodhia, Sumit	Climate Change Accounting and the Australian Mining Industry: Exploring the Links Between Corporate Disclosure and the Generation of Legitimacy	Journal of Cleaner Production	2012	36
9	Gallego Alvarez, Isabel	Impact of CO2 Emission Variation on Firm Performance	Business Strategy and the Environment	2012	21
10	Haddock-Fraser, Janet Elaine; Tourelle, Marielle	Corporate Motivations for Environmental Sustainable Development: Exploring the Role of Consumers in Stakeholder Engagement	Business Strategy and the Environment	2010	19
11	Brander, Matthew	Comparative Analysis of Attributional Corporate Greenhouse Gas Accounting, Consequential Life Cycle Assessment, and Project/Policy Level Accounting: A Bioenergy Case Study	Journal of Cleaner Production	2017	167

(continued)

	Authors	Title	Journal	Year	Volume
12	Tang, Samuel; Demeritt, David	Climate Change and Mandatory Carbon Reporting: Impacts on Business Process and Performance	Business Strategy and the Environment	2018	4
13	Gallego-Alvarez, Isabel; Garcia-Sanchez, Isabel M.; Da Silva Vieira, Cleber	Climate Change and Financial Performance in Times of Crisis	Business Strategy and the Environment	2014	6
14	Burritt, Roger L.; Schaltegger, Stefan; Zvezdov, Dimitar	Carbon Management Accounting: Explaining Practice in Leading German Companies	Australian Accounting Review	2011	21
15	Pulles, Tinus; Yang, Hongwei	GHG Emission Estimates for Road Transport in National GHG Inventories	Climate Policy	2011	11
16	Haque, Shamima; Deegan, Craig	Corporate Climate Change-Related Governance Practices and Related Disclosures: Evidence from Australia	Australian Accounting Review	2010	20
17	Kolk, Ans; Levy, David; Pinkse, Jonatan	Corporate Responses in an Emerging Climate Regime: The Institutionalization and Commensuration of Carbon Disclosure	European Accounting Review	2008	17
18	Prado-Lorenzo, Jose-Manuel; Rodriguez-Dominguez, Luis; Gallego-Alvarez, Isabel; Garcia-Sanchez, Isabel-Maria	Factors Influencing the Disclosure of Greenhouse Gas Emissions in Companies World-Wide	Management Decision	2009	47
19	Lozano, Rodrigo; Huisinigh, Don	Inter-linking Issues and Dimensions in Sustainability Reporting	Journal of Cleaner Production	2011	19

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Sustainability Reporting in Higher Education Institutions: Evidence from an Italian Case



Elena Gori, Alberto Romolini, Silvia Fissi, and Marco Contri

1 Introduction

Society is currently facing a number of economic, environmental and social problems (Rahdari & Anvary Rostamy, 2015), and private and public institutions worldwide are experiencing greater demands from stakeholders for greater accountability (Sassen & Azizi, 2018a). Against this backdrop, the design and implementation of sustainable development models and sustainability or social reports have become critical issues for all kinds of organisations (Leal Filho, 2018).

In response to stakeholders' expectations, companies are increasingly being held accountable for the economic, environmental and social impact of their activities (Hahn & Kühnen, 2013). As traditional financial reports do not provide full information on environmental and social performance, most firms have begun publishing sustainability reports voluntarily (Bebbington et al., 2014) as a way of attempting to ensure good dialogue with stakeholders (Manetti & Toccafondi, 2012). This is essential for every organisation (Suchman, 1995). Although sustainability practices vary between countries (Schaltegger et al., 2014), the Global Reporting Initiative (GRI) guidelines are the most commonly used reporting standard by companies (KPMG, 2020).

An increasing awareness of the need for a more sustainable society has also impacted higher education institutions and their reporting systems (Ceulemans et al., 2015). Universities can be seen as “small cities” due to their size, population and

E. Gori · S. Fissi (✉) · M. Contri

Department of Business and Economics, University of Firenze, Firenze, Italy

e-mail: elena.gori@unifi.it; silvia.fissi@unifi.it; marco.contri@phd.unipi.it

A. Romolini

Faculty of Economics, International Telematic University UNINETTUNO, Roma, Italy

e-mail: a.romolini@uninettunouniversity.net

activities, thereby having direct and indirect impacts on the economy, the environment and society (Ávila et al., 2017). In particular, they contribute to developing the skills of future decisionmakers and therefore play a critical role in promoting sustainability (An et al., 2020). Consequently, stakeholders (e.g., students, academic staff, industry and the State) require that universities are accountable for their actions (Adams, 2013) and that they disclose information on their activities in a transparent manner (Disterheft et al., 2015). However, universities are not required by law to disclose sustainability reporting issues (Larrán Jorge et al., 2019); for Leal Filho et al. (2018); the lack of mandatory regulations suggests that there is a long way to go before sustainability is achieved within the university sector.

Although sustainability is gaining importance within the higher education sector (Larrán Jorge et al., 2019), sustainability reporting is not a common practice and is in its infancy (Yalin et al., 2019), both in terms of the length of reports and their content (Sassen & Azizi, 2018a). Furthermore, there are neither sector-specific GRI guidelines nor any other sustainability reporting standards for universities (Moggi, 2019). Accordingly, while a good deal of research has explored sustainability reporting within companies (Dienes et al., 2016), there is little on its diffusion and its content in universities (Del Sordo et al., 2016).

In light of the above, the present study aims to take the research one step further by analysing the case of the University of Florence. This institution is one of the four Italian public universities (along with the Universities of Pisa, Turin and the Ca' Foscari of Venice) in the GRI database.¹ A focus on universities' adoption of GRI guidelines is justified because, while they are designed primarily for companies, they seem to be the most appropriate means of implementing a comprehensive and holistic integration of sustainability issues in university reporting (Yáñez et al., 2019). The study combines documentary analysis and qualitative data based on semi-structured interviews with key contributors to the university's sustainability reports.

The remainder of the study is organised as follows. Section 2 reviews the literature on sustainability reporting in the higher education sector. Section 3 explains the research methodology. Section 4 presents the empirical results of the analysis and discusses the findings. Finally, Sect. 5 draws some conclusions, points out the study's limitations, and makes recommendations for further research.

2 Literature Review

As was noted above, the need for a more sustainable world and greater accountability and transparency have become fundamental issues for all types of organisations (Schaltegger et al., 2014), including higher education institutions (An et al., 2020). It is worth noting that several national and international declarations have been

¹<http://database.globalreporting.org>, as of 8 January 2021.

developed to foster sustainability in the higher education sector over the last thirty years (Lozano et al., 2013). In particular, the Talloreis Declaration—which dates back to 1990, and is currently supported by more than 500 universities around the world—was the first global initiative of its kind. It was originally signed by university representatives who made a commitment to improve sustainability in higher education (Yáñez et al., 2019). Since then, many other declarations on sustainability in universities have been approved (Lozano et al., 2013), such as the United Nations Agenda 2030, which has highlighted the pivotal role of universities in advancing sustainable development (Koehn & Uitto, 2017).

Despite various attempts to synthesise the characteristics of a “sustainable university” (Hoover & Harder, 2015), there is no generally accepted definition (Madeira et al., 2011). Velazquez et al. (2006, p. 812) describe it in the following general way:

A higher educational institution, as a whole or as a part, that addresses, involves and promotes, on a regional or a global level, the minimization of negative environmental, economic, societal, and health effects generated in the use of their resources in order to fulfil its functions of teaching, research, outreach and partnership, and stewardship in ways to help society make the transition to sustainable lifestyles.

More precisely, the concept of “sustainability” within the university sector involves two different yet complementary dimensions. First, universities have both a direct and indirect impact on the economy, the environment and society. Accordingly, they are required to behave responsibly and to communicate their actions and performance in sustainable development in a transparent manner (Lozano et al., 2015). In recent years, there have been ongoing calls for more accountability and transparency with regard to the management of universities (Brusca et al., 2018). Table 1 shows some examples of sustainability information that might be considered relevant to university stakeholders.

Second, universities are responsible for the education of future generations. They have the opportunity to provide students with knowledge that will make them more sensitive towards environmental and social issues (Lozano, 2011). Indeed, these institutions are “shapers of the values of society” (Godemann et al., 2014, p. 218) and potential “social innovators” (Sassen et al., 2018, p. 1280), with the capacity to contribute to the promotion of sustainable development (Sassen & Azizi, 2018a). Accordingly, sustainable development principles are being integrated into educational programmes (Stough et al., 2018) and research activities (Lozano et al., 2015).

Universities therefore have a twofold mission: to increase their accountability and transparency and reduce the negative environmental and social impact of their operations (Alonso-Almeida et al., 2015); and to give students the knowledge they will need to create a more sustainable world (Botes et al., 2014).

In the last few decades, universities have had to cope with more competitive pressure due to globalisation, higher student numbers and a reduction in public funding (Lombardi et al., 2019). To face this challenging scenario, since the 1980s, there has been a movement towards the “corporatisation” of public universities (Ntim et al., 2017), which has involved the introduction of entrepreneurial concepts and tools for their more effective management (Küpper, 2013). This process is part

Table 1 Examples of important sustainability information for university stakeholders

Stakeholder group	Examples of important sustainability information	
Students	Teaching aspects	Qualifications of teaching staff, study environment, projects on skills management, consulting and support services, etc.
Researchers	Research aspects	Sustainability-related research programmes, research results exchange, qualification programmes, etc.
Other staff	Social aspects	Labour practices and decent work, reputation of the institution, etc.
Society	Environmental aspects	Impact on local communities, commitment to declarations on sustainability in higher education, etc.
Firms and institutions that are affected by the university	Economic aspects	Indirect economic impact within the region, impact on the supply chain, support of regional firms or professionals, cooperation with the private sector, etc.
External sponsors	Financial aspects	Research results, development of sustainable research practices, etc.
Funding bodies		Number of students in sustainable programmes, projects for development of the communities, certifications, etc.
Government	Legal aspects	Compliance with legal regulations, transparent reporting, tools to measure sustainable performance, etc.

Source: Adapted from Sassen and Azizi (2018b, p. 108)

of what has been termed the new public management (Hood, 1991, 1995). It has taken place in several countries, including Australia, Canada, Italy, Spain, the UK and the USA (Parker, 2011). These concepts and tools have been tailored to the specific needs of higher education institutions (Yáñez et al., 2019). In particular, sustainability reports have been seen as a useful way of documenting (Del Sordo et al., 2016) and communicating the sustainable use of public resources (Alonso-Almeida et al., 2015). In addition, they impact positively institutional image and reputation (Moggi, 2019). Fissi et al. (2021) point out that accountability and reporting are crucial dimensions of the universities' path towards sustainability.

Ongoing concerns about sustainability information disclosure in the higher education sector have resulted in an increasing number of universities publishing standalone sustainability reports in recent decades, from 1 in 2001 to 54 in 2017 (GRI, 2021).² As Fig. 1 shows, sustainability reporting among these institutions has followed an unstable but growing trend over time (Leal Filho et al., 2018). Most sustainability reports in the higher education sector have been issued by European

² As the report information for the last three years is still incomplete, the GRI database search filter is automatically disabled for 2018, 2019 and 2020.

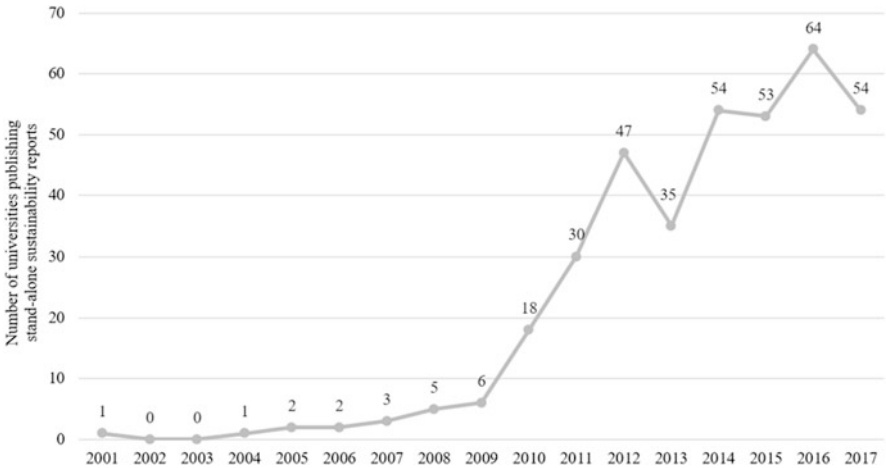


Fig. 1 Universities publishing sustainability reports (2001–2017) (Source: Own elaboration on GRI data)

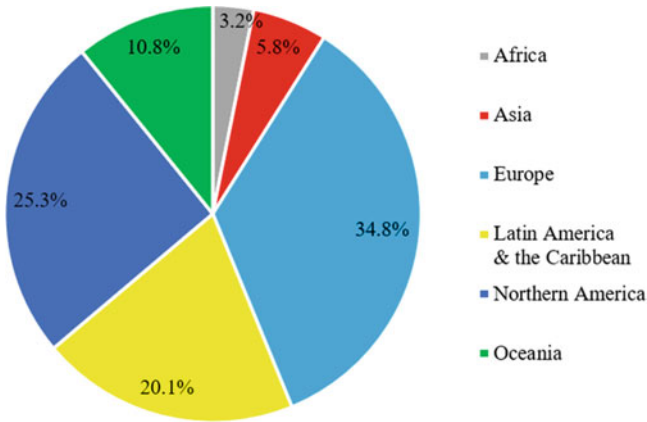


Fig. 2 Universities publishing sustainability reports (2001–2017, per region) (Source: Own elaboration on GRI data)

(34.8%), Northern American (25.3%) and Latin American and Caribbean (20.1%) universities (Fig. 2).

However, sustainability reporting within the university sector demonstrates a lack of specific items such as mandatory regulations on sustainability disclosure (Moggi, 2019), sector-specific guidelines (Alonso-Almeida et al., 2015), human and financial resources devoted to sustainability transition (Yuan et al., 2013), and senior managers (i.e., presidents and vice-chancellors) who are truly committed to sustainability issues (Adams, 2013). More generally, An et al. (2020) argue that a whole-institution approach is essential for “green” initiatives to be effective.

The literature on universities has focused on accountability (e.g., Coy et al., 2001), accounting systems (e.g., Modugno & Di Carlo, 2019), performance measurement (e.g., Dobija et al., 2019) and research evaluation systems (e.g., Watermeyer, 2014). There is less research on sustainability reporting (Yalin et al., 2019), especially stakeholder engagement (Klußmann et al., 2019) and the relationship between sustainability reporting and organisational change, and between sustainability reporting and sustainability management (Ceulemans et al., 2015). In addition, Del Sordo et al. (2016) point out that many studies have investigated what higher education institutions *should* report, but only a few have considered what universities *actually* report. Overall, the literature review reveals a paucity of studies investigating sustainability reporting among universities (Chatelain-Ponroy & Morin-Delerm, 2016), thus the calls for more empirical research on this topic (Sassen & Azizi, 2018b).

3 Research Method

Because the subject is a relatively novel one, the present study is exploratory in nature. We used a qualitative approach, which is appropriate when there is room for further investigation of a specific phenomenon (Creswell & Creswell, 2017). In particular, we adopted a case study methodology (Yin, 2018). This approach enables researchers to obtain more comprehensive information from real-world contexts (Lune & Berg, 2017).

The present study examines the University of Florence, which offers an interesting example of the processes and outcomes of sustainability reporting within the higher education sector. The rationale for our choice was twofold. First, the university is one of the four Italian State universities (the others being Pisa, Turin and the Ca' Foscari University of Venice) that publish sustainability reports included in the GRI database.³ As we have already noted, the focus on GRI guidelines is justified on the grounds that they appear to be the most appropriate tool for integrating sustainability issues into university reports (Yáñez et al., 2019), although there are no specific standards for this type of institution (Moggi, 2019). Second, the University of Florence is an interesting case study as, in the preparation of sustainability reports, it takes into consideration not only the GRI guidelines but also the principles and standard for social reporting published by the National Association for Scientific Research on Social Reporting (GBS). In particular, GBS released both a general standard directed to all organisations that aim at publishing social reports (GBS, 2001, updated in 2013) and a research document specifically focused on social reporting at universities (GBS, 2008). Last but not least, Florence is the third-ranked Italian university (after the University of Padua and Sapienza of Roma) in the “University Impact Ranking 2020”, which is drawn up by the international

³<http://database.globalreporting.org>, as of 8 January 2021.

weekly magazine *Times Higher Education*, and is also a member of the European School of Sustainability Science and Research (ESSSR)⁴; the Italian Sustainable University Network (RUS)⁵ and the Italian Alliance for Sustainable Development (ASviS).⁶ Therefore, over the last few years, it has been paying increasing attention to green issues and sustainability reporting (Fissi et al., 2021; Gori et al., 2020).

To collect data, we performed semi-structured interviews with key contributors to the university's sustainability reports. This type of interview is particularly suitable for exploratory studies where the authors have only a general initial idea of the subject (Lune & Berg, 2017). Secondary sources (namely, the university website and sustainability reports) were used to supplement information obtained from the interviews and to increase the validity of the findings through triangulation of the data collection (Denzin & Lincoln, 2018).

4 Findings

The University of Florence (hereinafter, simply “the university”) is a traditional institution founded in 1321. Officially recognised as a “university” in 1924, the University counts 1800 lecturers and academics, 1600 administrative staff, and more than 1600 research assistants and doctoral students. The University offers educational programmes at different levels, with over 130 courses in 10 schools. Moreover, approximately 51,000 national and international students are currently enrolled. As shown by Fissi et al. (2021), it recently started its journey towards creating a model of “green university”.

The University first drew up a social report in 2006 and began to issue regular sustainability reports starting from 2016. The latest was published in 2019 (University of Florence, 2019a). It is organised into six main sections: “Identity, strategies and organizational structure”; “Aware University”; “The relationship with

⁴ESSSR, which was launched at the end of 2018, is an inter-university consortium comprising European higher education institutions that share an interest in sustainability issues and sustainable development. The mission of ESSSR is to provide a framework upon which teaching and research within the remit of sustainability science may be developed at European universities, by means of joint courses, research projects, PhD training and scientific publications.

⁵Established in 2015, RUS was the first attempt to coordinate Italian universities committed to environmental sustainability and social responsibility. Its aim is to foster Sustainable Development Goals amongst Italian higher education institutions and to increase the value of the Italian experience at an international level.

⁶ASviS, established in 2016, brings together over 220 member organisations. It comprises not only public and private universities and research centres but also associations of local public administrations, associations of stakeholders working in the fields of culture and information, associations representing social partners (businesses, trades union and third sector associations), etc. Its aim is to raise awareness in Italian society and amongst economic stakeholders and institutions of the importance of the 2030 Agenda for Sustainable Development, and to mobilise them to pursue the United Nations' Sustainable Development Goals.

stakeholders”; “Activities and results”; “Sustainable University” and “Reclassification of the value-added income statement”. It also contains a letter by the rector, a methodological note and GRI reconciliation tables.

The social report was published after the concept of “sustainability” had already been incorporated into the University’s strategies. Indeed, a “sustainable university” that aims to promote sustainable development must first develop a holistic approach to sustainability and revise its mission, vision and policies, accordingly (Velazquez et al., 2006), developing an institutional framework that makes the intentions of the university clear about sustainability as a whole (Fissi et al., 2021). Only later, disclosing analytical information on green initiatives implemented becomes needed (Yáñez et al., 2019), with sustainability report being proper and meaningful tools for communicating the university’s efforts to internal and external stakeholders and engaging them in the green path (Sassen & Azizi, 2018b). The use of the social report as a strategic planning tool was an ambitious goal and it has not yet been fully realised; however, the technicalities of traditional accounting reports meant that the university needed a more flexible and accessible instrument to disseminate information about green activities:

Over the last years, the University of Florence has implemented several initiatives in the sustainability field, ranging from waste management to sustainability mobility, from the development of courses and curricula focused on sustainability matters to different research projects related to green issues. All these sustainability initiatives were identified and planned in the Strategic Plan of the University. Accordingly, it seemed necessary to have a specific report in which all initiatives concerning sustainability were reported. At the same time, it was important to adopt a report easily understandable by all stakeholders. Indeed, traditional financial statements are usually accessible to practitioners, investors, market analysts, etc., not to “ordinary” people.

The strategic plan (University of Florence, 2019b) also contains explicit references to Sustainable Development Goals (SDGs), which “constitute a big occasion for university to restructure its strategy and bring up-to-date the education system to respond to the current societal challenges” (Sonetti & Lombardi, 2020, p. 248). Coherently, the social report also discusses the results that the University has achieved in this field. Therefore, the University seems aware of direct and indirect impacts the higher education institutions have on the economy, the environment and society (Lozano et al., 2015), as well as of the need to increase accountability and transparency on sustainability initiatives (Brusca et al., 2018).

As mentioned in the 2019–2021 Strategic Plan, the University of Florence aims to actively contribute to the achievement of the 17 SDGs promoted by the United Nations. To do so, the Social Report, starting from its 2018 edition, introduces some considerations around its contribution, describing the goals—and to what extent—that have been met by the University through its green initiatives. While a preliminary section briefly summarises said contribution against each objective, within each section of the report there is detailed information describing SDGs achieved and specification actions implemented by the University. All in all, it can be said that almost all the SDGs have been incorporated in the Strategic Plan and, thus, pursued by the University of Florence. The commitment towards disclosing the contribution to SDGs will be deepened and further developed in the next editions of the report.

Nonetheless, it is worth noting that, at the moment, the University neither uses the specific indicators proposed by the UN nor has developed its own set of indicators to measure progress towards reaching SDGs.

The University organised a large working group to draft the report, in the belief that the participation of the institutional staff was fundamental for the continuity of the social reporting process. Precisely in this sense, scholars strongly support the need to create a sense of identity and promote collaboration among all university stakeholders (which also include faculty and administrative staff), which universities must make aware of the importance of their activities in the institution's path to sustainability (Fissi et al., 2021; Sassen & Azizi, 2018b).

For social reporting to be effective, a bottom-up approach is essential. Accordingly, each section of the report is written by those who are actually in charge of the activities that they are to report on.

However, such groups are difficult to coordinate, especially with regard to time scales. The university aimed to create a participatory internal drafting process that involved the largest possible number of internal stakeholders. This led to the identification of new reporting issues and sound sustainability practices in the management of the University. For example, the water dispenser initiative and an online portal (which citizens could use to ask a scientific team question about sustainability) were born out of the social reporting group.

Not all external stakeholder groups have become involved. Nonetheless, the University is committed to creating an additional team that is dedicated to public engagement. The social report describes the process by which this is being achieved. At the same time, it provides information about the University's efforts to involve citizens (e.g., by Sunday meetings and answering their queries). The university has introduced an online form that visitors can use to relay their thoughts and impressions, and offer advice for improvement.

The drafting process starts once the annual report has been completed, which is at the beginning of May. In the last three years—2017, 2018 and 2019—it took until the end of the year, but it is hoped that it will be finished by the end of July in the future.

With reference to the reporting models, the methodological section of the document follows the GRI and the Study Group for the Social Report (GBS, 2001) using the adaptation of the specific guidelines for universities' social reporting (2008).

The University of Florence adopted the GRI Standards in order to facilitate comparability, at both national and international level, and to follow good practices in sustainability reporting (for instance, the University of Bologna). On the other hand, the choice to refer to the GBS comes from the desire to maintain a link with the traditional accounting reporting; this led us to include a Value-Added Income Statement in the social report which shows the value created and distributed to all stakeholders.

The adoption of the GRI has given rise to some operational issues because of the need to adapt its standards to the university context. As was noted in the Introduction section, there are neither sector-specific GRI guidelines nor any other sustainability reporting standards for universities (Moggi, 2019).

Furthermore, as already noted, the University of Florence is part of the Network of Universities for Sustainable Development, which was established to promote the Global Agenda for Sustainable Development and its related 17 SDGs, which are divided into 169 targets. The aim is to meet them by 2030. Members of the network (which include the University of Bologna and the Polytechnic of Turin) are able to report on their progress using specific indicators (which are part of the GRI standards).

The social report is not currently submitted to external auditors who could ensure the reliability of the information disclosed. Before this is done, there has to be continuity in the reporting; it is crucial that the people involved in the drafting process truly believe in what they are doing and that they do not perceive the report as just another administrative chore. The social reporting should become an element of the performance evaluation system and involve managerial goals, and monetary incentives should be provided.

So, it is not abandoned when the governance of the university changes, the social report should not be associated with specific individuals. In this way, it could truly become a document of the planning and control system, and only then should the university seek third party assurance.

The University's social reporting process has begun. In the future, it could (or should) focus on specific aspects for improvement, such as external stakeholder engagement, and aim to become the country's top social reporting higher education institution.

5 Conclusions

Scholars and practitioners have been paying closer attention to sustainability reporting in the higher education sector (An et al., 2020; Ceulemans et al., 2015; Larrán Jorge et al., 2019). Despite the importance of the topic, more research is needed on universities' reporting practices, their assurance, and the role of stakeholder engagement (Adams, 2013; Yáñez et al., 2019). To understand what universities actually report (Del Sordo et al., 2016), the present study investigated the case of the University of Florence. The institution started its social reporting journey when it decided to introduce sustainability as a policy objective. It also wanted to engage stakeholders more. Although its goals in this area have not yet been fully achieved after more than three sequential years of social reporting, it has at least managed to incorporate internal stakeholders. In fact, we have observed that the main challenge for higher institutions is bringing external stakeholders on board. This is a task that involves years of effort and the use of all available communication tools, from the traditional (e.g., websites and newsletters) to the innovative (e.g., social media).

The social report emerged after several years' incubation. The university adopted the GRI standards to be compliant with the international reporting standards, and

successfully embedded the SDGs. The report now stands as one of the best examples of its kind in the Italian higher education system.

One of the main problems with social reports is how to embed them in the institution's accounting system. Moreover, it is essential that universities truly committed to green issues publish their efforts on a systematic and regular basis. The social report should become a component of the management's performance evaluation and planning and control systems, independent of the influence of specific individuals.

The present study has a number of limitations that present opportunities for further research. For example, because it is based around a single case study, the findings are not generalisable. Future researchers might investigate the subject with reference to other state and non-state universities. It would be interesting to compare the experience of the University of Florence with that of other Italian and European universities involved in sustainability reporting using quantitative methods.

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Part III
Intangibles and Intellectual Capital
Disclosure

Theoretical Aspects of Intangibles and Intellectual Capital Disclosure Through the Main Frameworks of Integrated Reporting and Non-Financial Information



Maria Serena Chiucchi and Marco Giuliani

1 Introduction

Intellectual capital (IC) has been debated for decades from theoretical and practical perspectives. By analyzing the evolution of the IC discourse, it is possible to notice that both scholars and practitioners have proposed a plethora of IC concepts (Chaminade & Roberts, 2003; Mouritsen et al., 2001; Stewart, 1997) and reporting frameworks (Andriessen, 2004; Sveiby, 2010) none of which can be considered as generally accepted. This situation has implied that each company has defined its own specific IC reporting agenda according to its specific purposes (Abeysekera, 2008; Sveiby, 2010).

There are two different perspectives on IC (Brännström et al., 2009; Brännström & Giuliani, 2009; Roslender & Fincham, 2001). The first is focused on IC management and the second is on IC disclosure. In the first, the underlying idea is that measuring and reporting IC enables the firm to manage the resources and activities and to deliver sustainable competitive advantage. In the second, the disclosure of IC can lead to more efficient capital markets and company valuation.

Despite the various benefits attributed ex ante, the implementation of IC reporting frameworks is not widespread in practice (Chiucchi et al., 2016; Dumay, 2013; Giuliani et al., 2016). More specifically, early adopters, such as Skandia, have abandoned this practice, as well as several other companies, which have given up their own IC reporting project (Chiucchi et al., 2016, 2018; Chiucchi & Giuliani, 2017; Giuliani & Chiucchi, 2019; Nielsen et al., 2017; Schaper, 2016; Tee Jeok Inn et al., 2015).

M. S. Chiucchi · M. Giuliani (✉)

Department of Management, Università Politecnica delle Marche, Ancona, Italy
e-mail: m.s.chiucchi@univpm.it; m.giuliani@univpm.it

Recently, the issues related to intangibles have moved from the IC domain to other domains related to non-financial disclosure, such as the sustainability reporting one and the Integrated Reporting (IR) one. Here, intangibles continue to play a primary role but instead of being approached on a stand-alone basis they are approached together with the other business “capitals” such as the financial, the physical, or the natural one (de Villiers & Sharma, 2017).

This chapter aims to analyze the theoretical aspects of intangibles and intellectual capital disclosure through the main frameworks of integrated reporting and non-financial information.

The structure of the chapter is as follows. In the next section, the main IC reporting frameworks will be presented. Then, an analysis of the possibility of disclosing IC in a GRI sustainability reporting framework will be examined. Afterward, the points of contact between IC reporting and IR will be discussed. Finally, some conclusions will be proposed.

2 Intellectual Capital Reporting

Concerning the IC concept, several definitions can be remembered. By way of example, it is possible to find IC defined as the system composed of all of the firm’s intangibles (Meritum, 2002), or as the sum of everything everybody in a company knows that gives it a competitive edge (Stewart, 1997), or as a combination of knowledge flows (Mouritsen et al., 2001) or connections between intangible resources (Chaminade & Roberts, 2003). Moreover, it can be studied by focusing on its resources (static approach) or by highlighting the activities carried out to create and develop it (dynamic approach) (Meritum, 2002).

IC is typically understood to consist of human capital, which is creative, organizational capital, which consists of the structured knowledge of an organization, including software, systems, strategy, and culture, and relational capital, which draws and develops knowledge from suppliers, customers, and other stakeholders. Some argue that value is created when connections are developed among these elements and with other organizational resources (Edvinsson & Malone, 1997; Mouritsen & Larsen, 2005; Stewart, 1997).

The rise of the awareness of the relevance of intangibles and IC and, consequently, the identification of a “new” accounting object has brought forward the idea that there is the need to develop new reporting methods and tools (Stewart, 1997). Scholars and practitioners have adopted two different (although related) perspectives on IC reporting (Brännström et al., 2009).

The first perspective focuses on IC disclosure and on measuring the value of IC and the other takes as its starting point the management of IC. The argument for the value measurement perspective springs from the fact that the capital market has valued the firms’ equity (much) higher than the book value (Edvinsson & Malone, 1997; Sveiby, 1997) and that transparency of organizational value drivers lead to a better valuation of companies by the capital market (Cuozzo et al., 2017; Dumay,

2016; Schaper et al., 2017). Here, IC research focuses on visualizing the value already generated by an organization; the assumption is that the main users of this kind of IC report are the external stakeholders (Boeker et al., 2005; de Villiers & Sharma, 2017; Wee & Chua, 2016).

The second perspective focuses on IC management and on how firms create value (DATI, 2000; Kaplan & Norton, 1992). The logic of this perspective is that the recognition, measurement, and reporting of IC enable the firm to manage its resources and activities and to deliver sustainable competitive advantage; thus, the main users of this kind of IC report are supposed to be the managers of a firm (Giuliani, 2016; Giuliani et al., 2016; Mouritsen & Larsen, 2005; Nielsen et al., 2017; Tayles et al., 2007).

In summary, the reasons for reporting IC can be related to the management of this resource and of the related value creation process or to the disclosure of IC to make the “invisible” value visible for the stakeholders. This chapter investigates the first perspective, i.e., the IC disclosure one.

According to these two approaches, scholars and practitioners have proposed a plethora of IC accounting systems, which differ from one another by hypotheses, objects, and formulas considered (Andriessen, 2004; Guthrie et al., 2012; Sveiby, 2010). To give an idea of the magnitude of the phenomenon, Andriessen (2004) identifies 25 IC measurement systems; Ricceri and Guthrie (2009) examine 36 IC frameworks; Abhayawansa (2014) analyses 20 models for disclosure purposes; Sveiby (2010) identifies 42 IC accounting models. These models can be distinguished between the stock-based models and flow-based models.

The stock models have the ambition to “make invisible visible,” i.e., to report the value of IC and its components. Thus, the idea is to represent the “size” of IC to “integrate” the financial capital emerging from the balance sheet. These models have characterized the first stage of the IC discourse (Guthrie et al., 2012), i.e., that aimed to raise IC awareness, and they strongly rely on the IC tri-part model (human capital, organizational capital, and relational capital). In this category can be included, for example, the Skandia Navigator, the Intangible Asset Monitor, the IC Process Model, and the IC index. These models tend to be developed moving from practice to theory, i.e., developed in a specific organizational context and then (more or less) generalized.

The reporting models based on the flow approach aim to contextualize knowledge resources and to focus on knowledge flows or IC dynamics. The focus is on the value creation process and on the activities carried out to create and develop IC. Here, the idea is that IC measurement should enable learning processes (managerial perspective) and make it possible for the stakeholders to realize the organizational value creation process. In this category can be included, for example, the Intellectual Capital Statement (Danish Guidelines), the Meritum model, the Nordika project, and the Frame model.

Table 1 summarizes the main IC frameworks that can be adopted to prepare IC reports or IC statements (Table 1).

IC reports are generally complex forms of reporting which combine numbers, narration, and visualization. They are stand-alone reports prepared voluntarily that

Table 1 IC reporting frameworks

Name	Key focus
ARC IC Report	Structured presentation of goals, potentials, processes, and resuming intangible and tangible results.
Danish Guidelines	Formulation of self-reporting intellectual capital guidelines. Portfolio of, investments in, and effects of knowledge resources. Relates practices and purposes of IC resources.
MERITUM	Differences between intangible resources and intangible activities.
IC-dVAL®	Performance indexes and value of IC.
Wissensbilanz	Guideline on the preparation of an IC Statement.
IC-Rating	Model for measuring and describing non-financial assets that are not reported or described in traditional financial statements.
Skandia navigator	Reflects four key dimensions of a business: financial focus, customer focus, process focus, and renewal and development focus.
Intangible asset monitor	Monitors three overall categories: customers (external structure), people (competence), and organization (internal structure). Under each of these interdependent categories, the three key areas of growth/renewal, efficiency, and stability are tracked, each with its own performance indicators.
Intellectus model	Facilitates the R + D decision-making process by bringing into focus a series of key factors that directly influence the results of an organization's innovation.
ICV calculation	A complete set of 77 formulas that can be applied for a comprehensive calculation of the IC Value of an enterprise.
Japanese Guidelines for Disclosure of IA Based Management	Describe the outline of a voluntary intellectual assets-based management report that explains the probability of future cash flow by using intellectual assets as sources of future profits as well as historical performance.
Australian: Guiding Principles on Extended Performance Management	Framework for structuring an extended performance account that supplements traditional financial statements.

try to offer a complete picture of IC and its role in the value creation process. From a disclosure perspective, IC reporting can be considered as tool useful to complement financial reports as it provides insight into important resources that are not found on the balance sheet, such as knowledge, relationships, and human resources to provide information about the potential of a firm.

IC reports tend to be prepared following a multiple-step approach. The first step is the definition of the organizational strategy. Then, the strategic intangibles, i.e., the ones that are crucial in the organizational value creation process and that play a relevant role in the company's business model, are identified. The third step consists

in the identification of the linkages between intangibles and financial capital. In this step, the design of a causal-value creation map can be useful. Accordingly, a panel of indicators should be designed. The indicators should be focused both on the performance of the intangibles and on the activities carried out to create or develop them. The fifth step consists of the implementation of the panel of indicators. Here it is important to consider not only one period but, at least, two periods to identify a trend. The last step is represented by IC reporting. In the report, the IC indicators should be systematized and analyzed to make the value creation process visible and understandable.

Recent studies have shown that IC reports have been dismissed by several companies.

The reasons can be related to the technical and procedural aspects of IC reporting, i.e., the what and the how of IC measurement, and to those who measure and manage IC, i.e., are engaged with IC and involved in the process of production and use of IC reports. For example, aspects of IC reporting that could have contributed to the demise of IC reporting can be the complexity of the data collection and calculation processes (Catasús & Gröjer, 2006; Demartini & Paoloni, 2013), the fact that IC reporting is not always a top priority for companies (Tee Jeok Inn et al., 2015) and that IC measures can rapidly become obsolete (Chiucchi, 2013; Dumay & Rooney, 2011) or may be perceived as “provocative” (Vaivio, 2004), or as “fragile” (Chiucchi & Montemari, 2016). The hindrance may also be due to other technical aspects, such as the difficulties related to the interpretation of the IC report or the lack of benchmarks or the problems in understanding the connections among IC and the other resources or between IC performance and financial performance (Chiucchi & Montemari, 2016; De Santis & Giuliani, 2013; Giuliani et al., 2016; Mårtensson, 2009). Other aspects that have to be considered are the “lock-in” or “accountingization” phenomenon (Chaminade & Roberts, 2003; Chiucchi & Dumay, 2015) and the diffusion of grand (misleading) theories (Dumay, 2012). Finally, changes in the IC team (i.e., the project leader, project sponsor, and external consultant) can lead to abandoning the IC reporting practice (Giuliani & Chiucchi, 2019).

As it will be analyzed in the following paragraphs, even if IC reporting (on a stand-alone basis) is disappearing, IC measurements tend to survive over time, as components of other types of reports and disclosure tools (Chiucchi et al., 2018).

3 From IC Reporting to GRI Reporting

Nielsen et al. (2017) also argue that changes in the business environment, external regulation pressures for sustainability disclosures, the global financial crisis, and perhaps even the advent of new guidelines (e.g., GRI guidelines and IIRC guidelines) can have led to a dimming of interest in the IC reporting initiative. Besides, the perception of several managers that IC reporting is “something similar” to sustainability reporting (Chiucchi et al., 2018) and that several IC indicators are also

relevant for CSR and sustainability reporting (Cinquini et al., 2012; Pedrini, 2007) have led to the fact that sustainability reports have often phagocytized the IC reports. Among the sustainability reporting frameworks, the GRI Sustainability Reporting guidelines are the most applied in practice (Adams & Narayanan, 2007; Tschopp & Nastanski, 2014).

The GRI is an international independent organization that aims to be “the global standard setter for impact reporting.” Thus, it helps organizations being transparent and responsible for their impacts to create a sustainable future. The GRI, as a network-based organization, has developed its sustainability reporting framework in collaboration with stakeholders from business, government, labor, and professional groups and with the ambition to create a “common language” for organizations. The GRI framework encourages managers and investors to take a long-term perspective and provides reliable and relevant information to a range of stakeholders about the economic, environmental, and social dimensions of an organization such as, for instance, the ones related to climate change, human rights, and corruption.

Some would argue that IC reporting and sustainability reporting have compatible and amenable characteristics. This makes their integration or convergence feasible and sensible. To investigate this degree of integration, Pedrini (2007) analyzed common elements between human capital accounting and the GRI Guidelines, focusing on which indicators for employees (proposed in GRI Guidelines) were used frequently in 20 international best practices for IC reports. The author found a large overlap of indicators around three issues: description of human capital, reporting on diversity and opportunity, and measurement of the quality and intensity of training. He also argues that “corporate responsibility practices oriented toward improving intangible resources result in better financial performance.” According to Wasiluk (2013), there is an overlap between sustainability and IC because “both highlight how organizations need to develop new understandings of how to create and exploit their nonfinancial resources.” Cordazzo (2005) also conducted an empirical analysis of environmental and social reports in Italy and analyzed whether some elements of an IC statement are present in environmental and social reports. She found a significant overlapping of information between these two types of documents and a common relevant set of information between the environmental and social reports and the IC statement. Del Bello (2006) proposes different levels of integration between IC reports and sustainability reports: a weak integration process generating a set of common indicators between the two types of reports; and a strong integration process between the two types of reports generating a new, single report. Oliveira et al. (2010) argue that IC reporting guidelines and GRI sustainability reporting guidelines have some similarities in terms of purpose, included elements, target groups, and expected benefits. Polo and Vázquez (2008), in turn, propose to merge the two reports for the presence of similarities in terms of construction methodology, frameworks, purposes, considered items, and stakeholders’ use. In addition, the integration would allow to emphasize the connections between different types of capital, such as the intangible one, the environmental one, and the social one (Cinquini et al., 2012; de Villiers & Sharma, 2017).

Cinquini et al. (2012), finally, show that sustainability reports provide a set of IC information that could be used by stakeholders to acquire useful information on firm

activities and performance. They also highlight that sustainability reports are currently scarcely read by company stakeholders (employees, customers, and financial market agents) since they are not considered reliable documents.

In conclusion, the GRI reporting is designed to disclose the economic, social, and environmental performance of a firm to provide the stakeholders with valuable information. From this point of view, as it has been previously highlighted, there are several elements and information in common with IC reporting. Considering the demise of IC reporting as a stand-alone practice and the relevance of IC and intangibles within the organizational value creation process, the possibility to integrate IC reporting and GRI reporting should be considered and exploited. In this sense, within the room left by the GRI framework, an idea can be improving the GRI reporting by integrating the dynamic nature of IC by emphasizing information on intangible resources and activities.

4 From IC Reporting to Integrated Reporting

<IR> Integrated reporting is meant to integrate the reporting of financial and non-financial information in a concise report that is able “to explain to providers of financial capital how an organization creates value over time” and to “improve the quality of information available to providers of financial capital to enable a more efficient and productive allocation of capital” (IIRC, 2013). <IR> considers six capitals as relevant for the value creation process: financial, manufactured, intellectual, human, social, and relationship, and natural capitals. It also offers information regarding the following issues: “organizational overview and external environment, governance, business model, risk and opportunities, strategy and resource allocation, performance, outlook and basis of preparation and presentation” (IIRC, 2013). An <IR> describes key internal and external outcomes, both the positive and the negative ones (IIRC, 2013). Summarizing, the <IR> should offer a complete picture of the value creation process of a company, considering both the consumed resources (financial, environmental, social, intangible, etc.) and the impact the organization has on the different capitals (financial, manufactured, intellectual, etc.). In this way, <IR> should be useful for both internal (e.g. manager) and external (e.g. investors and analysts) stakeholders.

As mentioned, the <IR> framework includes six capitals; three of them can be matched with IC's three capitals: human capital with human capital; social and relational capital with relational capital; and IC with structural capital (Dumay et al., 2016). This means that although IC reporting in the form of IC statements has been abandoned by most of the adopters, IC measurements have survived and have been included into the <IR> with a very similar perspective, i.e., the value creation one (Abhayawansa et al., 2019). In this line, Stacchezzini et al. (2019) pinpoint that <IR> and integrated thinking both facilitate the IC value creation management and provides a procedure for scrutinizing what counts as IC.

Several studies have investigated the relationships between IC and <IR>. Camodeca et al. (2019) investigate a sample of pharmaceutical firms and they

argue that only firms with sufficient IC have decided to adopt <IR>, resulting in rational investors' willingness to pay more only for the forecasted earnings of integrated reporters. Terblanche and De Villiers (2019) analyze a sample of companies listed on the Johannesburg Stock Exchange, where companies are required to prepare an integrated report or explain reasons for not doing so. They show that companies preparing a <IR> disclose more IC information, in particular information on human capital, but companies with cross-listings do not disclose more IC. Beretta et al. (2019) examine the <IR> published by some European listed firms. The authors argue that IC disclosures in <IR> are mainly discursive, positively toned and backward looking, and focused on human capital. They also show a positive association between optimistic tone in companies' IC disclosures in <IR> and non-financial performance, measured in terms of environmental, social, and governance aspects. Casonato et al. (2019) also explore the use of <IR> for impression management purposes. The authors highlight that the <IR> paradigm is being co-opted by impression management strategies to improve legitimacy through trust, reputation, and social capital. Dumay et al. (2019) examine the gap between IC/IR reporting and managers' behavior to explore how the key features from IC and integrated reporting can be combined to develop an extended model for companies to comply with EU Directive 2014/95/EU and increase trust in corporate disclosures and reports. The authors demonstrate that companies can apply the six capitals model to comply with the EU Directive 2014/95/EU and extend the traditional tripartite model of IC. In fact, they argue that the six capitals model fits well with the social and environmental themes required by the EU Directive and can make visible the way resources (both tangible and intangible) are used, consumed and combined to create value. Cuzzo et al. (2017) highlight the "contrast" between the academic definition of IC (as composed of human capital, structural capital, and relational capital) and the one provided by the IIRC (2013) where IC is considered as a synonym of intellectual property.

In summary, <IR> is centered on long-term sustainable value creation and thus, it considers IC in terms of intellectual capital, social and relational capital, and human capital as a source of organizational value. Consequently, <IR> can be considered a new way to frame and disclose IC, no more on a stand-alone basis but on a more systemic manner.

5 Concluding Remarks

This chapter aimed to analyze the theoretical aspects of intangibles and intellectual capital disclosure through the main frameworks of integrated reporting and non-financial information.

IC can be mainly disclosed on a stand-alone basis, preparing IC reports or IC statements, or as a part of sustainability or integrated reports. Several studies have shown that IC reporting has been dismissed by most of its adopters, nevertheless, the IC discourse has become part of the sustainability discourse or of the <IR> one. As a matter of fact, even if the aforementioned frameworks present some differences

they all share some common grounds that is the focus on intangibles as levers to create value and on the long-term sustainable value creation process. In other words, after having experienced the rise and fall of the IC discourse there is now the chance to see a new rise of the IC discourse even if in a different frame and in a wider and more integrated perspective, i.e., in combination with all other company resources (capitals). Thus, this integrated and holistic approach and this particular focus on the long-term value creation process can be viewed as a possible way to explicit the linkages between IC and the other organizational resources and the ones between IC performance and the firm overall performance. In this light, the inclusion of the IC discourse in the GRI and IR ones can be seen as an opportunity for evolving the IC reporting frameworks.

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Non-financial Information About Intangibles and CSR in the Context of Mandated Non-financial Disclosure: A Configurational Approach for Italian Listed Companies



Francesco Paolone, Francesco De Luca, Armando Della Porta,
and Rosa Lombardi

1 Introduction

Currently, various stakeholders are pressuring companies to engage in social and environmental responsibility. Consequently, they must concentrate much effort on non-financial information (NFI) rather than financial information (Campura et al., 2020; Nekhili et al., 2017; Grougiou et al., 2016; Perks et al., 2013). Companies also run activities that could affect climate change issues and may harm the surrounding environment and society. Therefore, investors and other stakeholders are paying growing attention to risk-related disclosure (RDQ), as well as the connected policies, referring to NFI on intangibles and Intellectual Capital (IC) that could support facing risky scenarios (De Luca et al., 2020; Carnabuci, 2011).

In doing so, companies must disclose NFI to diverse stakeholders through different channels. Within these, the corporate social responsibility (CSR) issue has played a crucial role in addressing informational content regarding environmental and social performance (Dahlsrud, 2008; Gray et al., 2006) along with IC and

F. Paolone
Mercatorum University, Roma, Italy
e-mail: francesco.paolone@unimercatorum.it

F. De Luca (✉) · A. Della Porta
Department of Management and Business Administration, G. d'Annunzio University of Chieti-Pescara, Pescara, Italy
e-mail: francesco.deluca@unich.it; armando.dellaporta@unich.it

R. Lombardi
Department of Law and Economics of Productive Activities, Sapienza University of Rome, Roma, Italy
e-mail: rosa.lombardi@uniroma1.it

intangibles disclosure (Barão & Silva, 2014; Bontis et al., 2000). The annual report is not merely a financial reporting document, but should be strengthened with specific NFI (Arvidsson, 2011). This has led to a focus on information deployment and how NFI is needed to capture the decision relevance of strategic options alongside financial information (Chenhall, 2005).

Several studies in the literature (De Luca, 2020; Fiandrino, 2019; Costa & Agostini, 2016; Fernández et al., 2011) have investigated the role of mandatory and voluntary disclosure and companies' financial performance (represented by increased or decreased cash flows, market values, net income) to investigate whether there could be a relationship among them, and if so, what kind. Previous studies showed a conflict: some studies indicated a significant positive relationship, while others found it to be insignificant. For example, some documented an overall positive market reaction for firms exhibiting strong non-financial performance (Grewal et al., 2018); a firm's environmental disclosures also influence how its other stakeholders (beyond financial) perceive its legitimacy (Cormier & Magnan, 2015).

Over the past decades, scholars have widely investigated the relationship between NFI (or CSR issues) and financial performance (Aureli et al., 2020; Flammer, 2015; McWilliams & Siegel, 2000; Cochran & Wood, 1984; Alexander & Buchholz, 1978) even if results are contradictory. Some scholars identified a positive relationship (Erhemjamts et al., 2013; Rodgers et al., 2013; Burnett & Hansen, 2008; Al-Tuwaijri et al., 2004; Waddock & Graves, 1997). Others found a negative relationship (Peng & Yang, 2014; Baird et al., 2012), and still others found no relationship at all (Soana, 2011; Sun et al., 2010; McWilliams & Siegel, 2000; Aupperle et al., 1985; Alexander & Buchholz, 1978). Additionally, some scholars have discovered a U-shaped/inverted relationship (Barnett & Salomon, 2012; Bowman & Haire, 1975) while another study indicated a positive association between IC and non-financial disclosure quality (De Luca et al., 2020). These inconclusive results may be due to differences in socioeconomic and political environments among countries, organizational structures, the construction of the informational items in disclosure indices, and sampling error (Ahmed & Courtis, 1999).

This chapter has a twofold purpose for contributing to the main literature. First, it aims to empirically verify how different NFI configurations/combinations could lead to successful performance. Much previous research is built on the assumption that each characteristic acts independently. We suggest that financial performance depends on a complex configuration of NFI that also include IC and Intangibles disclosure. They could be the drivers that address the company's ability to build policies to limit and/or avoid risks. These factors play a key role as "ingredients in the recipe" and, in the appropriate combination, contribute to obtaining high financial performance levels. Second, this chapter aims to frame the set of different configurations/combinations of NFI leading to successful performance within the first adoption of the specific Italian legislation (Decree No. 254/2016 as the transposition of Directive 95/2014/EU) that mandates the disclosure of specific NFI. This law aims to provide investors and various other stakeholders with a more comprehensive portrait of a company's performance. The decree entered into force starting

with fiscal year 2017, and large companies had to prepare a non-financial statement containing information on specific social, employment, and environmental matters and related relevant risks. The last are relevant as they are based on the specific business activity's nature and operations, along with policies able to avoid or reduce the impact of those risks.

This study adopts a qualitative methodology using the configurational approach and Fuzzy-set Qualitative Comparative Analysis (FsQCA) (Ragin, 2000) to analyze the combination of different NFI factors that lead to high performance. The selected sample is composed of 81 listed companies on the Italian stock market (*Borsa Italiana*) publishing their non-financial statement for the first time for fiscal year 2017.

Beyond its empirical value, our study makes some relevant contributions to the literature. First, we seek to provide insights into how different NFI combinations can have an impact on companies' performance by providing further support to previously conducted research. The configurational approach helps to unveil different combinations of NFI factors that can be equally effective for achieving high performance. Second, given the growing importance of CSR reporting in market valuations (Nekhili et al., 2017), this research could help to provide new non-financial-based variables resulting from content analysis to represent the main characteristics of the information flow produced by the statement. Third, we decided to focus our data analysis on Italian listed companies with a cross-industry approach after the aforementioned Decree No. 254/2016 (associated with Directive 2014/95/UE), as this was not investigated in previous research.

This chapter is structured as follows. First, we introduce the institutional context (Sect. 2). Then, we provide the literature review and theoretical background, which covers the relevant prior studies on non-financial disclosure and firm performance (Sect. 3) with our hypothesis. In Sect. 4, we specify the research method, which includes the sample, model specification, and variable definition. Section 5 provides the empirical findings resulting from the FsQCA. We finally conclude by developing a discussion (Sect. 6) and conclusion (Sect. 7) suggesting future directions on this emergent topic.

2 Institutional Context

During the last few decades, the European Union has developed a policy supporting enterprises' implementation of corporate social and responsible behaviors. Additionally, several documents and communications stimulating virtuous behaviors by enterprises as well as innovative corporate social reporting have been published introducing disclosure requirements.

In the 2000s, the European Union explored CSR attitudes in the European context, publishing the Green Book, which introduced the concept of CSR: "a concept whereby companies integrate social and environmental concerns in their business operations and interaction with their stakeholders on a voluntary basis"

(EC, 2001). The European policy orientation in support of CSR acquired “legislative” significance in subsequent years.

Recently, Directive 46/2006/EC has stated that companies, when relevant, “may also provide an analysis of environmental and social aspects necessary for understanding the company’s development, performance and position.” Then, Directive 51/2003/EC indicates that companies’ annual reports must include an analysis, when appropriate, of non-financial key performance indicators that can be relevant to the examined business, including information on environmental and employee matters. Next, the European Union decided to enrich the CSR disclosure of large entities that are public interest companies, mandating further information by issuing Directive 95/2014/EU (“non-financial Directive”).

The requested disclosure must be provided by a “non-financial statement” that can be separate or included in the annual report. This directive applies to companies exceeding an average number of 500 employees during the financial year. The Italian legislature introduced Directive 46/2006/EC through Legislative Decree no. 32 of 2 February 2007; this decree’s content is substantially in line with the original EC approach. The Italian legislature implemented the non-financial directive through Legislative Decree no. 254 of 31 December 2016, which requires the following public interest entities to apply the implemented European Union requirements (CSR Europe and GRI, 2017):

- with an average number of 500 employees during the financial year and
- a net turnover over of €40 million or, alternatively, total assets exceeding €20 million

The Italian regulation “expands” adoption of the non-financial directive to entities that do not have a statutory obligation. Entities that opt to comply with the decree can declare their compliance with the requirements, which gives them a “reputational advantage.” The Italian regulation, in compliance with the European text, requires the statutory auditor or an independent external auditor to express an opinion on whether the provided information is consistent with the Italian decree’s applicable requirements and, based on knowledge of the enterprise obtained during this engagement, to identify any existing material misstatements and their nature.

The required disclosure is strictly consistent with the European provision and provides information that illustrates the companies’ approach along with their policies against related risks concerning “environmental, social and employee matters, respect for human rights, anti-corruption and bribery issues.” The related information includes disclosure on the business model utilized, due diligence processes implemented, policies applied and their outcomes, related risks, and non-financial key performance indicators.

3 Literature Review

The increasing interest in social and environmental sustainability has activated a trend toward forcing companies to communicate CSR activities (Calza et al., 2016; Chen et al., 2015). Huang and Watson (2015) identify four topics: 1) determinants of CSR, 2) connection between CSR and financial performance, 3) consequences of CSR, and (4) roles of CSR disclosure and assurance. Such information can be voluntary or mandatory (Costa & Agostini, 2016). Voluntary disclosure attempts to satisfy external pressures to conform to socially acceptable norms (Mobus, 2005), while mandatory disclosures occur when firms comply with the requirements established by law. According to Grewal et al. (2018) and Veltri et al. (2020), most of the prior studies are based on voluntary disclosure practices (Uyar & Kiliç, 2012). On the other hand, mandatory non-financial disclosure regulations have recently emerged and come into force (De Luca, 2020; Fiandrino, 2019). Further contributions show that mandatory disclosure activities have required firms to increase their operating performance regarding sustainability and the environment (Phan et al., 2020; Delmas & Blass, 2010), food and water safety (Benneer & Olmstead, 2008), and patient health outcomes (Dranove et al., 2003).

Mandatory NFI disclosure may have different impacts on market performance for companies; some scholars have identified a positive relationship (Veltri et al., 2020; Erhemjamts et al., 2013; Rodgers et al., 2013; Burnett & Hansen, 2008; Al-Tuwaijri et al., 2004; Waddock & Graves, 1997), a negative relationship (Peng & Yang, 2014; Baird et al., 2012), no relationship (De Luca, 2020; Soana, 2011; Sun et al., 2010; McWilliams & Siegel, 2000; Aupperle et al., 1985; Alexander & Buchholz, 1978), and even a U-shaped/inverted relationship (Barnett & Salomon, 2012; Bowman & Haire, 1975). Theriou (2015) finds no significant difference in the use of financial and NFI for strategy development, and a significant difference in the evaluation of financial information and NFI for strategy implementation.

Because of a lack of completeness, accuracy, neutrality, and objectivity in voluntary disclosures, especially concerning social and environmental matters (Adams, 2004), the European Commission required specific regulation (Decree 254/2016). Some countries have modified their accounting regulations to align with the European recommendation (EU Directive 95/2014), introducing an obligation for companies to include environmental matters in their annual reports. Grewal et al. (2018) predict and document a more negative market reaction for firms having (1) low pre-directive non-financial disclosure levels, consistent with investors anticipating these future disclosures to reveal worse-than-expected news; (2) weaker performance on non-financial issues, consistent with expectations for these firms to incur future costs to internalize current externalities; and (3) lower ownership by institutional asset owners, consistent with such investors demanding more disclosures than are mandated by the directive.

However, prior research indicates that disclosure decreases information asymmetry and agency costs (Biddle et al., 2009; McNichols & Stubben, 2008; Biddle & Hilary, 2006;). These results support the reputation-building explanation that

considers CSR engagement a vehicle to build and maintain a firm reputation, thereby enhancing the information environment (Cui et al., 2018). Therefore, stakeholder theory (ST) may offer a solid framework for interpreting the (positive) relationship between NFI disclosure and financial performance. This theory focuses on the perspective that a company is a set of interdependent relationships among different members, including not only shareholders but all stakeholders (Nekhili et al., 2017). ST is founded on the ability to produce sustainable wealth through relations with various stakeholders instead of society in general (Freeman, 2010; Post et al., 2002; Mitchell et al., 1997; Donaldson & Preston, 1995; Jones, 1995). Mandatory NFI disclosure, especially regarding sustainability, may represent an element to meet various stakeholders' demands. Stakeholder support will allow companies to facilitate achieving performance and guaranteeing their survival (Gray et al., 1996), while mandated NFI appears to be value-relevant as it affects the levels of equity prices (Veltri et al., 2020). However, some authors (Clarkson, 1995) emphasize that stakeholder groups' dissatisfaction may also impair performance and damage the company's future. According to Orlitzky et al. (2003), the satisfaction of various stakeholder groups represents a relevant driver for improving financial performance.

Considerable research has been undertaken to enhance our understanding of the factors influencing disclosure (Dienes et al., 2016). Prior research has examined factors such as corporate size, listing status, leverage, and profitability to determine their links with the disclosure level. Gao et al. (2016), based on a sample of 491 firm-year observations between 2004 and 2012, find that firms with better CSR performance, greater external financing needs, and stronger corporate governance tend to provide higher quality CSR disclosures. Besides, the quality of a firm's financial disclosures and its CSR disclosures appears to be complementary when a firm has strong CSR performance. Some authors also provide evidence that a positive association exists between NFI and structural capital as an element of Intellectual Capital (De Luca et al., 2020). However, variations in sample size, different statistical methods, varying research settings, differences in index construction, and the type and number of firm characteristics examined have either individually or severally contributed to mixed results. In light of the aforementioned studies, we intend to investigate the configuration/combination of NFI across companies' statements based on the Italian regulation (Decree no. 254/2016). The aim is to verify the possible existence of different configurations/combinations that can equally affect companies' financial performance. Consequently, we expect more than one combination/configuration that leads to the same (high) performance level. Therefore, the subsequent research question (RQ) follows from these arguments:

RQ: Do different NFI configurations/combinations lead to successful performance?

4 Research Method

We adopted a qualitative methodology using the configurational approach and Fuzzy-set Qualitative Comparative Analysis (FsQCA) (Ragin, 2000). Such a research method is useful in answering our research question. In particular, we analyze the combination of different factors of NFI that lead to high performance. The following sections present details by the research method.

4.1 Sample Selection

The sample includes 81 Italian listed companies on the *Borsa Italiana Stock Exchange* (see Appendix) publishing the (NF) statement according to Italian Legislative Decree 254/2016. We composed the dataset using different databases: AIDA *Bureau Van Dijk (BVD)*, for companies' financial report data; Datastream for market performance values; *Sustainability Disclosure Database (SDD)*, CSR reports, annual reports, and corporate websites for companies' non-financial reports.

Data were collected for the single fiscal year 2017 across a wide variety of different industries, from manufacturing to financial services. According to the NAICS 2017 industry classification, “*Manufacturing*” firms comprise 34.14% of the total analyzed sample, followed by the “*Commercial Banking*” firms with 20.73%. We choose Italy as a significant country for this analysis for two reasons: (1) difficulties in comparing results because CSR information can be partially differentiated from country to country (Cucari et al., 2018; Cahan et al., 2016; D’Amico et al., 2016), and (2) Italy has witnessed a period of important legislation related to NFI and, specifically, to environmental and social issues.

4.2 Analysis Technique

We used the FsQCA 2.5 software as an analytical technique to explore the NFI combination that affects firms' performance. FsQCA is an increasingly popular method in business management (Kraus et al., 2018), family business (García-Castro & Aguilera, 2014), and corporate governance research (García-Castro et al., 2013). It allows investigation of different combinations of causal conditions leading to a certain outcome (Ragin, 2008). It suits our main objectives and purposes well because this technique provides a means for examining the relationship among combinations of conditions and a related outcome (Ragin, 2000, 2008).

4.3 Variables and Measurement

FsQCA requires expressing variables in sets and subsets according to their degree of inclusion in a specific condition. Developed by Ragin (2008), the FsQCA software allows us to transform values into crisp and fuzzy terms and to conduct the empirical analysis. Scores in crisp sets are operationalized as dummy variables that take the value of “1” (presence of variable) or “0” (absence of variable). Scores in fuzzy sets range from “1” (full inclusion) to “0” (full exclusion). Cut-off points allow calibration of all values into inclusion values. As in other studies (Kraus et al., 2018), the 95th, 50th, and 5th percentile values correspond to full inclusion, the crossover point, and full exclusion, respectively. Table 1 explains the way variables have been calibrated.

As an outcome, we used a market-based measure of firm performance, calculated as the firm’s market capitalization plus the debt book value, divided by the total assets’ book value. According to Nekhili et al. (2017), *TobinQ* is more pertinent than

Table 1 Variable definition and calibration values (*our elaboration*)

Condition	Description	Source	Inclusion threshold		
			Full exclusion	Crossover point	Full inclusion
TobinQ	<i>Ratio indicating the Market Value divided by Total Assets</i>	Datastream	0.03	0.47	3.79
Pag	<i>Number of pages in the Non-financial Report</i>	CSR report, Annual Report	11	76	190
Env	<i>Number of times the word “Environment” is present</i>	CSR report, Annual Report	2	42	176
IntCap	<i>Number of times the words “Intellectual and/or Intangible Capital” are present</i>	CSR report, Annual Report	12	48	126
GRI	<i>Dummy variable coding 1 if GRI standards are adopted in the Non-financial Report, 0 otherwise</i>	Sustainability Disclosure Database (SDD)	0		1
Separ	<i>Dummy variable coding 1 if the Non-financial Report is separated, 0 if aggregated</i>	CSR report, Annual Report	0		1
SameAud	<i>Dummy variable coding 1 if the auditor is the same for Annual Report and Non-financial Report, 0 otherwise</i>	CSR report, Annual Report	0		1
LnAsset	<i>Control Variables indicating the Natural Logarithm of Total Assets</i>	AIDA BVD	18.99	21.39	25.48

other accounting-based measures to capture the CSR reporting's impact on firm value. We adopted *TobinQ* for the following reasons:

- this measure is considered forward-looking because it is based on stock market price;
- the market-based measures, in general, show the notion of external stakeholders and may better capture the long-term value of CSR activities (Nekhili et al., 2017; Orlitzky et al., 2003); and
- it can be used to make a comparative analysis of firms across different industries because it is not affected by accounting requirements (Chakravarthy, 1986).

Market-based measures are more suitable than accounting-based measures for capturing the financial benefits of NFI (Hillman & Keim, 2001). Consistent with the previous argumentation and literature (Chen et al., 2015; Karagiorgos, 2010; Johnson et al., 2002), we used seven causal conditions as antecedents for higher performance.

The first is *Separ*, measured as the presence of a separated non-financial statement from the annual report (equal to 1) or aggregated non-financial statement (equal to 0). The second, *SameAud*, indicates whether the same auditor has issued the opinion for both the annual report and the non-financial statement (equal to 1) or the opinions for the report were issued by different auditors (equal to 0). The third is the number of pages (*Pag*) dedicated to NFI. The current number of pages for each firm was derived from consulting the annual reports and non-financial statements.

The fourth is *GRI* measured as the adoption of GRI standards in the non-financial statement (equal to 1) or other sets of standards/guidelines (equal to 0). Finally, the conditions *IntCap* and *Env* refer, respectively, to the number of times the words "Intellectual Capital/Intangible" and "Environment" occur within the report (within the annual report if aggregated or the NF statement if separated). Accordingly, a content analysis for frequency of use is performed by counting words or sentences included in reports (Galant & Cadez, 2017; Aras et al., 2010; Abbott & Monsen, 1979). We complement these causal conditions with one more important control variable that may affect our results: the natural logarithm of total assets (*LnAsset*). These metrics for size are commonly used in accounting and finance studies (Francis et al., 2004).

5 Results

We present the outcomes based on the model described in the following equation:

$$QTobin = f(Pag, IntCap, Env, Separ, SameAud, GRI, LnAsset)$$

We follow the recommendations of Ragin (2009) and display the results of the complex situation in Table 2. Using the notation introduced by Ragin and Fiss (2008), black circles (●) denote the presence/high value of a condition, white circles

Table 2 High performance configurations (*our elaboration*)

	High Performance Configurations							
	1	2	3	4	5	6	7	8
Conditions								
Pag		●	○	○		●		
Env	●	○	○	●	●	●	○	
Separ	●	○	○	○	○	●	●	●
SameAud	●	●	●	●	●	●	●	●
GRI		○	○		●	●	○	○
IntCap			●	●	●	○	●	●
LnAsset	○	○	○	●	●		○	○
Raw coverage	0.36	0.06	0.14	0.09	0.05	0.14	0.29	0.22
Consistency	0.82	0.92	0.87	0.83	0.89	0.77	0.81	0.80
Solution coverage	0.68							
Solution consistency	0.81							

●: causal condition present/high value, ○: causal condition absent/low value, Blank space: neutral permutation

(○) represent its absence/low value, and blank cells indicate that the condition is not binding in that particular configuration.

We found eight causal combinations for high performance, which validates our research theory that different combinations of NFI can increase performance. The FsQCA software also calculates consistency and coverage values for each configuration and the overall solution for each outcome. The solution consistency is 0.81, which is above the solution consistency cut-off of 0.8 and meets the recommendation of Ragin (2008). Moreover, the solution coverage equals 0.68, indicating that the extracted configurations explain an acceptable proportion of the variation in firm performance. The FsQCA also provides raw coverage and unique coverage values. The raw coverage indicates the proportion of cases featuring both the outcome and that specific configuration (Ragin, 2008). The unique coverage refers to how much of a given outcome is only covered by that specific configuration (Schneider & Wagemann, 2012).

Drawing on other studies (Samara & Berbegal-Mirabent, 2018; Ragin, 2008), we opted for analyzing the causal configurations performing a higher raw coverage (configuration #1 and #7) because they are more meaningful in explaining the outcome. In general, among different configurations, the *IntCap*, *Env*, *Separ*, and *SameAud* conditions appear to be relevant because they are present in several (at least four) configurations. However, no configuration includes all those conditions at the same time.

Two further robustness checks were performed. The first test assesses the solutions' stability by changing the consistency and calibration thresholds. As a second check, following other research (Lewellyn & Fainshmidt, 2017), we also conducted an OLS regression analysis to check whether NFI has a significant effect on market performance. The results, not reported, show no significant effect, confirming the

findings of previous studies that indicate mixed results and highlight the relevance of the configurational approach for examining these issues.

6 Discussion

Although previous research extensively documents the NFI and financial performance relationship (Veltri et al., 2020; Peng & Yang, 2014; Erhemjamts et al., 2013; Rodgers et al., 2013; Baird et al., 2012; Barnett & Salomon, 2012; Burnett & Hansen, 2008), no studies examine the value relevance of causal combinations of NFI. The FsQCA results show that high performance does not derive from only one specific characteristic, but from sets of connected conditions. To address our RQ, whether possible different configurations/combinations of NFI could equally lead to higher companies' financial performance effectively, we found and identified eight different causal paths that lead to increased market-based performance:

- Configuration 1: *Pag* irrelevant, high *Env*, high *Separ*, high *SameAud*, *GRI* irrelevant, *Intcapc* irrelevant, and low *LnAsset*.
- Configuration 2: high *Pag*, low *Env*, low *Separ*, high *SameAud*, low *GRI*, high *Intcapc*, and low *LnAsset*.
- Configuration 3: low *Pag*, low *Env*, low *Separ*, high *SameAud*, low *GRI*, *Intcapc* irrelevant, and low *LnAsset*.
- Configuration 4: low *Pag*, high *Env*, low *Separ*, high *SameAud*, *GRI* irrelevant, high *Intcapc*, and high *LnAsset*.
- Configuration 5: *Pag* irrelevant, high *Env*, low *Separ*, high *SameAud*, high *GRI*, high *Intcapc*, and high *LnAsset*.
- Configuration 6: high *Pag*, high *Env*, high *Separ*, high *SameAud*, high *GRI*, low *Intcapc*, and *LnAsset* irrelevant.
- Configuration 7: *Pag* irrelevant, low *Env*, high *Separ*, high *SameAud*, low *GRI*, high *Intcapc*, and low *LnAsset*.
- Configuration 8: *Pag* irrelevant, *Env* irrelevant, high *Separ*, high *SameAud*, low *GRI*, high *Intcapc*, and low *LnAsset*.

Configurations #1 and #7 have higher raw coverage. We observe that the number of pages is not associated with higher performance levels; the quality of the information produced is more important than the quantity. This is in line with prior research underlining the importance of the quality of disclosures (Alotaibi & Hussainey, 2016; Zahller et al., 2015; Hasseldine et al., 2005). Furthermore, the adoption of GRI standards appears to be only slightly associated with performance (Configurations #5 and #6). The presence of separated reports (annual and non-financial) rather than aggregated reports is equally associated with performance (Configurations #1, #6, #7, #8 vs Configurations #2, #3, #4, #5). However, the aggregated report is associated with higher IC disclosure and performance in configurations #3, #4, and #5. Thus, it appears that in presence of an IC disclosure, the aggregation of reports is associated with higher TobinQ, probably because the

connectivity of such information would have a benefit in terms of performance (Lee & Yeo, 2016; Sierra-García et al., 2015). Finally, a higher performance level is not associated with more information about IC and Intangibles.

In almost all configurations, *LnAssets* is low; this means that companies belonging to the configurations with higher raw coverage have a lower size. From a theoretical standpoint, this research introduces three contributions. First, this study makes a significant methodological contribution by exploring different critical paths (configurations) that can lead to the same outcome. The configurations are not just combinations of antecedent conditions (either positive or negative) but also of their absence (Wu et al., 2014). Eight different causal paths lead to high performance and only two of the above configurations present an acceptable coverage index (Configuration #1 and #7). According to our results, IC disclosure, environment disclosure, and the aggregation of financial and non-financial reports are antecedents of the performance level, but they are also an obstacle, depending on the configurations of all of these characteristics. This is relevant in establishing, for instance, some new guidelines for NFI. Our study, in line with the more recent contributions of NFI and CSR research (Lee & Chen, 2018; Cuadrado-Ballesteros et al., 2017), also makes a relevant methodological contribution to voluntary disclosure using a QCA method. Second, we identified different measures of NFI, such as causal conditions, calculated through content analysis that can benefit from having more dimensions appraised and more sophisticated coding. We also introduced three variables based on the counting process of content analysis (*Pag*, *IntCap*, and *Env*). Third, for practitioners, these findings provide advisors with specific techniques to manage NFI use.

7 Conclusion and Future Research

In the last two decades, a growing number of companies have begun to disclose NFI regarding actions such as environmental protection, human rights preservation, and contribution to communities and societies (Dhaliwal et al., 2014; Stolowy & Paugam, 2018). For this reason, there has been intense growth among scholars, practitioners, public opinion, etc., concerning environmental and social issues. To meet stakeholders' expectations, companies have started implementing common patterns of social and environmental actions, in contrast with classical theory (Friedman, 1970), in which the only objective is maximizing shareholders' wealth. NFI has recently been the object of regulation and its content has been mandated with specific reference to risk-related disclosure as well as the connected policies. Therefore, companies have started showing their ability to face risks by leaning on their intangible assets and Intellectual Capital (IC) as levers to overcome risky scenarios.

In this context, our study explores the firms' market performance associated with the adoption of mandatory non-financial disclosure, specifically, the effect of Directive 2014/95/EU, which has forced European companies to disclose information on

environmental actions, social and employee factors, respect for human rights, anticorruption issues, and diversity in their board of directors, along with information about risk management policies.

We analyze the universe of Italian companies listed on *Borsa Italiana* in 2017 publishing non-financial statements to test the relationship between some non-financial variables and market performance. We aim to provide insight into how NFI can affect companies' performance. Given the importance of NFI in market valuations (Nekhili et al., 2017), we contribute to considering new non-financial-based variables created with the content analysis to represent the main characteristics of the disclosure of the non-financial statement. Another contribution relies on the country setting, which has never before been examined in prior studies: we decided to test the model on Italian listed companies belonging to all sectors after the recent Decree 254/2016 (associated with Directive 2014/95) that imposed the obligation to prepare such new statements.

This study has also implications for practitioners, as our findings provide advisors with specific techniques to manage NFI use. Our study has also provided evidence of the FsQCA method's usefulness for investigating multiple interaction effects and complex configurations of NFI. We hope to encourage future research on disclosure literature from novel perspectives. This study also presents shortcomings. First, it focuses just on the Italian context and covers only the year 2017. Thus, researchers must carefully consider the interpretations of this study's findings in generalizing for other studies. Second, our method is sensitive to set calibration. Besides, this study's main caveat is the relatively low coverage values in some cases.

Therefore, some configurations might not be informative enough. Third, there may be other relevant non-financial variables gathered from the content analysis measuring NFI that were not reported due to a lack of available data. Fourth, our focus on environmental and IC aspects may only partially explain the entire content of the non-financial statement disclosure, omitting other issues, such as employee matters, anticorruption, and independence and diversity in the board of directors. Further research can investigate the real effects once the regulation comes into force, changing non-financial and financial performance, and firm-, industry-, and country-level drivers of variation in non-financial disclosure quality.

List of Companies Included in the Sample

1	A2A S.P.A.
2	ACEA S.P.A.
3	AEFFE S.P.A.
4	AMPLIFON S.P.A.
5	ANSALDO STS S.P.A.
6	ARNOLDO MONDADORI EDITORE SPA
7	ASSICURAZIONI GENERALI—SOCIETA' PER AZIONI

(continued)

8	ASTALDI SOCIETA' PER AZIONI ED IN BREVE ASTALDI S.P.A.
9	AUTOGRILL S.P.A.
10	BANCA CARIGE S.P.A.—CASSA DI RISPARMIO DI GENOVA E IMPERIA SIGLABILE BANCA CARIGE S.P.A. O CARIGE S.P.A.
11	BANCA GENERALI—SOCIETA' PER AZIONI O IN FORMA ABBREVIATA: GENERBANCA
12	BANCA IFIS S.P.A.
13	BANCA MEDIOLANUM SPA
14	BANCA MONTE DEI PASCHI DI SIENA
15	BANCA PICCOLO CREDITO VALTELLINESE S.P.A. O, IN FORMA ABBREVIATA, CREDITO VALTELLINESE S.P.A. O CREVAL S.P.A.
16	BANCA POPOLARE DI SONDRIO—SOCIETA' COOPERATIVA PER AZIONI
17	BANCO BPM SOCIETA' PER AZIONI
18	BANCO DI DESIO E DELLA BRIANZA SOCIETA' PER AZIONI
19	BANCO DI SARDEGNA S.P.A.
20	BIESSE S.P.A.
21	BPER BANCA S.P.A.
22	BRUNELLO CUCINELLI S.P.A.
23	BUZZI UNICEM SPA—SENZA VINCOLI DI RAPPRESENTAZIONE GRAFICA
24	CAREL INDUSTRIES S.P.A.
25	CREDITO EMILIANO S.P.A. ABBREVIABILE IN CREDEMBANCA E IN CREDEM
26	DANIELI & C. OFFICINE MECCANICHE S.P.A. IN FORMA ABBREVIATA ANCHE DANIELI & C. S.P.A.
27	DAVIDE CAMPARI-MILANO S.P.A.—O IN FORMA ABBREVIATA D.C.M. S.P. A., DCM S.P.A., O CAMPARI S.P.A.
28	DIASORIN S.P.A.
29	DOBANK S.P.A.
30	EI TOWERS S.P.A.
31	ELICA—S.P.A.
32	ENAV S.P.A.
33	ENEL—SPA
34	ENI S.P.A.
35	ESPRINET S.P.A.
36	EXPRIVIA S.P.A.
37	FINCANTIERI S.P.A.
38	FINECOBANK BANCA FINECO S.P.A. O IN FORMA ABBREVIATA FINECOBANK S.P.A., OVVERO BANCA FINECO S.P.A., OVVERO FINECO BANCA S.P.A.
39	FRENI BREMBO—S.P.A. O ANCHE PIU' BREVEMENTE BREMBO S.P.A.
40	GEOX S.P.A.
41	HERA S.P.A.
42	I.M.A. INDUSTRIA MACCHINE AUTOMATICHE S.P.A. IN SIGLA IMA S.P.A.
43	IL SOLE 24 ORE S.P.A.
44	INTESA SANPAOLO SPA
45	IREN S.P.A.
46	ITALIAONLINE S.P.A.

(continued)

47	LUXOTTICA GROUP SPA
48	MARR S.P.A.
49	MEDIOBANCA BANCA DI CREDITO FINANZIARIO SOCIETA' PER AZIONI
50	NATUZZI S.P.A.
51	OPENJOBMETIS SPA AGENZIA PER IL LAVORO
52	OVS SPA
53	PANARIAGROUP INDUSTRIE CERAMICHE S.P.A.
54	PARMALAT S.P.A.
55	PIAGGIO & C. S.P.A.
56	POLIGRAFICI EDITORIALE S.P.A.
57	POSTE ITALIANE
58	PRADA S.P.A.
59	RAI WAY S.P.A.
60	RECORDATI INDUSTRIA CHIMICA E FARMACEUTICA S.P.A.
61	RIZZOLI CORRIERE DELLA SERA MEDIAGROUP SPA O IN FORMA ABBREVIATA RCS MEDIAGROUP SPA O RCS S.P.A.
62	SABAF S.P.A.
63	SAIPEM S.P.A.
64	SALINI IMPREGILO SPA
65	SALVATORE FERRAGAMO S.P.A.
66	SERVIZI ITALIA S.P.A.
67	SIT S.P.A.
68	SNAITECH S.P.A.
69	SNAM S.P.A.
70	SOCIETA' CATTOLICA DI ASSICURAZIONE—SOCIETA' COOPERATIVA
71	SOL S.P.A.
72	TECHNOGYM S.P.A.
73	TELECOM ITALIA
74	TOD'S S.P.A.
75	TOSCANA AEROPORTI S.P.A.
76	UNICREDIT
77	UNIEURO S.P.A.
78	UNIONE DI BANCHE ITALIANE SOCIETA' PER AZIONI, IN FORMA ABBREVIATA ANCHE SOLO UBI BANCA
79	VINCENZO ZUCCHI—SOCIETA' PER AZIONI
80	VITTORIA ASSICURAZIONI SPA
81	ZIGNAGO VETRO S.P.A. CON LA SIGLA Z.V. S.P.A.

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The Influence of Ownership Structure on Intellectual Capital Disclosure Quality



Filippo Vitolla, Nicola Raimo, and Arcangelo Marrone

1 Introduction

The aim of this work is to examine the influence of the ownership structure on the intellectual capital disclosure quality (ICDQ) in the integrated reporting context.

The literature considers intellectual capital (IC) as intangibles assets or non-monetary resources and provides several examples such as employee training, innovation, know-how, customer satisfaction, research and development (Firer & Williams, 2003; Lev & Zambon, 2003). These elements are the basis of the value creation processes of companies (Zambon & Marzo, 2007; Abhayawansa & Guthrie, 2010; Gamerschlag, 2013; Vitolla et al., 2020a; Salvi et al., 2020a, 2020b). This circumstance is connected with the advent of the knowledge-based economy instead of the production-based economy, which has considerably increased the relevance of the IC in the value creation processes of companies (Barth & Clinch, 1998; Kallapur & Kwan, 2004; Zambon & Marzo, 2007; Abhayawansa & Guthrie, 2010). Today, IC represents a key factor for companies to create or strengthen their competitive advantage and achieve medium and long-term financial goals (Guthrie & Petty, 2000).

These circumstances have significantly increased the importance of information relating to the IC, which is increasingly valuable to investors for their investment decisions. Considering the inability of traditional financial disclosure to capture IC information, investors and other stakeholders have long pressured companies to provide information related to intangibles in order to assess the ability of these companies to create value in the medium and long term (Eccles et al., 2001; Upton, 2001). In response to these pressures, companies have provided information relating

F. Vitolla (✉) · N. Raimo · A. Marrone

Department of Management, Finance and Technology, LUM University, Bari, Italy
e-mail: vitolla@lum.it; raimo@lum.it; raimo.phdstudent@lum.it; marrone@lum.it

to the IC through annual reports, IC statements, environmental reports, corporate social responsibility reports and initial public offering prospectuses (Vitolla et al., 2019a). These documents are among those most studied and analysed by academic researchers interested in IC (Merkley, 2013; Adams, 2015; Abhayawansa & Guthrie, 2016). However, these documents, although reporting information relating to the IC, are not able to represent the links between the firm's intangible and tangible resources (Salvi et al., 2020a).

However, in recent years a novelty has emerged in the field of IC disclosure. In fact, the recent advent of integrated reporting, released by the International Integrated Reporting Council (IIRC), has provided companies with an innovative tool for disseminating IC information (Vitolla & Raimo, 2018; Vitolla et al., 2018; Raimo et al., 2019; García-Sánchez et al., 2020a, 2020b). This tool is in fact able to reveal the value creation processes of companies through a focus on six different types of capital divided between intangible forms of capital (structural,¹ human, social and relationship) and three tangible forms (financial, natural, manufactured) (IIRC, 2013). The novelty of integrated reporting lies in the representation of the interconnections between the different types of information that allows to understand the way in which intangible resources and the IC are combined with tangible resources (Salvi et al., 2020a). The importance of integrated reporting and the growing adoption by companies are pushing scholars interested in intangibles to examine the IC information contained within the integrated reports (e.g. Melloni, 2015; Casonato et al., 2018; Beretta et al., 2019; Dumay et al., 2019; Terblanche & De Villiers, 2019; Vitolla et al., 2020b). However, among these, only a few studies have examined the drivers of IC disclosure (Melloni, 2015; Beretta et al., 2019; Vitolla et al., 2020b). In light of this, knowledge about the reasons and factors that drive companies to disclose more IC information within the integrated reports is still scarce today. This study aims to fill this important gap by investigating the role played by the ownership structure in the dissemination of IC information. It is important to examine the impact of the ownership structure since it, directly or indirectly, is able to influence the disclosure policies of companies. In fact, it can be strictly connected to the management philosophy and corporate transparency by influencing the time horizons and the amount of information disseminated and it could indirectly influence the level of monitoring and therefore the quality and level of disclosure (Eng & Mak, 2003; Vitolla et al., 2020b). In line with agency theory, the separation between shareholders and management involves information asymmetry problems (Jensen & Meckling, 1976). Managers may disclose less information in order to hide firm's actual performance from shareholders (Donnelly & Mulcahy, 2008). However, some categories of shareholders may have the knowledge, motivation and skills to prevent managers from hiding information and thus increase the quality and level of corporate disclosure (Donnelly & Mulcahy, 2008).

¹ Although the <IR> framework identifies three types of capital under the IC umbrella (intellectual, human, and social and relationship capital), we employ the term 'structural capital' in place of 'intellectual capital' to avoid overlap.

Furthermore, some specific ownership structures could directly influence the degree of information asymmetry in the different company contexts (Vitolla et al., 2020b). However, despite the importance that the ownership structure plays in corporate transparency policies, the impact of shareholder characteristics on the level of disclosure represents a topic that is still little explored in the academic literature (Hossain et al., 1994; Chau & Gray, 2002; Eng & Mak, 2003; Huafang & Jianguo, 2007; Mohd Ghazali, 2007; Donnelly & Mulcahy, 2008; Raimo et al., 2020a). In particular, the contributions relating to the impact of the ownership structure on IC disclosure are very limited (Firth & Williams, 2005) and, to our knowledge, there are no studies that analyse this relationship in the integrated reporting context. Therefore, this study aims to fill this important gap by analysing the relationship between the characteristics of ownership structure (ownership concentration, managerial ownership, institutional ownership and state ownership) and the level of IC information disclosed by companies within the integrated reports. To investigate this relationship, this study uses an agency theory perspective. This theory is, in fact, able to explain both the effects of the different ownership structures and the choices of companies to disclose information voluntarily (Firth, 1980; Chow & Wong-Boren, 1987; Cooke, 1989, 1992; Hossain et al., 1995).

The remainder of this work is organized as follows. Section 2 presents the theoretical background and literature review, while Sect. 3 develops the research hypotheses. Section 4 presents the methodology used, while Sect. 5 presents and discusses the results obtained. Finally, Sect. 6 draws conclusions.

2 Theoretical Background and Literature Review

Agency theory represents the theoretical basis of this work. Indeed, it is able to explain the decisions of firms to disclose information voluntarily (Firth, 1980; Chow & Wong-Boren, 1987; Cooke, 1989; Hossain et al., 1995). According to agency theory, managers act on behalf of shareholders (Ross, 1973; Jensen & Meckling, 1976; Fox, 1984; Eisenhardt, 1989). However, the separation between shareholders and management presents numerous critical issues mainly determined by the delegation of decision-making authority to managers (Donnelly & Mulcahy, 2008). These criticalities are connected to the presence of information asymmetry between owners and managers (Barako et al., 2006). The latter in fact, dealing directly with business management, have an important information advantage over the shareholders (Donnelly & Mulcahy, 2008), who face important moral dilemmas as they are unable to best assess the work of managers (Barako et al., 2006; Donnelly & Mulcahy, 2008). The difficulty of shareholders to control the actions of managers could allow the latter to pursue their own personal interests at the expense of the objectives of ownership (Barako et al., 2006). The owners are in fact interested in the long-term value of the firm while the managers are interested in maximizing the company's current value since it guarantees greater remuneration and fame

(Healy & Palepu, 2001). This divergence of interests between owners and managers has negative impacts on the firm's economic capital (Healy & Palepu, 2001).

One way to align the interests of ownership and management and, consequently, reduce agency problems is represented by the definition of optimal contracts that envisage compensation agreements (Healy & Palepu, 2001). However, very often, in the context of companies, the contracts are not complete and therefore this solution hardly allows a reduction in agency costs (Vitolla et al., 2020c). A broader disclosure represents another solution able to reduce the information asymmetry between ownership and management and, consequently, mitigate agency costs (Healy & Palepu, 2001; Raimo et al., 2020a, 2020b, 2021). In fact, it allows to show the company's performance and, therefore, reduce information asymmetries. However, in order for managers to disclose a quality disclosure capable of mitigating such information asymmetries, an adequate level of control and monitoring is necessary (Barako et al., 2006; Donnelly & Mulcahy, 2008). In this perspective, the different ownership structures take on particular importance, since some types of shareholders may possess the knowledge, motivations and skills necessary to accurately carry out the control and monitoring functions capable of improving disclosure processes (Donnelly & Mulcahy, 2008; Raimo et al., 2020a). Furthermore, some particular ownership structures directly influence the level of information asymmetry present in the different company contexts.

Despite the importance of the characteristics of the shareholders in the corporate transparency choices, studies on the relationship between ownership structure and disclosure are still limited. Mohd Ghazali (2007) examined the CSR disclosure of Malaysian companies and found that managerial ownership has a negative effect on the level of information disseminated, while government ownership has a positive influence. Darus et al. (2009) confirmed the positive influence of government ownership.

Huafang and Jianguo (2007), examining voluntary disclosure, found that higher blockholder ownership and foreign ownership favour the dissemination of information. Rouf and Al-Harun (2011) found a positive effect of institutional ownership and a negative influence of managerial ownership on the level of voluntary information disclosed by companies. Eng and Mak (2003) also found a negative effect of managerial ownership as well as a positive influence of governmental ownership. Barako et al. (2006) instead found that institutional ownership and foreign ownership have a positive impact on the level of voluntary information disclosed by companies. Alhazaimieh et al. (2014) emphasized that governmental ownership and foreign ownership positively affect voluntary disclosure, whereas blockholder ownership has a negative impact. Also Juhmani (2013) found a negative influence of blockholder ownership on the level of voluntary information. Donnelly and Mulcahy (2008) instead failed to find a significant relationship between ownership structure and the level of voluntary information.

Examining corporate governance disclosure, Al-Bassam et al. (2018) found a positive impact of institutional ownership and government ownership on the level of information disseminated, while, analysing integrated reporting quality, Raimo et al.

(2020a) found a positive impact of institutional ownership and a negative influence of ownership concentration, state ownership and managerial ownership.

Finally, in relation to IC disclosure, Li et al. (2008) highlighted a negative effect of ownership concentration on the level of IC information disclosed by companies within the annual reports, while Rahman et al. (2019) found a negative influence of director and institutional ownership. Finally, Firer and Williams (2005) found a positive influence of governmental ownership and a negative impact of ownership concentration and managerial ownership on the level of IC information disseminated by companies. However, these studies have examined IC disclosure within the annual reports and there are no contributions aimed at examining the level of IC information within the integrated reports. This study aims to fill this gap by analysing the effect of ownership structure characteristics on IC disclosure in the integrated reporting context.

3 Hypotheses Development

Future research has examined the effects of different features of the ownership structure on disclosure such as: ownership concentration, state ownership, government ownership, institutional ownership, family ownership, foreign ownership and managerial ownership.

Among the different characteristics examined by the literature, this work focuses on the following: ownership concentration, managerial ownership, institutional ownership and state ownership. Below is the development of the individual hypotheses.

Ownership concentration. The conflicts between shareholders and managers that are the basis of the agency theory seem to be greater in firms in which shares are widely held than in firms in which shares are in the hands of a few shareholders (Fama & Jensen, 1983). In fact, within these firms there is a greater distance between ownership and management, and managers possess greater power (Raimo et al., 2020a). Within these business contexts, disclosure takes on particular importance as it represents a tool for monitoring the work of managers and mitigating conflicts (Jensen & Meckling, 1976). A quality disclosure could in fact allow managers to show that their behaviour is in line with the objectives of the shareholders (Craswell & Taylor, 1992; McKinnon & Dalimunthe, 1993). In addition, companies with more dispersed ownership more likely have their shares held by the public at large (Mohd Ghazali, 2007) and may be exposed to greater public pressure (Vitolla et al., 2019b). This circumstance increases the relevance of the disclosure in business contexts characterized by a more dispersed ownership, since it could allow to mitigate the pressures to which these companies are exposed. Therefore, the presence of higher agency conflicts, the need to show the commitment of managers in favour of shareholders and the greater pressures to which companies with more dispersed ownership structures are exposed could push the latter to provide higher quality IC information. In fact, this information has the ability to show the long-term

perspectives of companies and could help reduce external pressures. Conversely, lower agency conflicts and less pressure on firms with higher ownership concentrations could push these firms to provide less quality IC information. Therefore, in light of this, it is possible to hypothesize that:

H1: Ownership concentration negatively affects ICDQ

Managerial ownership. A company in which management holds a large portion of shares can be considered as closely held (Mohd Ghazali, 2007). As managerial ownership decreases, outside shareholders require a greater level of control and monitoring (Jensen & Meckling, 1976; Donnelly & Mulcahy, 2008). In fact, a lower degree of managerial ownership increases the information asymmetry between ownership and management and therefore pushes shareholders to request greater monitoring (Raimo et al., 2020a). This circumstance could push managers to provide more information that goes beyond what is required by regulatory obligations (Donnelly & Mulcahy, 2008). From an empirical point of view, Ruland et al. (1990) showed that firms with a higher degree of managerial ownership provide lower management earnings forecasts, while Eng and Mak (2003) found that they disclose lower voluntary information. High levels of managerial ownership imply a low degree of information asymmetry as there is no clear separation between ownership and management (Raimo et al., 2020a). This circumstance could therefore push companies with a high degree of managerial ownership to provide lower quality IC information precisely because of the limited information asymmetry. Therefore, in light of this, it is possible to hypothesize that:

H2: Managerial ownership negatively affects ICDQ

Institutional ownership. Another form of monitoring, in addition to that of the board of directors, is that carried out directly by the shareholders (Donnelly & Mulcahy, 2008). Institutional shareholders, who represent a particular group that holds a relatively high number of shares, have the ability to carry out this monitoring function at lower costs than small shareholders thanks to their professional qualification (Donnelly & Mulcahy, 2008). Firms with higher levels of institutional ownership are therefore more closely monitored (Dhaliwal et al., 1982). Institutional shareholders are particularly encouraged to monitor the disclosure policies of companies due to the large shareholding (Barako et al., 2006). Consequently, companies with higher levels of institutional ownership are encouraged to disclose more information to mitigate the information asymmetry (Diamond & Verrecchia, 1991) and meet the needs of these categories of shareholders (Barako et al., 2006). From an empirical point of view, Carson and Simnett (1997) found that higher levels of institutional ownership favour the dissemination of a greater number of voluntary corporate governance information. Therefore, it is reasonable to expect that the greater monitoring carried out directly by institutional shareholders and the greater attention they pay to disclosure policies may push firms with higher levels of institutional ownership to disseminate higher quality IC information. Therefore, in light of this, it is possible to hypothesize that:

H3: Institutional ownership positively affects ICDQ

State ownership. Another possible connotation of the ownership structure is represented by the holding of shares by the state. Firms with large state holdings are not only profit-driven but also pursue goals of a non-financial nature (Mohd Ghazali, 2007). Such companies are more politically sensitive as their actions and behaviours are more in the public eye (Mohd Ghazali, 2007). In fact, state ownership indicates that the company is owned by the public at large (Raimo et al., 2020a). Such circumstances could push firms with high levels of state ownership to adopt sustainable behaviours and engage in socially responsible activities, including the dissemination of non-financial information (Eng & Mak, 2003; Firer & Williams, 2005; Mohd Ghazali, 2007). The dissemination of information of a non-financial nature can in fact allow to demonstrate the state's commitment to specific sustainable activities (Firer & Williams, 2005). Furthermore, firms with high levels of state ownership could be incentivized to disclose more information as they are not particularly concerned by the hypothesis that competitors may exploit such information (Firer & Williams, 2005). The presence of the state in the ownership structure guarantees the certainty of solvency (La Porta et al., 1998), allowing a reduction in the cost of equity capital (Vitolla et al., 2020d). Thus, the greater ease of access to finance may make disclosure of sensitive information less worrying (Firer & Williams, 2005). From an empirical point of view, Eng and Mak (2003) and Firer and Williams (2005) have shown a positive effect of state ownership on the amount of voluntary information and on the level of IC information disseminated by companies, respectively. Therefore, the greater attention on the part of public opinion and the lesser concern in the disclosure of sensitive or confidential information could push firms with higher levels of state ownership to disclose higher quality IC information. Therefore, in light of this, it is possible to hypothesize that:

H4: State ownership positively affects ICDQ

4 Research Methodology

4.1 Sample

In order to identify the sample of this study, 200 companies that adopted integrated reporting in 2017 and published this document on the IIRC website were identified. The choice of the IIRC website ensured that the integrated reports were drawn up in compliance with the <IR> framework. Specifically, these companies were identified from the lists contained in the '<IR> Reporters' and 'Leading Practices' sections of the IIRC website. The joint use of these two sections guarantees an adequate balance to the sample as the 'Leading Practices' section contains higher quality integrated reports that should represent best practices in the field of integrated information while the '<IR> Reporters' section contains documents of presumable lower quality. The absence of data relating to independent variables and control

variables led to the elimination of 48 companies from the sample. Therefore, in light of this, the final sample of this study is made up of 152 international companies. Normality tests were conducted on the sample. The results showed that our data are normally distributed.

4.2 *Variables and Model Specification*

The dependent variable of this study is represented by the ICDQ. This variable was measured through the scoreboard created by Vitolla et al. (2020b). It considers three areas: background, content and form.

The background area evaluates the presence of a text unit referring to each category of IC: structural, human, social and relationship (Vitolla et al., 2020b).

The content area instead evaluates the type of evidence, level of detail and topic (Vitolla et al., 2020b). The type of evidence considers the kind of information disseminated; more in detail, it examines the presence of qualitative, quantitative non-monetary and monetary information (Vitolla et al., 2020b). The level of detail instead examines the degree of depth of the information disclosed. Finally, the topic examines the presence of IC information as input and outcomes of the value creation process (Vitolla et al., 2020b).

The form area instead evaluates readability and clarity, news-tenor and time orientation (Vitolla et al., 2020b). Readability and clarity considers the existence of summary indicators, the existence of graphs and tables and the clarity of the language. As regards the news-tenor, the scoreboard used evaluates the presence of positive news-tenor and negative news-tenor information (Vitolla et al., 2020b). Finally, in relation to time orientation, the scoreboard examines the presence of both forward-looking and backward-looking information (Vitolla et al., 2020b).

The scoreboard used provides for the assignment of a score of 1 in case of the presence of each element and a score of 0 in case of absence. In light of this, the maximum score for each category of IC is 14, while the maximum score for the overall ICDQ is 42.

The independent variables of this work are: ownership concentration (OC), managerial ownership (MO), institutional ownership (IO) and state ownership (SO). OC was measured as the percentage of ordinary shares held by the ten largest shareholders (Raimo et al., 2020a). MO was instead measured as the percentage of ordinary shares owned by top management (including supervisors and directors) (Raimo et al., 2020a), while IO was calculated as the percentage of ordinary shares held in block by institutional investors (Raimo et al., 2020a). Finally, SO was measured as the percentage of ordinary shares owned by the state (Raimo et al., 2020a).

The following control variables have been included to increase the effectiveness of the econometric analysis: firm profitability (FP), firm size (FS), financial leverage (FL), environmental sensitivity (ES), European location (EL), board size (BS) and sustainability committee (SC). FP was measured as return on equity (Vitolla et al.,

2019c), FS was calculated as the natural logarithm of total assets (Raimo et al., 2020c; Vitolla et al., 2020e, 2020f). FL was calculated as the ratio of the book value of debt over the book value of equity. ES instead was measured through a dummy variable that assumes a score equal to 1 if the firm operates in a sector with a high environmental impact and 0 otherwise. EL was measured through another dummy variable which assumes a score of 1 if the firm has its headquarters in Europe and 0 otherwise. BS was calculated as the number of directors on the board. Finally, SC was measured through another dummy variable which assumes a score of 1 if the firm has a sustainability or CSR committee and 0 otherwise.

In order to test the effects of ownership structure attributes on ICDQ, this study uses a regression model. The analysis model proposed by this work is reflected in the following equation:

$$\text{ICDQ} = \beta_0 + \beta_1 \text{OC} + \beta_2 \text{MO} + \beta_3 \text{IO} + \beta_4 \text{SO} + \beta_5 \text{FP} + \beta_6 \text{FS} + \beta_7 \text{FL} + \beta_8 \text{ES} \\ + \beta_9 \text{EL} + \beta_{10} \text{BS} + \beta_{11} \text{SC} + \varepsilon$$

5 Results and Discussion

5.1 Descriptive Statistics and Correlation Analysis

Table 1 shows the descriptive statistics and the correlation matrix. As for descriptive statistics, ICDQ has an average value of 17.37, which shows a low dissemination of IC information by companies within the integrated reports. OC shows an average value of 73.94%, which demonstrates a high degree of concentration of the shares in the hands of the ten largest shareholders. MO has an average value of 1.20%, which demonstrates a low percentage of shares held by management, while IO has an average value of 50.31%, which demonstrates a large participation of institutional investors. Finally, SO has an average value of 2.33%, which demonstrates low state participation.

As regards the correlation matrix, the highest coefficient is equal to -0.294 between MO and ICDQ. This value shows the absence of multicollinearity problems since, as suggested by Farrar and Glauber (1967) and Gujarati (1995), multicollinearity problems exist only when the coefficients exceed ± 0.8 or ± 0.9 . The variance inflation factor (VIF) analysis also supports this claim. In fact, according to Myers (1990), there are multicollinearity problems only in the presence of VIFs that exceed a value of 10. Considering that the largest VIF of our study is 1.46, it is possible to state the absence of multicollinearity problems.

Table 1 Means, standard deviations, VIFs and correlations

Variables	Mean	S.D.	VIF	ICDQ	OC	MO	IO	SO	FP	FS	FL	ES	EL	BS	SC
ICDQ	17.37	5.46		1											
OC	73.94	15.04	1.08	-0.314***	1										
MO	1.20	3.65	1.14	-0.294***	0.045	1									
IO	50.31	25.39	1.19	0.194**	0.088	-0.239***	1								
SO	2.33	5.29	1.05	-0.255***	-0.023	0.136*	0.020	1							
FP	10.22	24.32	1.12	0.182**	-0.138*	0.010	0.178**	-0.017	1						
FS	10.61	2.12	1.46	0.242***	0.091	-0.074	0.231***	-0.001	0.211***	1					
FL	6.13	7.53	1.27	0.109	-0.007	-0.086	0.113	0.058	0.079	0.285***	1				
ES	0.38	0.48	1.12	-0.029	-0.015	-0.029	0.019	0.071	-0.027	-0.236***	-0.216***	1			
EL	0.50	0.50	1.06	-0.154*	0.006	0.044	-0.085	0.046	0.030	-0.138*	0.024	0.125	1		
BS	11.31	3.55	1.18	0.252***	-0.092	-0.122	0.183**	0.079	0.098	0.287***	0.098	-0.020	0.008	1	
SC	0.58	0.49	1.12	0.217***	0.047	0.088	0.065	0.012	-0.015	0.175**	0.220***	-0.009	0.037	0.173**	1

Note: $n = 152$. S.D. = Standard Deviation. *** = significant at the 1% level; ** = significant at the 5% level; * = significant at the 10% level.

5.2 Regression Analysis

This study uses a regression model to test the effect of the characteristics of the ownership structure on the quality of IC information. Table 2 presents the results obtained. Firstly, the adjusted R^2 has a value of 0.334, which indicates the ability of the model to explain about 33.4% of the variance in the dependent variable.

Hypothesis 1 (H1) is supported by the results. In fact, they show a highly significant negative relationship between OC and ICDQ at $p = 0.000$. This means that companies with higher ownership concentration levels provide lower quality IC information. Companies characterized by more dispersed ownership have greater agency conflicts and must account for a greater number of shareholders with respect to whom they must try to mitigate information asymmetries. In this regard, the disclosure of higher quality IC information represents a means in the hands of the managers of these companies to reduce information asymmetries and consequently agency conflicts. In fact, IC information allows shareholders to better evaluate the company's future prospects.

Hypothesis 2 (H2) is also supported by the results. In fact, they show a highly significant negative relationship between MO and ICDQ at $p = 0.003$. This result shows that a greater concentration of shares in the hands of managers leads to the disclosure of lower quality IC information. Within companies with high levels of managerial ownership, there are lower levels of information asymmetry due to the absence of clear separation between ownership and management. This circumstance reduces the need to disclose high quality IC information, considering that the disclosure of such information represents a way to mitigate the information asymmetry and meet the information needs of the shareholders.

Table 2 Regression model results

Variables	Coefficient	Standard error	p-value	Sign.
Cons	19.051	2.770	0.000	***
OC	-0.114	0.024	0.000	***
MO	-0.324	0.105	0.003	***
IO	0.017	0.015	0.253	
SO	-0.247	0.070	0.001	***
FP	0.019	0.015	0.206	
FS	0.365	0.205	0.078	*
FL	-0.013	0.205	0.807	
ES	0.298	0.786	0.705	
EL	-1.301	0.743	0.082	*
BS	0.179	0.110	0.047	**
SC	2.369	0.776	0.003	***
N	152			
Adj. R^2	0.334			

*** = significant at the 1% level; ** = significant at the 5% level;
* = significant at the 10% level

Hypothesis 3 (H3), on the other hand, is not supported by the results. In fact, they show a non-significant relationship between IO and ICDQ. This result shows that the presence of institutional investors in the ownership structure has no significant effect on the quality of the IC information disclosed by the company.

Finally, even hypothesis 4 (H4) is not supported by the results. In fact, they show a highly significant negative relationship between SO and ICDQ at $p = 0.001$, while we had expected a positive relationship. Therefore, the results obtained show that state participation pushes firms to disclose lower quality IC information. An explanation could be represented by the possibility of the state shareholders to obtain information through privileged sources that go beyond the simple corporate disclosure, thus being better informed on company dynamics. This circumstance could push companies with high levels of state ownership to disclose lower quality IC information.

The results obtained therefore show a significant effect of the characteristics of the ownership structure on the quality of the IC information disclosed by companies. The key to interpret this effect is represented by agency theory.

6 Conclusions

This study examined the influence of the ownership structure on IC disclosure policies. More specifically, it examined the impact of some characteristics of the ownership structure on the quality of the IC information disclosed by companies within the integrated reports. The results demonstrated a negative effect of ownership concentration, managerial ownership and state ownership. Furthermore, they showed a non-significant influence of institutional ownership on the quality of IC information.

This study enriches the existing literature in several ways. Firstly, it represents the first study that relates the ownership structure and IC information in the context of integrated reporting, thus contributing to the heated debate on the effects of the ownership structure on disclosure. Secondly, it extends the field of application of agency theory, still little used to explain the relationship between ownership structure and the quality of the IC disclosure. Furthermore, this study stimulates numerous reflections on the effects that the different ownership structures have on business management and the level of transparency. In addition, this study sheds light on the ability of integrated reporting to represent a good container for IC information (Vitolla et al., 2020g). Finally, this study extends the literature relating to the determinants of IC disclosure, showing how three different characteristics of shareholders affect the quality of the IC information disclosed by companies.

The results obtained have important implications for companies and policymakers. In fact, in order to promote transparency, companies should prefer more dispersed ownership structures and avoid the existence of blockholders that could significantly limit the quality of the IC information disseminated. Firms should also avoid overlap between ownership and management as this could limit corporate

transparency. Policymakers, on the other hand, should favour the development of more dispersed ownership structures, preventing the creation of strong blockholders that could have negative effects on corporate transparency and on the quality of the IC information disseminated. In addition, policymakers should prevent the state and managers from holding large portions of shares as such circumstances could adversely affect corporate transparency and reduce the quality of IC disclosure.

This work has two important limitations. The first has a methodological nature and is connected to the choice of a cross-section analysis and not a panel analysis. The second is represented by the focus on only four characteristics of the ownership structure. However, these limitations offer important insights for future research. In fact, as regards the first limitation, future research can test the results of this study through longitudinal analyses, while, as regards the second limitation, future research will be able to examine the effect of other features of the ownership structure such as the presence of foreign shareholders.

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The Intellectual Capital Disclosure in the Management Report Before and After the European Directive 95/2014 in Italy



Michela Cordazzo, Laura Bini, and Lucia Marsura

1 Introduction

In the last years, an increasing number of national and international standard setters have underlined the need of new reporting rules on non-financial information. In 2014, the European Directive 95/2014 (European Union, 2014) required large public-interest companies (mainly listed companies, but also banks, insurance and other companies designated by national authorities as public-interest entities) to include a non-financial statement in their annual reports, containing information about employee-, social- and environmental-related matters, respect for human rights, anti-corruption and bribery matters. These requirements meet the information needs on all issues concerning non-financial disclosure that shareholders are interested in, which were mainly provided on additional voluntary corporate reporting like intellectual capital (IC) statements, value reporting, sustainability and integrated reports.

Among other effects, the transition from a voluntary to a mandatory non-financial information system is intended to significantly affect the debate between academics and professionals on the importance of IC resources as the main value drivers of companies' performance and business success (Lev, 2001), and their reporting in

M. Cordazzo (✉)

Department of Management, "Ca' Foscari" University, Venezia, Italy
e-mail: michela.cordazzo@unive.it

L. Bini

Department of Economics and Management, University of Florence, Florence, Italy
e-mail: l.bini@unifi.it

L. Marsura

PwC Italy, Milan, Italy
e-mail: lucia.marsura@pwc.com

Management Reports (MRs). Many reporting topics identified in the European Directive, indeed, show high overlap with the composing elements of IC.

Despite several frameworks having been proposed for IC reporting, none has been so successful as to become well established (Dumay, 2016). Thus, before the European Directive, IC disclosure has been provided by European companies mainly on a voluntary basis. Over time, several disclosure frameworks have been developed to support companies in framing their non-financial disclosure, including IC disclosure. Among these frameworks, the International Financial Reporting Standards (IFRS) Practice Statement “Management Commentary” (hereafter, MC Framework), issued by the International Accounting Standard Board (IASB) in 2010 (IASB, 2010), is considered one of the most influential for companies adopting IFRS (Catalfo & Wulf, 2016).

This study investigates IC disclosure reported by Italian listed companies before and after the introduction of the European Directive, with the aim to evaluate the effects of the new regulation on companies’ IC disclosure practices in their MRs. The European Directive has been transposed into Italian legislation by the Legislative Decree 254/2016 with no significant differences. Before this Legislative Decree, IC disclosure in Italy was mainly voluntary, as only few general requirements, included in the article 2428 of the Italian Civil Code, regulated non-financial disclosure in MRs. This makes Italy an interesting setting for this analysis.

This study focuses on the FTSE MIB 40 Index, which includes the largest public-listed companies. Due to the mainly narrative nature of IC disclosure, the analysis is based on a manual content analysis. To this extent, we develop a specific coding framework to examine IC disclosure in the pre- (2016) and post- (2017) Legislative Decree application.

Our explanatory analysis is a first attempt to evaluate the effects of the new regulation introduced by the European Directive on IC disclosure in MRs. Furthermore, our analysis enriches the debate about the regulation of non-financial disclosure, with a specific focus on IC disclosure.

2 The Regulation of Intellectual Capital Disclosure in Corporate Reporting

Starting from the early 1990s, the growing importance of intangible resources in creating company value has drawn attention on IC disclosure. Following heavy pressures on the development of widely accepted guidelines to help companies disclose IC information (OECD, 1999), several organizations, including European bodies, governments, academics and business associations have been involved in proposing useful frameworks for IC disclosure. The Guidelines proposed by the Measuring Intangibles to Understand and Improve Innovation Measurement (MERITUM) project funded by the EU (Canibano et al., 2002), and the Intellectual Capital Statement Project, founded by the Danish Ministry of Science Technology and Innovation (Mouritsen et al., 2003) represent the most prominent examples of

this trend. However, none of these initiatives had the expected success, as they have failed to produce any significant change in financial accounting rules (Canibano, 2018; Schaper et al., 2017). Recently, the idea of a specific IC reporting statement has been set aside and IC information is proposed as a central content in wider non-financial reporting frameworks, such as the integrated reporting project (IIRC, 2013) and the IASB's Management Commentary project (IASB, 2010).

The proliferation of reporting frameworks for non-financial reporting goes along with the issue of requirements on non-financial information, including IC information, by both national and supranational regulators. For instance, in 2014, the EU issued the *Non-financial Directive* (95/2014/EU), which requires European large public-interest companies to include a non-financial statement (NFS) containing information on a list of environmental and social matters. Even though the EU legislator does not explicitly refer to IC information in the Directive, the list of mentioned matters shows direct linkages to IC information. More specifically, companies are requested to disclose increasing amounts of information concerning environment-related and employee-related matters, respect for human rights, anti-corruption and bribery matters (Article 4, paragraph 1), which largely overlays the human capital and external capital pillars proposed in the IC conceptual frameworks. Additionally, companies have to present a description of the policies, outcomes and risks related to the above-mentioned matters, which closely recall the internal capital pillar of IC.

The European Directive has been transposed into Italian legislation by the Legislative Decree 254/2016 with no significant changes. Before the entry into force of this Decree, the article 2428 of the Italian Civil Code, regulating the content of MRs, only included a general reference to non-financial information. Companies were requested to provide a description of their research and development activities together with a fair review of the development and performance of the company's business and of its position, including information relating to environmental and employee matters to the extent it is considered necessary by the company. In the absence of a unique and established framework for IC disclosure, it is reasonable that listed companies preparing their financial reporting according to the IFRS consider the IASB's MC Framework as a reference framework for the reporting of non-financial information, including IC reporting. The MC Framework does not provide explicit information concerning IC reporting. However, several connections can be identified between the five constitutive elements identified by the IASB and IC information. For instance, the MC Framework recommends the description of the critical financial and non-financial resources available to the companies, including IC resources. Additionally, an explanation of the external capital of a company is required in the MC Framework, with a specific focus on how relationships affect the performance and value of the company. Finally, information about a company's structure, performance measurement system and risk management are close to the internal capital pillar of IC.

The Legislative Decree has significantly increased the amount of non-financial information in MRs, actually marking the transition from a voluntary to a mandatory non-financial information system. Given the overlaps between the non-financial

matters identified in the Legislative Decree and IC elements, the adoption of the European Directive is also seen as a significant event for companies to review their IC disclosure practices. Although the MC Framework is still a relevant reference for companies, the Legislative Decree refers to other non-financial reporting options for preparing the NFS. That, combined with the option to present the NFS within the MR or as a separate document, leaves companies with high discretion concerning the way to meet the requirements of the Legislative Decree.

3 Literature Review

According to the IC literature, IC disclosure represents one of the most effective tools to reduce information asymmetries caused by misrepresentation of intangibles in financial statements (Lev & Zarowin, 1999). It is argued that IC disclosure can reduce the information gap between managers and investors by outlining how IC adds value to the company (Mouritsen et al., 2001). At the same time, it is assumed that IC reporting allows companies to send positive signals to markets, contributing to improve investors' decision processes, with positive effects on both the cost of capital and perceived risk (Lev, 2001). Further, IC reporting is a valuable tool for companies to manage their stakeholders' relations and maintain their legitimacy in the society (Guthrie et al., 2004).

Starting from the 2000s, several studies have been conducted on corporate IC disclosure, focusing on different countries, but mainly in Western countries, and spanning several disclosure channels, with a predominance of annual reports (Campbell & Rahman, 2010). Since IC disclosure is largely narrative in nature, almost all empirical studies make use of content analysis technique, as this is considered one of the most appropriate methods for investigation when studying intangible values (Beattie & Thomson, 2007; Husin et al., 2012). According to Campbell and Rahman (2010), descriptive analyses have demonstrated a growing amount of IC disclosure in annual reports, with most IC information being qualitative in nature and with no established frameworks or appropriate reporting structure in place. External capital is identified as the most prominent component of voluntary IC reporting across different countries, like Italy (Bozzolan et al., 2003; Bozzolan et al., 2006), the Netherlands, Sweden and the UK (Vandemaele et al., 2005); Australia (Abeysekera & Sujana, 2007; Brüggem et al., 2009), the US (Sonnier et al., 2008) and Germany (Goebel, 2015). In investigating disclosure practices of Australian companies, Abeysekera and Sujana (2007) document non-structured and inconsistent IC disclosure, with the content and frequency of reporting varying across companies and industry sectors. In general, technology-based companies are found to disclose higher information compared to others (Bozzolan et al., 2003; Abdolmohammadi, 2005; Bozzolan et al., 2006; Oliveira et al., 2006; Whiting & Woodcock, 2011; Goebel, 2019). This is explained by the fact that technology-based companies show more IC investments compared to traditional industries and consequently face higher information asymmetries (Lev & Zarowin, 1999). Comparative studies show that

disclosure practices are better in those countries with an active role in the debate on IC reporting. For instance, Bounfour (2003) and Vandemaele et al. (2005) find that Swedish companies perform very well in disclosing IC, taking advantage of the leading role that Sweden has in the debate on IC management, measurement and disclosure.

Overall, these analyses document a gradual improvement of disclosure practices over time, with a positive trend in the amount of disclosure (Vandemaele et al., 2005; Sonnier et al., 2008; Campbell & Rahman, 2010) and an increase in the amount of quantitative information (Abeysekera & Sujana, 2007). In commenting on the increase in the amount of IC disclosure reported by US companies operating in traditional industries between 2000 and 2004, Sonnier et al. (2008) hypothesize an increased awareness by managers in traditional sectors on the importance of intellectual capital in their business, as well as the failure of traditional accounting model to provide value-relevant information to investors and stakeholders.

Goebel (2015) is one of the few studies to investigate IC reporting in a mandatory setting. More specifically, she analyses IC disclosure practices in MRs based on the German Accounting Standard (GAS) 15—Management reporting, distinguishing between required, recommended and voluntary disclosure. Her findings show that IC reporting in MRs exceeds the reporting regulation when companies additionally report on required and recommended information, suggesting that regulation encourages IC reporting.

4 Methodology

4.1 Sample

Our study analyses the companies of FTSE MIB 40 Index on 1 March 2020. This index includes the largest Italian public-listed companies applying the requirements of the Italian Legislative Decree 254/2016 as well as IFRS. The latter application allows such companies adopting the recommendations of the MC Framework for the preparation of their MR. Given the purpose of this study, we exclude companies listed after 2017 (n. 2 companies). Further, according to the conditions included in the Legislative Decree, the following companies were excluded: non-Italian companies (n. 6); companies with an employee number lower than 500 (n. 1); subsidiaries of a group both preparing the NFS and being part of the FTSE MIB 40 index (n. 1). Thirty companies comprise the final sample.

The Legislative Decree requires companies to prepare their non-financial statement (NFS) under five different options: (1) NFS is included in the MR; (2) NFS is included in the annual report, but separately from the MR; (3) NFS is a stand-alone report; (4) NFS is a sustainability report or (5) NFS is an integrated report.

4.2 Research Method

To investigate the effect of the European Directive 95/2014 on IC disclosure of Italian companies, we analyse the amount and the type of information included in the MRs before (2016) and after (2017) the issue of Legislative Decree 254/2016. More specifically, we compare IC disclosure in 2016 MRs with IC disclosure in 2017 MRs and NFSs.

The framework for data collection comprises the three categories of IC derived from previous literature, which are internal capital, external capital and human capital (Edvinsson & Malone, 1997; Stewart, 1997; Sveiby, 1997). The IC sub-categories and IC indicators originate from Guthrie and Petty (2000), Brennan (2001), Beattie and Thomson (2007), Campbell and Rahman (2010), Husin et al. (2012), but their selection also takes into account the requirements of the Italian Decree relative to the subject-areas on non-financial information. Our framework contains 20 IC sub-categories and 70 IC indicators (Table 1).

The use of content analysis is performed manually and through three steps (Beattie et al., 2004). The first step is the specification of an *ex ante* list of words for the IC indicators, which were developed from the list of words used by Brennan (2001), Bontis (2003), Vergauwen and van Alem (2005), Sonnier et al. (2008). The second step is the analysis of the text for the presence of specified words. The third step is the subsequent modification of the previous two steps, whether some coding errors occur between the manual coding of similar IC information. The content analysis is applied to both the MRs and NFSs of sampled companies.

The measurement of IC information is counted as 1 (presence) if a company discloses the IC indicator, 0 (absence) otherwise (Bozzolan et al., 2003; Guthrie et al., 2006; Cordazzo et al., 2020).

5 Results

Table 2 presents the descriptive statistics for the IC categories and sub-categories. More specifically, Panel (a) reports the percentages of IC indicators disclosed in 2017 NFSs, while Panel (b) refers to information included in 2017 MRs. The comparison of these data allows assessing how companies have distributed IC disclosure between the NFSs and the MRs in 2017. Additionally, the percentages of IC indicators included in the 2016 MRs are reported in Panel (c) that allows a comparison with disclosure practices before the adoption of the Legislative Decree.

The total IC information is on average higher in 2017 NFSs (63.76%) than in 2017 and 2016 MRs (37.43 and 45.10%). This suggests that the overall amount of IC information included in annual reports has substantially increased after the adoption of the Legislative Decree. Further, the total IC information is lower in 2017 MRs as compared to those in 2016 MRs. This may be a consequence of the adoption of

Table 1 Framework for collection of IC information

IC categories (3)	IC sub-categories (20)	IC indicators (70)
A. Internal capital	A.1. Intellectual properties	A.1.1. Patent
		A.1.2. Trademark
		A.1.3. Copyright
	A.2. Corporate culture	A.2.1. Vision
		A.2.2. Mission
		A.2.3. Code of ethics
		A.2.4. Principles of operation
	A.3. Management philosophy	A.3.1. Business model
		A.3.2. Company's growth
		A.3.3. Protect the environment
		A.3.4. Caring society
	A.4. Management and technological process	A.4.1. Corporate governance
		A.4.2. Organization structure
		A.4.3. Operative process
		A.4.4. Stock control
		A.4.5. Quality control/Quality process
		A.4.6. Performance appraisal
	A.5. Information systems	A.5.1. Computer network
		A.5.2. Database
		A.5.3. Hardware/software
	A.6. Research and development	A.6.1. R&D policies
		A.6.2. R&D budget
		A.6.3. Output and Successful rate
B. External capital	B.1. Financial relations	B.1.1. Shareholders, bankers and other providers of fund
	B.2. Brand building	B.2.1. Brand
		B.2.2. Product recognitions/awards
		B.2.3. Market share
	B.3. Customer	B.3.1. Customers
		B.3.2. Customers' loyalty
		B.3.3. Customers' trust
		B.3.4. Customers' feedback
		B.3.5. Customers' services
		B.3.6. Customers' satisfaction
		B.3.7. Number of customers
		B.3.8. Customers' segmentation
	B.4. Corporate reputation	B.4.1. Company name
		B.4.2. Favourable contract
		B.4.3. CSR activities
	B.5. Partnership	B.5.1. Business collaboration
		B.5.2. Research collaboration
		B.5.3. Franchising agreement

(continued)

Table 1 (continued)

IC categories (3)	IC sub-categories (20)	IC indicators (70)
		B.5.4. Licensing agreement
		B.5.5. Suppliers
		B.5.6. Government/public entities' collaboration
	B.6. Distribution channels	B.6.1. Supply/distribution channel
		B.6.2. Delivery systems
		B.6.3. Marketing, advertising and promotion activities
	C. Human capital	C.1.1. Employee numbers
		C.1.2. Value added per employee
		C.1.3. Years of service
		C.1.4. Average age of employee
		C.1.5. Vocational qualification
		C.1.6. Knowhow
		C.1.7. Employee morale and attitude
		C.1.9. Duties and responsibilities
		C.2.1. Profile of directors
		C.3.1. Continuing education offer to employees
	C.2. Directors' measurement	C.3.2. Career development
		C.3.3. Vocational development
		C.3.4. Recruitment/retention
		C.4.1. Employees by race, gender and religion
	C.3. Training and development	C.5.1. Union/club activity
		C.5.2. Employee thanked
		C.5.3. Employee opportunity to be involved with community
	C.4. Equity issues	C.6.1. Long term benefit
		C.6.2. Short term benefit
		C.6.3. Employee share and option ownership plan
		C.6.4. Working environment
	C.5. Employee relations	C.7.1. Entrepreneurial spirit
	C.6. Employee welfare	C.8.1. Safety policy and procedures
	C.7. Entrepreneurial skills	
	C.8. Employee safety	

non-financial mandated rules, which also implies a transfer of IC information from the MR to the NFS in 2017.

This trend is confirmed when we consider the IC categories. The *A. Internal capital* shows on average a level of IC information equal to 18.24% in 2017 NFSs, while it was 14.14 and 15.00% in 2017 and 2016 MRs. The category *B. External capital* (*C. Human capital*) presents a level of IC information equal to 20.52%

Table 2 IC information in 2017 non-financial statement vs 2017 and 2016 management reports

IC categories	IC sub-categories	Panel a) 2017 NFS				Panel b) 2017 Management report				Panel c) 2016 Management report			
		Mean (%)	Median (%)	SD (%)		Mean (%)	Median (%)	SD (%)		Mean (%)	Median (%)	SD (%)	
A. Internal capital	A.1. Intellectual properties	0.43	0.00	0.84		0.57	0.00	0.79		0.38	0.00	0.73	
	A.2. Corporate culture	4.14	4.29	1.35		1.67	1.43	1.65		1.52	0.71	1.77	
	A.3. Management philosophy	4.67	5.71	1.43		3.10	2.86	2.02		3.95	4.29	1.46	
	A.4. Management and technological process	5.71	6.43	2.39		5.67	7.14	2.32		5.57	5.71	2.10	
	A.5. Information systems	2.00	1.43	1.02		1.29	1.43	1.40		1.71	1.43	1.35	
B. External capital	A.6. Research and development	1.29	1.43	1.13		1.86	1.43	0.99		1.86	1.43	0.91	
	A. Sub-total	18.24	20.71	4.88		14.14	15.71	5.41		15.00	15.71	4.66	
	B.1. Financial relations	0.95	1.43	0.67		0.76	1.43	0.71		0.76	1.43	0.71	
	B.2. Brand building	1.57	1.43	1.40		2.10	1.43	1.42		2.14	2.86	1.32	
	B.3. Customer	6.71	7.86	3.32		4.86	4.29	2.89		5.52	5.00	2.90	
	B.4. Corporate reputation	3.86	4.29	0.65		2.52	2.86	1.15		2.86	2.86	1.28	
	B.5. Partnership	4.43	4.29	1.74		3.33	2.86	1.58		3.95	4.29	1.64	
	B.6. Distribution channels	3.00	2.86	1.19		2.52	2.86	1.36		2.29	2.86	1.26	
	B. Sub-total	20.52	21.43	6.14		16.10	17.14	5.25		17.52	18.57	5.28	
	C.1. Employee measurement	6.71	7.14	1.61		2.76	2.14	2.05		3.76	2.86	2.32	
C. Human capital	C.2. Directors measurement	1.29	1.43	0.43		0.76	1.43	0.71		0.95	1.43	0.67	
	C.3. Training and development	5.24	5.71	0.77		1.24	0.71	1.51		2.71	2.86	1.82	
	C.4. Equity issues	1.43	1.43	0.00		0.05	0.00	0.26		0.43	0.00	0.65	
	C.5. Employee relations	3.33	2.86	1.00		0.76	0.00	0.88		1.33	1.43	1.04	
	C.6. Employee welfare	4.29	4.29	1.17		0.76	0.00	1.21		1.57	1.43	1.58	
	C.7. Entrepreneurial skills	1.29	1.43	0.43		0.19	0.00	0.49		0.71	0.71	0.71	
	C.8. Employee safety	1.43	1.43	0.00		0.67	0.00	0.71		1.10	1.43	0.60	

(continued)

Table 2 (continued)

		Panel a) 2017 NFS			Panel b) 2017 Management report			Panel c) 2016 Management report		
IC categories		Mean (%)	Median (%)	SD (%)	Mean (%)	Median (%)	SD (%)	Mean (%)	Median (%)	SD (%)
	IC sub-categories									
	C. Sub-total	25.00	25.71	2.75	7.19	7.86	4.73	12.57	14.29	6.07
	Total IC information	63.76	68.57	11.37	37.43	41.43	12.58	45.10	50.00	14.01

(25.00%) in 2017 NFS, and 16.10% (7.19%) and 17.52% (12.57%) in 2017 and 2016 MRs. These data show that External capital is the most communicated IC categories in MRs, according to previous evidence on voluntary disclosure (Bozzolan et al., 2003, 2006). In 2017 NFSs, however, Human capital is the most disclosed category. Considering the detailed prescription required by the Legislative Decree on employee-related subject (such as the information concerning the actions taken to ensure gender equality, implementation of fundamental conventions of the International Labour Organization, working conditions, social dialogue, respect for the right of workers to be informed and consulted, respect for trade union rights, health and safety at work), it is not surprising that the category on Internal capital is the most disclosed in 2017 NFSs and that information on relative sub-categories are higher in 2017 NFSs than in 2017 MRs.

Moving to consider the trend of IC sub-categories, it is noted that the A.4. *Management and technological process* is the sub-category in the category A. *Internal capital* with the highest level of IC information over reports and years. This sub-category refers to the several components of company's business model, which are information required by both the Legislative Decrees 254/2016 and 231/2001. Additionally, the indicators included in this sub-category are recalled in MC Framework, concerning the elements *Nature of business* and *Resources, risks and relationships*. This may explain the attention paid by companies to this sub-category and also why the level of IC information remains substantially equal over reports and years (5.71% in 2017 NFSs, 5.67% in 2017 MRs, and 5.57% in 2016 MRs).

Within the category A. *Internal Capital*, the sub-categories A.3. *Management philosophy* and A.2. *Corporate culture* show higher level of IC information in 2017 NFSs compared to those reported in 2017 MRs. This may be explained by the fact that several non-financial reporting standards pay high attention to specific indicators, like A.2.2. *Mission*, A.2.3. *Code of Ethics* and A.3.3. *Protect the environment*. Additionally, it is important to underline that this information mainly refers to qualitative non-sensitive information. Thus, companies are amenable to disclose this information as it is not associated to high costs. This idea that companies are more inclined to disclose qualitative non-sensitive IC information is confirmed looking at the sub-category A.1. *Intellectual properties*, which registers on average the lowest level of IC information over reports and years (0.43, 0.57 and 0.38%). Intellectual properties information is associated to high proprietary costs, which may explain companies' reluctance in disclosing this information. Similar considerations are relative to the low level of disclosure concerning the sub-category A.6. *Research and development*. Despite this information being required by both the Legislative Decree and the national regulation on MR, companies show low level of disclosure on average equal to 1.29% in 2017 NFS, 1.86% in 2017 MRs and 1.86% in 2016 MRs. This result suggests that a regulation with a low level of specification is scarcely effective in favouring the disclosure of sensitive information with high associated costs.

The category B. *External Capital* comprises IC indicators relative to different types of relationships usually activated by a company. The disclosure of this

information is recalled in the Legislative Decree, when it refers to the description of risks related to business relations and environmental and social policies that affect a company's reputation. While the national MR regulation does not include specific requirements on these topics, the MC Framework recommends considering the relationships with external stakeholders in the preparation of MR, especially in the element concerning *Resource, risk and relationships*.

Our analysis shows that companies disclose the highest level of IC information in the sub-category *B.3. Customer* in both the 2017 NFSs (6.71%) and 2017 and 2016 MRs (4.86 and 5.52%). Since neither the NFS regulation nor the MR regulation identifies the relation with customer as the most important, it is likely that companies consider this information as more relevant than others, or alternatively, less sensitive compared to the relationships involving suppliers, business contract, or industrial partnerships. The lowest level of IC information is relative to *B.1. Financial relations* (0.95, 0.76 and 0.76%), due probably to higher disclosure on financial activities and fund providers in the financial sections of the annual report.

The category *C. Human capital* is a required subject-area under the Legislative Decree, while the national MR regulation only includes a general reference to employees-related information. This explains the highest level of IC information equal to 25.00% in 2017 NFSs, compared to the percentages of 7.19% in 2017 MRs and 12.57% in 2016 MRs. The sub-categories *C.1. Employee measurement*, *C.3. Training and development* and *C.6. Employee welfare* show on average the highest level of IC information across reports and years. The fact that MC Framework strongly recommends the use of results, performance measures and indicators in preparing an MR may explain the results for the sub-category *C.1. Employee measurement*. Additionally, the existence of many standardized quantitative measures could support companies in reporting the performance of their employees.

6 Conclusions

This chapter provides an analysis of the disclosure practice concerning IC information in Italian annual reports before and after the adoption of the European Directive 95/2014 which marks the transition from a voluntary to a mandatory setting for non-financial disclosure in Italy.

Our results show that the inclusion of the NFS in the annual report has increased the overall amount of IC information. While External capital is the most disclosed category in MRs, in line with previous evidence on voluntary disclosure (Bozzolan et al., 2003; Bozzolan et al., 2006), Human capital is the most disclosed category in NFSs. This change seems to indicate that the presence of specific requirements in the rule, like those referred to employees-related information in the Legislative Decree 254/2016 induces companies to provide a more complete disclosure compared to a voluntary disclosure regime. This result confirms Goebel (2015) arguing that regulation encourages IC reporting.

On the other hand, our results signal some concerns in the disclosure of IC information after the adoption of the mandatory regime. First, it is noted that IC disclosure in 2017 MRs is lower compared to 2016 MRs, suggesting a transfer of disclosure from MR to NFS in 2017. This is not surprising, considering that the NFS and MR regulations show some overlaps. However, this raises the need of a clarification about the objective of MR and NFS disclosure with regard to IC information. Otherwise, the understanding of two potentially overlaid documents could be confusing for stakeholders. In this perspective, the present chapter offers a contribution to the IASB's internal debate about the future role of the MC Framework as a guideline for MR disclosure.

Additionally, results concerning the categories of IC (Internal, External and Human Capital) suggest that IC disclosure focuses, at least in part, on qualitative, non-sensitive, information. On the other hand, companies' attitude to communicate quantitative information seems to be higher for those issues for which standardized measures exist (i.e. employee measurements). These findings raise implications for the regulation of IC information. More specifically, regulators should consider that companies could use qualitative information on issues associated to high proprietary costs to be compliant with the rule. Since qualitative information risks to be rhetorical and of poor value, or even worse, to be used by management in an opportunistic manner, regulators should discourage these practices through specific requirements on the use of quantitative measures, whenever possible. Considering that standardized measures are usually developed and widespread at industry level for relevant IC issues, their disclosure could increase the credibility and reliability of qualitative information. Additionally, regulators should consider the need to implement an effective mechanism of control that assesses the effective materiality of qualitative IC information provided by companies and an effective system of enforcement, to avoid that companies limit their engagement to IC disclosure to the minimum requested to be compliant.

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The Effect of Non-financial Information about Intellectual Capital on the Financial Performance of Non-profit Companies: An Impact Accounting Perspective



Luigi Corvo, Lavinia Pastore, and Emanuele Doronzo

1 Introduction

This chapter enquires about the effect of non-financial information about intellectual capital on the financial performance of non-profit organizations (NPOs). Firstly, it is important to focus on the intellectual capital concept since it is the driving object of the analysis.

Studies on intellectual capital (henceforth, IC) are broad; one of the first definitions is the one provided by Edvinsson and Sullivan in 1996. IC is the knowledge that can be converted into value, and which may have a positive impact on an organization's present and future performance, as well as on corporate value (Bontis et al., 2000; Chen et al., 2005; Youndt & Snell, 2004).

Initially, it was an issue investigated mainly for-profit companies. The importance of IC on NPOs is a perspective that has been strongly raised in the last decade in Kong's studies (2007–2008). IC is considered to be a conceptual framework for a more effective process of strategic management of NPOs (Kong, 2007, 2008).

Studies on IC (for instance Bontis, 1996; Bontis et al., 2018; Edvinsson & Malone, 1997; Marr, 2005; Roos et al., 1997; Stewart, 1997; Veltri & Bronzetti, 2015) agree that it is a complex concept. Therefore, IC is divided into three components:

L. Corvo · L. Pastore (✉)

Department of Management and Law, University of Rome “Tor Vergata” and Open Impact research spin-off, Roma, Italy

e-mail: luigi.corvo@uniroma2.it; pastore@economia.uniroma2.it

E. Doronzo

Department of Management, Finance and Technology, LUM University, Bari, Italy

e-mail: doronzo@lum.it

- Human capital (henceforth, HC), i.e., the attitudes, skills, experiences and skills of the members of an organization, or of an organizational system more generally (Bontis, 1999; Bontis et al., 2002)
- Structural capital (henceforth, SC), i.e. the organizational culture, routines and practice of the organization. Sometimes it is called organizational capital
- Relational capital (henceforth, RC), i.e. the relations with users and multi-stakeholder relationships of the organization.

Each of these components can be divided into sub-dimensions that relate to the analysis of IC in an organization (Bontis et al., 2018). This aspect is looked at in depth in the theoretical framework section since it is at the basis of this analysis.

According to Edvinsson and Malone (1997, pp. 145–146), the understanding of each component is essential because they create value for the organization in their intersection.

In our research, we attempt to investigate whether the components of IC affect the financial performance of the NPOs.

The chapter is structured as follows: a theoretical framework section, where the sub-dimensions used for the analysis are identified according to literature; a methodological section, where the research design and the sample are presented as well as the statistical model used; a findings section, where the results are presented; and a conclusion section, where limitations and further research perspectives are pinpointed.

2 Theoretical Framework

The studies about IC management did not explore sufficiently the case of NPOs (Benevene et al., 2019). Few researches developed in this field focused more on the assessment of IC rather than conceptualizing IC as a key driver for reshaping the whole strategic management processes (Kong, 2008). The specificity of NPOs seems to enhance the potential of IC and, more in detail, the presence of intangible resources, the strong linkage with the territory and the social mission-oriented perspective have been singled out as the main enabling characteristics of IC development in NPOs (Helmig et al., 2004; Veltri & Bronzetti, 2015).

Another aspect that makes IC relevant for NPOs relates to their objective of social outcome maximization, thus boosting the co-production with users and stakeholders of human needs centred goods and services (Borzaga & Galera, 2012; Defourny, 2001). The quasi-institutional behaviour coupled with the profit distribution constraint makes this sector particularly interesting for both policymakers and private investors. Through these lenses can be read the attempts of the OECD to provide guidance for the interpretation of the different configurations of non-profit sectors across countries, by addressing the legislative differences, the sectors of interventions and the cultural evolutions in terms of social entrepreneurship attitude and impact management improvement (OECD, 2014).

This research is focused on the Italian NPO context, characterized by a profound change over the last 20 years. The national census (ISTAT) demonstrates a growing trend of the number of NPOs (more than 300,000, +28% compared with 2001 data), number of employees (almost 700,000, +39%) and number of volunteers (almost 5 million, +43%). These data confirm the non-profit sector as the most dynamic sector of the Italian socio-economic system. On the other side, this sector is largely dependent on public resources; it is important to consider that between the 1980s and 1990s it was a “protected market” (Borzaga & Fazzi, 2011) and it switched rapidly into a highly competitive market (Benevene & Cortini, 2010). Today it is characterized by the presence of small-sized organizations that have problems both of financial sustainability and HR. According to the last census (ISTAT) half of the Italian NPOs have a budget below 15,000 euros (54.9%) and an average of two employees, one external worker and 16 volunteers. Given these conditions it is particularly interesting to investigate the role of IC.

As anticipated in the introduction, IC research has more than two decades of investigations. Therefore, different frameworks that address how to measure IC have been developed (Dumay, 2009; Sveiby, 2010). According to Veltri and Bronzetti (2015), the interest shown in academic studies does not find the same echo in practice. Relatively few organizations measure and disclose their IC and, moreover, consider it for strategic decision making. Aside from some pioneering companies, managers and stakeholders do not embed non-financial disclosure of IC in their company strategies. IC measurement and disclosure should be considered even more fundamental in NPOs because they are organizations mainly based on relationships, and intangible services (Adams & Simnett, 2011; Guthrie et al. 2009; Kong & Prior, 2008; Kong et al. 2009; Sillanpää et al., 2010).

Most IC studies agree on the distinction between its three components: HC, SC and RC. Human Resources (henceforth, HR) concerns the human resources of the organization and their skills. It is usually measured considering both the internal and external dimensions. Training and education are the most important investments in HC. NPOs are made up of people who have knowledge, skills, capabilities, problem-solving abilities, personal traits, creativity and willpower, all principally emanating from education (Bontis et al., 2000, 2018).

Smaller organizations, such as NPOs, usually prefer to invest in providing training to internal resources than attracting external qualified resources (Baldwin & Johnson, 1996). Because of the financial constraints that characterize Italian small-sized NPOs, the resources for training and HR development are usually limited. Moreover, there is a higher complexity in balancing the HR management in NPOs due to the different types of individuals involved: staff, volunteers, donors and other stakeholders (Abzug & Webb, 1999). Since most NPOs are labour-intensive organizations that deliver intangible services, the HC component is the most important (Boyle et al., 2007). Through people, the mission of the organization is delivered (Veltri & Bronzetti, 2015).

Hereafter is a description of the variables considered to be sub-dimensions of HC using KPIs. For each sub-component, the name of the KPI is described and its measurement. These variables, taken from the study of Bontis et al. (2018), were

applied to social cooperatives that represent the most entrepreneurial and close-to-market form of organization within the non-profit sector. Our study is focused on the NPOs and this difference implies the selection and adaptation of some variables for each component of the IC.

Relating to the HC, the variables considered are:

- KPI Training—index composed of the number of yearly training sessions, the presence of an assessment on the training provided (measured by a dummy variable) and the perceived quality of the training (measured using a Likert scale).
- KPI Value-added_Emp. Cost—the measure is the total value added (total revenues minus external operating costs) scaled by total employee cost.

SC comprises the infrastructure for HR and knowledge; it is composed of organizational culture, managerial philosophy, organizational processes and information systems (Benevene et al., 2017). SC is fundamental for the existence of the organization. Since the organizational culture of NPOs is strongly influenced by the social mission, it is usually measured considering the processes of service delivery that the organization has to develop despite the scarcity of resources (Borzaga & Fazzi, 2000). For this reason, SC in NPOs focuses on the efficiency and effectiveness of services unlike for profit companies, where usually it focuses on measuring the knowledge systems and other issues of organizations' culture (Weick, 2001). For measuring SC, using Bontis et al. (2018), the KPI considered is the one related to Services. This KPI measures the number of provided services scaled by total employees.

RC concerns the set of relationships established with stakeholders. According to Anheier (2000), NPOs are 'genetically' multi-stakeholder organizations. They are involved in external relationships continuously with other NPOs, governments, donors, users, etc. The key point is the quality and the strength of those relationships that can develop more opportunities for the NPO and create new opportunities for resources (Kong, 2010; Ordóñez de Pablos, 2003). NPOs co-generate value within their environment of relationships.

Hereafter is a description of the variables considered as sub-dimensions for measuring RC using KPIs (Bontis et al., 2018):

- KPI Community—the measure is the quality of relationships with the reference community. It is measured by a Likert scale (1–5) and it represents the judgment given by the respondent about the quality of the community.
- KPI Partnership—the measure is the quality of relationships with partners. It is measured by a Likert scale (1–3) and it represents the judgment given by the respondent about the quality of relationships with the partners (other NPOs, public administration, local stakeholders).
- KPI Network—the measure consists in the inclusion or not of the organization into a network. It is a dummy variable that investigates if the organization is part of a consortium or other networks.

The research hypothesis is whether or not IC sub-dimensions (HC, RC, SC) affect the financial performance of NPOs. The financial performance is crucial for the

existence through time of the organization and, therefore, for fulfilling the social mission (Bontis et al., 2018). Economic sustainability is usually one of the weaknesses of NPOs, so it will be interesting to observe if the IC sub-components might play a role in influencing it.

3 Methodology

The research was conducted in a region of central Italy. This research is a first exploratory study that intends to be extended to all Italian regions. The Umbria Region was chosen as the first test because they are conducting a specific public policy on NPOs that aims at enhancing their capacity building. Moreover, it is a homogeneous and compact territory.

The Italian statistical institute (ISTAT) records 6,745 NPOs in Umbria, which employ (as paid employees) 11,632 people, representing respectively 1.96% and 1.43% of the national total (343,432/812,706).

The research design was restricted to those NPOs with more than two employees due to the need to analyse the HC with a minimum amount of information per single unit of analysis. In the Umbria Region the NPOs that have more than three employees total 561 (ISTAT census, 2017).

A survey was sent via email with a cover letter in July 2020 to the founding members of 561 NPOs.

A total of 53 completed surveys were returned, giving a response rate of 9.4%. Those NPOs operate in different sectors such as Environment, Social Assistance and Civil Protection, International Cooperation and Solidarity, Culture, Sport and Recreation, Philanthropy and Promotion of Volunteering, Education and Research, Religion, Health, Economic Development and Social Cohesion, Protection of Rights and Political Activity. The sectors of activity are the same categories used by the ISTAT census. The final sample consists of 53 NPOs: 40% social cooperatives, 31% associations, 23% social enterprises and 6% foundations.

The survey was divided into different sections: a profile set of questions where general information about the organization and the respondent was asked; a section dedicated to economic and financial information; and a third section dedicated to information on IC. The investigation of IC sub-components was divided into qualitative and quantitative questions, some of which related to the perception of the respondent; for those questions a Likert scale was used from 1 to 5 or 1 to 3.

The principal component of each IC sub-dimension has been identified via a principal component analysis (PCA) and then an orthogonal varimax rotation has been carried out. In order to verify the effect of each sub-dimension on the financial performance of NPOs we applied an ordinary square regression model.

The dependent variable is represented by ROA, a measure that is commonly used in financial analysis for informing about operating profitability and it is measured as the ratio between the profit obtained in the considered year (2019) and total assets (Kong & Thomson, 2009). The choice of the economic parameter when discussing

non-profit organizations is always a challenge to be identified. The ROA might not be considered a coherent variable for not-for-profit entities since they are organizations very diverse from for profit companies where this measure is commonly used. However, we have decided to adopt this variable in line with Bontis et al.'s (2018) study in which they analyse IC components and ROA, opening up this stream of analysis in the Journal of Intellectual Capital.

It is important to underline that NPOs, even if driven by a social mission, have the constraints of operating in balance and of respecting the economic sustainability conditions in order to last over time. This requires the achievement of an efficient and effective management of tangible and intangible resources.

The independent variables are the sub-dimensions of the three components of the IC. To each sub-dimension we have associated a KPI. Both the dependent and independent variables have been normalized.

As a control variable, the sector of activity was considered, according to the ISTAT categorization. Usually in NPOs studies (Bhagat & Bolton, 2008; Core et al., 1999; Kirk & Nolan, 2010) a control variable frequently used is the geographic position. Since the sample is concentrated in a single region with a homogeneous context it was not necessary to consider it.

The model is represented by the following formula:

$$ROA_i = \alpha_i + \beta_1 Service Index_i + \beta_2 Training Index_i + \beta_3 Value Added Index_i + \beta_4 Partnership Index_i + \beta_5 Community Index_i + \beta_6 Network Index_i + \beta_7 Sector Index_i + \epsilon_i.$$

Hereafter is a description of each variable:

- ROA is the return on assets
- Training is an index composed of the number of yearly training sessions, the presence of an assessment of the training provided (measured by a dummy variable), and the perceived quality of the training (measured by a Likert scale)
- Value Added index is the total value added scaled by the total employee cost
- Services is the number of provided services scaled by total employees
- Community is the quality of relationships with the reference territorial community assessed by a Likert scale from 1 to 5
- Network is the presence of stable collaborative relationships with other actors assessed by a dummy variable
- Partnership is the quality of relationships with partners assessed by a Likert scale from 1 to 3
- Sector is a categorical variable that takes a value from 1 to 10.

4 Findings

Table 1 presents the descriptive statistics for the sample.

Table 1 Descriptive statistics

Variable	Obs	Mean	SD	Min.	Max.
ROA	53	0.0216	0.0565	−0.1152	0.28333
Training	53	0.1243	0.2736	0	0.7500
Value Added	53	0.1789	0.6365	0	1
Community	53	3.2452	1.5677	1	5
Partnership	53	2.5660	0.7470	1	3
Network	53	0.6981	0.4634	0	1
Services	53	0.4171	0.3448	0	1

Table 2 Correlation matrix

Variables	ROA	Training	Value Added	Community	Partnership	Network	Services
ROA	1				.		
Training	0.8476	1					
Value added	0.7412	0.8295	1				
Community	0.7289	0.8124	0.9546	1			
Partnership	0.5386	0.5832	0.9005	0.7823	1		
Network	0.5474	0.5548	0.8648	0.8185	0.8918	1	
Services	0.8303	0.8921	0.9187	0.9439	0.6962	0.7534	1

The average ROA is equal to 2.16% with a standard deviation of 0.0565 and a minimum value of −11.52% and a maximum one of 28.33%. The training index is on average 0.1243, with a minimum value of 0 and a maximum value of 0.7500.

The value added per employee cost is on average equal to 0.1789, with a minimum of 0 and a maximum of 1. The variables community, partnership and network represent the quality of relationship with stakeholders, the averages are 3.2452, 2.566 and 0.6981, respectively. Services average equal to 0.4171.

Table 2 shows the matrix correlation between the variables.

As already mentioned in the methodology section a PCA was performed with the aim of identifying the main factors for each IC sub-dimension.

Concerning HC, the factors identified are Training and Value added. Training is related to the organization's education system and it is calculated through an index composed of three items: (1) the number of yearly training sessions, (2) the presence of an assessment on the training provided (measured by a dummy variable) and (3) the perceived quality of the training (measured by a Likert scale). The Value-Added factor is a measure of productivity of the organization per employee. The cumulative variance of these two components for HC is 65.11%.

Concerning the SC, the main component identified after a factor analysis is the one related to services. It is a measure related to the capability of the organization to satisfy social need by providing services. The cumulative variance explained is 72.16%.

Table 3 Model

ROA	Coeff.
Training	0.1995***
Value Added	0.0403*
Community	
2	0.0041
3	0.0045
4	0.0024
5	0.0828
Partnership	
2	−0.0043
3	−0.0009
Network	0.0031
Services	0.1637**
Sector	−0.002

Notes: Number of obs = 53, $F(11.41) = 17.23$, $\text{Prob} > F = 0.0000$; $R^2 = 0.8120$; Adj $R^2 = 0.7673$; *, **, *** Significant at 0.10, 0.05 and 0.01 levels (two-tailed test), respectively

Finally, three main components have been identified for the RC: (1) partnership, which concerns the quality of relationships with external stakeholders and the capability of having stable linkages; (2) community, which investigates the quality of relationships with the territory where the organization operates; and (3) network, which investigates the belonging to umbrella organizations or sector-driven organizations. These three components explained a cumulative variance of 77.19%.

Table 3 shows the results of the model that investigates the effects of IC sub-dimensions on the economic performance of NPOs.

There are significant and positive relationships between the ROA and the following variables: the one related to KPI Training (0.1995), significant to 1%; the KPI value added (0.0403) significant to 10%; and finally, the KPI Services (0.1637) significant to 5%. The adjusted R^2 of the model is 76.73.

It is interesting to note that two of them (Training and Value Added) are sub-components of HC while the third one (Services) is a component of SC. The sub-dimensions of RC do not show positive and significant relationships.

5 Conclusions

The findings show the determinant role of HC for determining the positive financial performance of NPOs. Both the training and the value-added results are significant in terms of capacity to influence the ROA of the organizations and this underlines the importance of a people-centred perspective in contexts characterized by a service-dominant perspective.

The training variable indicates the investment made by these organizations in order to continuously improve the knowledge capacity; it affects all the steps of the

organizational life cycle and determines the capabilities of tuning strategies and services through the proactive contribution of all the employees.

The value-added variable is measured by scaling the total value added (total revenues minus external operating costs) by the total employee cost and it represents the greater value generated by the organization per single employee. It is interesting to note the circular relationship between these two variables: the presence of a positive value added per single employee may represent the reason why the NPO can invest in training which then turns into better financial performance, thus allowing the value-added generation. The presence of this circular relationship requires further investigation.

The SC, and in particular the service variable, results significantly affect the financial performance and it measures the number of provided services scaled by total employees. This means that when the NPOs enlarge the variety of services delivered and the employees are grouped in service teams the financial performance appears to respond positively. It is explained by the resilience concept: the service variety empowers the capacity of the NPOs to be adaptive in these volatile times, considering that the stability of funding and the persistence of financial relationships with public administrations and other relevant funders is not stable anymore.

These considerations may also explain the reason why the RC does not affect the financial performance. The first reason is related to the lack of collaborative arrangements between public administrations, that are their main partner, and NPOs. While the issue of reshaping the administrative procedures in co-production processes is largely discussed in the literature and has been regulated by the Italian Third Sector Reform in terms of co-governance and co-design arrangements, the evidence emerging from the observation of the relational practices shows a resistance to changing the bureaucratic approach both in social procurement and welfare services provision.

The main limitation of this work is represented by the restricted sample size in terms of number of units of analyses considered and size of territory covered. Accordingly, we aim at enlarging the sample size and extending the analysis to the whole Italian territory, thus enabling better analysis for determining the role of IC in the NPO arena by distinguishing the different organizational forms and the entrepreneurial cultures beside the non-profit oriented geography of value.

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Part IV

Integrated Reporting

Theories in Integrated Reporting and Non-financial Information Research



Daniela Mancini, Palmira Piedepalumbo, Riccardo Stacchezzini,
and Damiano Cortese

1 Introduction

The investigation around firm's value creation and its representation through meaningful measures and reports has always been one of the key topics in the field of business administration and accounting studies, particularly in Italy (Ceccherelli, 1961; Giannessi, 1979; Marchi, 2017; Amigoni & Vitali, 2003).

In the last decade, one of the most interesting views in the field of business reporting is the need to adopt an integrated representation of the way in which organizations, in the private and public sectors, create, preserve and erode value over time, as a projection of the integrated thinking in managing organizations (IIRC, 2021).

D. Mancini, authored Sects. 1, 2, 4.1, and 5; P. Piedepalumbo authored Sects. 4.2 and 4.5, R. Stacchezzini authored Sects. 3 and 4.3; D. Cortese authored Sect. 4.4.

D. Mancini (✉)
Faculty of Law, University of Teramo, Teramo, Italy
e-mail: dmancini@unite.it

P. Piedepalumbo
Department of Business and Economics, University of Naples "Parthenope", Napoli, Italy
e-mail: palmira.piedepalumbo@uniparthenope.it

R. Stacchezzini
Department of Business Administration, University of Verona, Verona, Italy
e-mail: riccardo.stacchezzini@univr.it

D. Cortese
Department of Foreign Languages, Literatures and Modern Cultures, University of Torino, Torino, Italy
e-mail: damiano.cortese@unito.it

In almost ten years, a lot of research has been developed to investigate Integrated Reporting (IR), and some theories have been adopted to interpret and guide studies.

The main aim of this contribution is to identify the theories most frequently adopted in the field of IR research and to highlight the circumstances in which these theories have been applied.

This investigation is useful from different perspectives. It represents a guide for business administration and accounting researchers who want to investigate IR, because it gives them a clear overview of theories and contexts to choose the theoretical lens which fits better with their research objectives. Secondly, it helps organizations and practitioners to adopt a comprehensive view in managing processes according to an integrated thinking and in reporting inputs, outputs, outcomes and performances according to an integrated representation and interpretation. Finally, this study also wants to be a stimulus to develop new theories able to capture the effective meaning of integrated thinking in business reporting.

We developed a first analysis of international literature regarding IR to find out the main theories mentioned in IR studies and how they were employed in interpreting issues concerning IR.

The remainder of the chapter is organized as follows. Section 2 describes the research methodology; Sect. 3 introduces the framework adopted to conduct the analysis of the theories. Section 4 presents the results of analysis; and Sect. 5 the discussion and concluding remarks.

2 Research Methodology

We developed a review of the academic literature on the topic of integrated reporting and theories applied to interpret motivations and research findings. To this purpose, we collected the papers of our dataset preliminary defining the keywords, the databases where to search for the studies and the research protocol (e.g., Cuganesan et al., 2014; Jesson et al., 2011).

First, the keywords as “integrated report*” or “non financial disclosure” or “non financial information” were combined (employing the operator AND) with “theor*” to limit the analysis to papers related to theories in IR. The above-mentioned keywords were searched in the title, abstract and keywords of the scientific paper.

Second, two international scientific databases (Scopus, ISI Web of Science) were searched to build a reliable dataset (Cucciniello et al., 2017; Manes Rossi et al., 2020) suitable for depicting the international debate on IR.

We also defined a specific review protocol and shared the inclusion criteria of the search. In particular, we decided to only take into account research articles published from 2013 to 2020 (November), written in English. The publication time frame was set between 2013 and the month of database consultation (November 2020). This time span was determined by considering as a starting point the year when the IIRC published the International <IR> Framework to explain the fundamental concepts of integrated reporting.

Finally, we considered completed and good quality research to be included in the dataset by selecting articles published in academic journals.

Using the keywords identified and applying the protocol, multiple search rounds were conducted in the international databases. The records found were integrated and the duplicates eliminated. In the end, we have obtained a dataset of 294 papers, which we further refined to select papers coherent with the topic of this research. To perform the analysis of theories in IR studies, the authors screened the initial dataset of 294 papers reading the title and abstract and, if needed, the introduction of each paper. The authors' preliminary shared some criteria to filter the dataset, they decided to eliminate records if:

- (1) The document title or the journal title included the word “marketing”.
- (2) The article did not explicitly consider any theory.
- (3) IR or non-financial information were marginal topics in the article.
- (4) IR was investigated from a viewpoint far from the research interest.

Doubtful cases and discrepancies in the classification were discussed among the authors. At the end of this iterative process, 97 studies were included in the dataset.

3 The Framework Used to Frame Research on Integrated Reporting Practices

To understand how theories can be conveniently adopted to frame the analyses of integrated reporting processes and disclosures, we developed a framework based on the *research approach* and the *research perspective*.

The research approach is simplistically distinguished into qualitative and quantitative ones. A *qualitative approach*—usually based on interviews, in-depth documental analysis, ethnography, etc.—is interested in seeing through the eyes of people being studied and aims at in-depth understanding of specific change processes and stories. Differently, a *quantitative approach* is dominated by quantitative techniques, using statistical analysis of data to study the subject matter “at a distance”. It strives for an objective, clinical means of analysing empirics.

With reference to the research perspectives, we distinguish between external and internal ones. An *external perspective* is focused on the impacts of reporting practices, showing how these practices influence stakeholders' perceptions and behaviour. An external perspective can also be used to assess the effect of external determinants (e.g., the institutional context) on the reporting practices. Otherwise, an *internal perspective* facilitates the analysis of the reporting preparation processes, exploring how information is “constructed” and the role organizational actors play in these processes.

Making the two mentioned aspects (i.e., method and perspective of analysis) interact allows us to develop a matrix that classifies theories into four categories.

Table 1 The RA/RP Matrix of the theories used to frame research on integrated reporting practices

		Research approach (RA)	
		Qualitative	Quantitative
Research perspective (RP)	Internal	1 Theories adopted in qualitative studies on reporting processes	2 Theories adopted in quantitative studies on reporting processes
	External	3 Theories adopted in qualitative studies on reporting impacts or determinants	4 Theories adopted in quantitative studies on reporting impacts or determinants

Table 1 portrays this research approach (RA)/research perspectives (RP) matrix of theories.

4 Results

4.1 An Overview of the Theories

Articles included in our dataset cover a period of seven years, from 2014 to 2020. The number of publications is increasing every year and, in the last two years, more than 50% of the articles included in the dataset are concentrated (30 papers in 2020, and 25 papers in 2019).

Table 2 shows the most cited theories and their frequencies within our dataset. We have registered 30 different single theories and the most cited are agency theory and legitimacy theory. Most of the articles are based on a single theory, but, in the last two years, there is most of the multi-theory research (20 articles out of 28). Legitimacy theory is the most frequent in multi-theory research.

4.2 Theories Adopted in Qualitative Studies on Reporting Processes

The quadrant of theories adopted in qualitative studies on reporting processes is populated by 26 papers.

Theories that are most frequently used to support the hypotheses made by the various authors of the selected papers (Table 3), are, the legitimacy theory, the institutional theory, and the organizational change theory. However, there are also less frequent theories such as practice theory, neo institutional theory.

The *legitimacy theory* is adopted by the largest number of papers (5 papers). It relies on the assumption that organizational actions and practices are consistent with the expectations of the surrounding systems (Lindblom, 1994; Palazzo & Scherer, 2006; Suchman, 1995). This theory is suitable to explain the responses that the

Table 2 The distribution of theories within the dataset

	Frequency
<i>Theories</i>	
One theory	69
Two theories	22
More than two theories	6
<i>Top Ten single theories</i>	
Agency	9
Legitimacy	8
Impression management	7
Stakeholder	6
Organizational change	4
Signalling	3
Practice	3
Institutional	3
Diffusion of Innovation	3
Value based	2
<i>Top multiple theories</i>	
Legitimacy and Stakeholder	4
Legitimacy and Signalling	2
Legitimacy and Agency	2
Agency and Stakeholder	2

organization gives to changes in the corporate environment such as, for example, the inclusion of non-financial information in disclosure practices (Vourvachis et al., 2016; Kountouri et al., 2019).

The number of studies using the legitimacy theory may be justified by the fact that the main impetus for the adoption of IR is to maintain legitimacy (Higgins et al., 2014; Steyn, 2014). In fact, numerous studies have used the legitimacy theory to explain the nature of IR practices (Setia et al., 2015; Solomon & Maroun, 2012; Wild & van Staden, 2013).

Dowling and Pfeffer (1975) have suggested that the legitimacy theory provides valuable insights into the behaviour of organizations regarding corporate reporting.

In some of the articles analysed, the legitimacy theory, also supported by other theories, such as institutional or stakeholder theories, is used to explain the reasons that push different types of companies to use IR as a type of reporting to confirm or strengthen the legitimacy towards external stakeholders also following extraordinary events or with a negative impact on the corporate reputation. Other articles, on the other hand, examine how the legitimacy theory influences the quality of voluntary information disclosed by companies through the three main reports (annual report, sustainability report and integrated report) and highlighting that the voluntary information disclosed with the IR is qualitatively superior. In meeting their legitimacy needs, organizations should also cater to the needs of stakeholders. According to stakeholder theory, in fact, companies undertake to offer transparent information

Table 3 Theories adopted in qualitative studies on reporting processes

Theory	References	Frequency
Legitimacy theory	van Bommel (2014), Maroun (2018), Romero et al. (2019), Marasca et al. (2020), Richard and Odendaal (2020)	5
Organizational change theory	Stubbs and Higgins (2014), Maroun (2018), McNally and Maroun (2018), Mio et al. (2020a), Iacuzzi et al. (2020)	5
Institutional theory	Atkins et al. (2015), Corsi and Arru (2020), Marasca et al. (2020), Mio et al. (2020a)	4
Practice theory	Lodhia (2015), Al-Htaybat and von Alberti-Alhtaybat (2018)	2
Neo institutional theory	Atkins et al. (2015), Rossi and Luque-Vílchez (2020)	2
Credibility mechanisms	Zhou et al. (2019), Wang et al. (2020)	2
Stewardship theory	Adams et al. (2016)	1
Disclosure theory	Busco et al. (2018)	1
Resource-based theory	Corsi and Arru (2020)	1
Narrative mode of cognition	Lai et al. (2018)	1
Media richness framework	Lodhia and Stone (2017)	1
Framing theory	Maroun (2019)	1
Organizational learning	Massingham et al. (2019)	1
Systems thinking	Oliver et al. (2016)	1
Stakeholder theory	Romero et al. (2019)	1
Social ontology theory	Stacchezzini et al. (2019)	1
Performative approach	Corbella et al. (2019)	1
Impression management	Lai et al. (2017)	1

regarding the impact of their activities on the interests of stakeholders (Dubbink et al., 2008).

Institutional theory and *organizational change theory* are the other most frequent theories by number of papers (4 papers).

Institutional theory asserts that companies are influenced by wider social structures (public and private rules) and by the presence of non-governmental and independent organizations that monitor corporate behaviour and influence its activities and operational modalities (Di Maggio & Powell, 1983; Farneti et al., 2019). One of the main reasons why institutional theory is used in IR studies is that organizations should not be viewed as individual entities but as entities whose behaviour is determined by norms, structures and constraints (Besharov & Smith, 2014). The use of institutional theory in the papers analysed indicates that organizations are influenced by broader social structures, such as public and private rules, and by the presence of non-governmental organizations and other independent organizations that monitor corporate behaviours that influence activities and how a company operates. Institutional theory is used to examine the opinions of institutional investors on the usefulness of the new corporate report, helping to extend the logic of application of this theoretical framework in the new area of the IR (Atkins

et al., 2015). Institutional theory is used to explain the reasons why companies use integrated reporting and compare these reasons with the integrated thoughts of the document recipients (Marasca et al., 2020). This theory is used to explain the different sustainability development models and how the material sustainability arguments used by integrated reporting will differ significantly from other reports as the IR is a market-driven document (Corsi & Arru, 2020; Mio et al., 2020a).

The organizational change theory considers a company as a set of elements such as financial, management and accounting infrastructure and tries to understand and explain changes in organizations (Greenwood & Hinings, 1987). Organizational change theory (outlined by Laughlin in 1991) is used to verify and explain organizational changes stimulated by IR adoption (Stubbs & Higgins, 2014). It is also a reference for a detailed content analysis that identifies an organization's use of different strategies to respond to threats to its credibility (Maroun, 2018). As can be deduced from the analysis carried out, the most widely used theories serve to support organizations and help them to confirm or strengthen their legitimacy and to communicate to their stakeholders that the information disclosed is of high quality.

Among the many theories that populate this quadrant, two other theories deserve our attention: the practice theory and the neo-institutional theory. Practice theory is used to investigate the link between integrated thinking and integrated reporting (Lodhia, 2015) and as a theoretical lens to explore the bank's transition to integrated reporting (Al-Htaybat & von Alberti-Alhtaybat, 2018). Neo-institutional theory is used to analyse the motivations that drive organizations to integrate non-financial information into financial reporting (Atkins et al., 2015; Rossi & Luque-Vilchez, 2020).

4.3 Theories Adopted in Quantitative Studies on Reporting Processes

Agency theory emerges as the theoretical framework mostly adopted by quantitative studies focused on reporting processes. This theory argues that in any relationship between two parties, the agent that represents the principal in day-to-day transactions may maximize her/his interest to the detriment of the latter. An agency problem of information asymmetry arises, and related costs are incurred to reduce such asymmetry. In the context of corporate reporting, voluntary disclosure is a tool managers (as agents) use to reduce agency problems by informing stakeholders (as principals) on how the company is performing. Some stakeholders have also the ability to monitor managers and prevent the concealment of information, requiring and resulting in quality disclosure. Following this line of reasoning, the papers by Raimo et al. (2020a, 2020b) assume that ownership dispersion and independent audit committees urge managers to enhance the IR disclosure, thus reducing the information asymmetry. They succeeded in demonstrating a positive relationship between institutional ownership and audit committee independence and the quality of integrated reporting disclosure.

Agency theory is also used in combination with socio-political theories that are not new to accounting scholars interested in understanding the determinants or the effects of corporate reporting. The paper by Buallay and Al-Ajmi (2019) draws on *agency, legitimacy, resource dependence and stakeholder theories* to frame the analysis of the impact of selected audit committee attributes (financial expertise, size, members' independence and meeting frequency) on sustainability reporting. The results show that only members' independence and meeting frequency have a positive relationship with sustainability disclosure. Similarly, Wang et al. (2020) draw on agency theory, stakeholder theory, legitimacy theory and resource dependence theories to inspect how corporate governance (CG) mechanisms influence the IR disclosure quality. Their paper demonstrates that both traditional CG mechanisms (such as the board and the audit committee) and sustainability-oriented CG mechanisms (sustainability committee and use of non-financial performance measures in executives' remuneration policies) have a positive relationship with the IR quality and the use and quality of credibility-enhancing mechanisms for IR.

Social identity theory posits that actors categorize social world into "in-groups" to which they participate and "out-groups" to which they do not participate. Their self-esteem derives from their social identification as a member of an in-group, also in relation to how they evaluate the out-groups. The more the actors value and identify themselves with their in-group, the more they are keen to support their in-groups' activities. This theory is used by Krasodomska et al. (2020) to inspect whether the attitude toward mandatory non-financial reporting among accounting specialists differs between accountants who participate in training activities related to non-financial reporting and those who do not. The research findings demonstrate the influence of professional associations in steering commitment toward non-financial reporting.

The *system thinking approach* relies on the belief that problems should be managed in relation to a larger system of parts and relationships. In other words, problems should not be approached in isolation but considered in relation to bigger issues and taking into account the context in which they arise. This approach presents similarities with the concept of integrated thinking and is used by Stent and Dowler (2015) to inspect the integration, oversight and due attention to future uncertainties required by integrated reporting. Their empirical analysis shows that even "best practice reporting entities" lack this approach (Table 4).

Table 4 Theories used in quantitative studies on reporting processes

Theory	References	Frequency
Agency theory	Buallay and Al-Ajmi (2019), Raimo et al. (2020a, b), Wang et al. (2020)	4
Legitimacy	Buallay and Al-Ajmi (2019), Wang et al. (2020)	2
Stakeholder theory	Buallay and Al-Ajmi (2019), Wang et al. (2020)	2
Resource dependence theory	Buallay and Al-Ajmi (2019), Wang et al. (2020)	2
Social identity theory	Krasodomska et al. (2020)	1
System thinking approach	Stent and Dowler (2015)	1

4.4 Theories Adopted in Qualitative Studies on Reporting Impacts or Determinants

The most adopted theories in the qualitative-external category—containing 34 publications—are Legitimacy, Stakeholder and Agency theories, in addition to others less relevant in terms of use in the context of the selected literature, among which, Institutional, Signalling, Stewardship, Diffusion of Innovation, Impression Management Theory are highlighted.

More specifically, *Legitimacy theory* is applied to understand and interpret the stakeholders' perception of and reaction to IR. Combining and disclosing financial and non-financial information appears to be an effective approach to reinforce the opinion about company thanks to a clear account of environmental and social choices as well as the exhibition of value-creation activities (Camilleri, 2018; Dumay et al., 2015; Farooq et al., 2018; Wahl et al., 2020). The presentation of a firm's internal orientation, processes and actions to deal with socio-environmental issues is a successful way to overcome the external pressures, satisfy growing stakeholders' claims (Beck et al., 2017; Wahl et al., 2020) and prove business' compliance with the social contract.

The lens of *Stakeholder Theory* allows analysing IR as a tool to respond to the increasing stakeholders' demand for a more complete and holistic information (Darus et al., 2019; Haller & Staden, 2014). According to categories proposed by Jones and Wicks (1999), the most common approaches to Stakeholder Theory are the instrumental and the normative ones. IR, indeed, enhances stakeholders' engagement as well as the establishment of a relationship with the enterprise leading to better performances (Bose et al., 2017), forging the antecedents of long-term success by fulfilling the interests and expectations of all stakeholders (Haller & Staden, 2014), and providing a more significant social disclosure (Farneti et al., 2019).

Agency Theory is a perspective to look at IR as a mechanism for reducing information asymmetry, helping to mitigate principals–executives' conflicts and supervising executive's actions (Briem & Wald, 2018; Camilleri, 2018; Darus et al., 2019; Haji & Anifowose, 2017). Dumay et al. (2019) suggest abandoning Agency Theory because it only reaffirms the power managers have over corporate information without changing their behaviours and focus on stakeholders' needs. Integrated thinking and Reporting are in fact conceived and designed to modify managerial conduct as a form of management control, not just a formal reporting variation.

In this particular context, the *Institutional Theory* view sheds light on national culture and regulatory framework as factors influencing companies' posture toward the assurance of integrated reports: the compliance with the surrounding environments adapts organizational structures and processes thus legitimating firms (Briem & Wald, 2018; Camilleri, 2018). Enterprises try to fit in their environment by shaping appropriate responses to the issues and adopting practices satisfying the external expectations (Higgins et al., 2014).

Signaling Theory is used to support the importance of offering relevant information to improve the communication between organizations and stakeholders (Adhikariparajul et al., 2020). According to this conceptual position, IR can boost a firm's market performances (Wahl et al., 2020): in this sense, data related to all business's capitals are needed, even if negative, to make the information complete and accurate (Albertini, 2019).

From the *Stewardship theory* standpoint, integrated disclosures support practitioners to improve their work. Stewardship contributes to progress organizations' responsible and sustainable conducts recorded in the integrated reports (Camilleri, 2018). According to Dumay et al. (2019, p. 30) introducing stewardship theory to corporate disclosures forces [...] to relinquish the trappings of homo-economicus, who is driven and controlled by bonus contracts and other financial rewards. [...] Removing bonuses would require changes to the governance and mechanisms of economic incentives, which no longer views managers as self-interested actors, but as stewards of resources.

IR is addressed from the *Diffusion of Innovation Theory* perspective to discover its implementation and circulation by considering and pondering communication channels, external conditions and social system. The spread of new accounting procedures and forms is affected by environmental factors and variables that determine some successive phases: knowledge creation, persuasion, decision about practice's support or refusal, implementation, and confirmation (Bananuka et al., 2019; Briem & Wald, 2018; Gunarathne & Senaratne, 2017).

Impression Management is a crucial—even if not so adopted in this literature sample—theory to understand the potential distortion of readers' perception due to company's strategic selection and presentation of information, thematic and rhetoric manipulation, in order to achieve opportunistic goal instead of a transparent communication (Casonato et al., 2019; Haji & Hossain, 2016). Casonato et al. (2019, p. 150) define these fake narratives as "Self-serving disclosure practices".

Finally, several other theories are proposed: Practice Theory to study analysts' corporate information consumption (Abhayawansa et al., 2019); Luhmann's Complex Systems Theory (Luhmann, 1989) to suggest ways to enrich the IR framework in offering solutions to sustainable development (Alexander & Blum, 2016), Sztompka's (1999) theory on trust in social relationships to explore sources of trust—and reactions to them—within the IR (Chaidali & Jones, 2017); a Sartrean perspective is adopted to encourage companies to produce social, environmental and ethical information "without succumbing to the constraints of regulation and societal expectations" (Khalid et al., 2018, p. 69): no prior expectation must determine the contents of reports; Organized Hypocrisy Framework explains the inverse relationship between a company's rhetoric and policy statements, on the one hand, and actions, on the other (Maroun et al., 2018); the Maines and McDaniel (2000) model is applied to discover investors' information processing depending on different communication formats (Reimsbach et al., 2018) (Table 5).

Table 5 Theories used in qualitative studies on reporting impacts or effects

Theory	References	Frequency
Legitimacy theory	Dumay et al. (2015), Haji and Anifowose (2017), Beck et al., (2017), Van Zijl et al. (2017), Camilleri (2018), Farooq et al. (2018), Wahl et al. (2020), Gerwanski (2020)	9
Stakeholder theory	Haller and Staden (2014), Bose et al. (2017), Darus et al. (2019), Farneti et al. (2019), Vitolla et al. (2019a, b), Gerwanski (2020), Rossi and Harjoto (2020)	8
Agency theory	Haji and Anifowose (2017), Briem and Wald (2018), Camilleri (2018), Darus et al. (2019), Dumay et al. (2019), Rossi and Harjoto (2020)	6
DOI—Diffusion of Innovations theory	Gunaratne and Senaratne (2017), Briem and Wald, (2018), Bananuka et al. (2019), Martin-Sardesai and Guthrie (2019)	4
Institutional theory	Higgins et al. (2014), Briem and Wald (2018), Camilleri (2018), Garcia-Sanchez and Noguera-Gamez (2018)	4
Signaling theory	Van Zijl et al. (2017), Adhikariparajul et al. (2020), Albertini (2019), Wahl et al. (2020)	4
Impression Management theory	Haji and Hossain (2016), Casonato et al. (2019)	2
Stewardship theory	Camilleri (2018), Dumay et al. (2019)	2
Dialogical accountings and accountability model	Pärl et al. (2020)	1
Jean-Paul Sartre theory	Khalid et al. (2018)	1
Luhmann's Complex Systems theory	Alexander and Blum (2016)	1
Maines and McDaniel's model	Reimsbach et al. (2018)	1
Organized Hypocrisy Framework	Maroun et al. (2018)	1
Practice theory	Abhayawansa et al. (2019)	1
Sztompka's theory	Chaidali and Jones (2017)	1

4.5 Theories Adopted in Quantitative Studies on Reporting Impacts or Determinants

The quadrant, in which we find the Theories adopted in quantitative studies on the reporting of impacts or determinants, is composed of 32 papers.

The theories that are most frequently used to support the hypotheses made by the various authors of the selected papers (Table 6), are the agency theory, the stakeholder theory, the legitimacy theory; however, there are also theories with a lower number of frequencies, such as, for example, impression management theory or signalling theory.

Table 6 Theories used in quantitative studies on reporting impacts or effects

Theory	References	Frequency
Agency theory	Fasan and Mio (2017), Pavlopoulos et al. (2017), Kılıç and Kuzey (2018), Girella et al. (2019), Loprevite et al. (2019), Maroun (2019), Fuhrmann (2019), Landau et al. (2020), Mio et al. (2020b), Muttakin et al. (2020), Obeng et al. (2020a, 2020b), Raimo et al. (2020c)	13
Stakeholder theory	Fasan and Mio (2017), Busco et al. (2019), Girella et al. (2019), Matuszak and Róžańska (2019), Pavlopoulos et al. (2019), Fuhrmann (2019), Maama and Mkhize (2020), Mans-Kemp and van der Lugt (2020), Torelli et al. (2020)	9
Legitimacy theory	Lai et al. (2016), Busco et al. (2019), Matuszak and Róžańska (2019), Fuhrmann (2019), Maama and Mkhize (2020), Mans-Kemp and van der Lugt (2020), Mazzotta et al. (2020), Mio et al. (2020b)	8
Impression management theory	Melloni (2015), Melloni et al. (2016, 2017), Beretta et al. (2019)	4
Signalling theory	Kılıç and Kuzey (2018), Girella et al. (2019), Matuszak and Róžańska (2019), Mio et al. (2020c)	4
Institutional theory	Girella et al. (2019), Kılıç et al. (2019)	2
Information asymmetry theory	García-Sánchez and Noguera-Gámez (2017), Muttakin et al. (2020)	2
Value based	Mervelskemper and Streit (2017), Reitmaier and Schultze (2017)	2
Voluntary Disclosure	Dey (2020)	1
Theory of cost of capital	Girella et al. (2019)	1
Theory of political cost	Girella et al. (2019)	1
Theory of proprietary cost	Girella et al. (2019)	1
Organizational change	Omran et al. (2021)	1
Instrumental stakeholder	Torelli et al. (2020)	1

The first theory for frequency is the *Agency Theory*. According to this theory, the board of directors plays a fundamental role in influencing the content of corporate information that is disseminated outside, thus creating information asymmetries. With voluntary reports and, more particularly with IR, information could be disclosed to communicate in more detail the good conduct of organizations and could be used as a means to reduce information asymmetry and consequently reduce the agency's costs.

The agency theory is thus used as a theoretical support to prove that the size of the organizations (Busco et al., 2019; Fuhrmann, 2019; Girella et al., 2019; Lai et al., 2016; Mio et al., 2020b), the sector to which the organizations belong (Fasan & Mio, 2017; Fuhrmann, 2019; Girella et al., 2019) and the composition of the board (Girella et al., 2019; Kılıç & Kuzey, 2018) are variables that influence the disclosure of voluntary information. Larger companies or companies belonging to sectors with

higher concentration, in fact, are more predisposed to the disclosure of integrated reports and, consequently, have lower agency costs.

The second most frequent theory is the *Stakeholder Theory*. This theory suggests that the corporate strategy must support all types of stakeholders and this need can be supported by the publication of IR. Stakeholder theory is used to investigate different levels of integration by empirically testing whether the largest and most profitable companies are more likely to be accountable to stakeholders (Busco et al., 2019; Fuhrmann, 2019; Girella et al., 2019; Matuszak & Róžańska, 2019).

The third most frequent theory is the *Legitimacy Theory*. This theory has been used by many authors (Adams et al., 2016; De Villiers et al., 2017) who have studied IR to justify its existence as an attempt to increase corporate reputation. Even selected papers that adopt this theory use it to justify the publication of IR as an attempt to increase their reputation. Again, the results of the analysis of the papers show that the size and sector of the organizations influence the publication of IR to ensure companies' legitimacy (Busco et al., 2019; Lai et al., 2016; Maama & Mkhize, 2020).

As can be deduced, all the theories most used in the papers that populate the quadrant on quantitative studies on the reporting of impacts or determinants support the idea that the quality and quantity of the information disclosed are influenced by the size of the organization and the sector to which it belongs. It is also confirmed that the integrated report is used to increase corporate reputation. Two other theories that deserve our attention, even if used less frequently than the previous ones, are Signalling Theory and Impression Management Theory. *Signalling Theory* suggests that voluntary disclosure could represent a useful device for those organizations that want to distinguish themselves from others by reporting their higher quality. Studies using this theory show that the larger the company size the more information they will disclose (Girella et al., 2019; Matuszak & Róžańska, 2019; Mio et al., 2020c), and that there is a positive association between profitability and the level of information forecasts disclosed in the integrated reports (Kılıç & Kuzey, 2018).

Impression Management Theory asserts the tendency of organizations to use data selectively and present it in a favourable way to manipulate the public's perceptions of corporate results (Cho et al., 2012). Impression Management Theory is then used to verify how non-financial performance affects public perception (Melloni et al., 2017), and how this perception affects the tone of Intellectual capital disclosure within IR (Beretta et al., 2019; Melloni, 2015).

5 Discussion and Concluding Remarks

This chapter describes a literature review of the academic studies concerning IR to highlight the most frequent theories adopted, and how they can be inflected to interpret motivations, impacts and aims in the adoption of IR by companies. Findings show that, in recent years, researchers are using more than one theory to develop a more comprehensive and integrated interpretation of the IR phenomenon.

Furthermore, many new theories are emerging even if Legitimacy Theory and Agency Theory are considered very frequently as the theoretical foundation of the IR research both in the internal and external perspectives. Other theories frequently placed at the bases of IR studies are the Impression management and the Stakeholder.

Legitimacy theory is essentially employed to investigate and explain the effectiveness of non-financial disclosure incorporated in IR to manage the corporate need of legitimization, reputation and credibility towards several stakeholders. Qualitative studies adopt legitimacy theory to analyse effectiveness of non-financial information in IR versus different stakeholders, or in comparison with other reporting tools. Quantitative studies use legitimacy theory to identify relevant variables influencing the quality of non-financial disclosure incorporated in IR.

Agency theory is adopted to investigate and explain the effectiveness of non-financial information included in IR to reduce the conflict among principal and agent. In our dataset, qualitative studies with an internal perspective based on the Agency theory are missing; therefore, a more intensive research effort could be useful in this direction. Quantitative studies try to identify and explain the usefulness of IR in non-financial information by examining several variables (sector, size, corporate governance model, etc.).

Impression management theory and Stakeholder theory are essentially adopted in relevant studies that analyse reporting practices from an external perspective. The first is useful for investigating the manipulation of information. Qualitative studies focus on the distortion of the objective of transparency due to the strategic selection and presentation of information in IR by the company, while quantitative studies aim to identify the factors that influence the relationship between different types of non-financial information and stakeholders' perceptions. The second theory is useful for verifying the satisfaction of stakeholders' information needs by analysing, through a qualitative research approach, how IR can achieve this goal by ensuring complete information, or by testing, through a quantitative research approach, the factors that influence different levels of IR capability to satisfy stakeholders' demand for information.

The study conducted in this chapter can be useful for both researchers and practitioners to develop a better understanding of integrated reporting. The matrix used to classify studies and theories can help researchers to have an overall view on the theories that can be used to interpret phenomena related to IR and to make preliminary choices in conducting their research in the field of IR. From a practical point of view, the matrix can be regarded as a reference tool for companies to understand the different lenses through which to observe their own non-financial reporting and IR of the other companies or competitors. The search results can help companies and the IR manager to develop a comprehensive and holistic view of information to the outside and connected information processes.

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Information Integration, Connectivity, and Readability of Integrated Reports: A Literature Review



Damiano Cortese and Michele Rubino

1 Introduction

The most innovative element introduced by Integrated Reporting (IR) is integrated thinking, according to which every organization must be based on a comprehensive decision-making, management, and reporting process based on the connectivity and interdependencies between a number of factors that affect an organization's ability to create value over time (IIRC, 2013; Malafronte & Pereira, 2021).

The purpose of IR is to promote a more coherent and efficient approach to corporate reporting, so that the recipients of the information can benefit from a complete and integrated disclosure that is not produced as a simple summary of the data contained in the different types of reports (Incollingo, 2015). Consequently, the IR encourages organizations to produce a single concise report that includes financial and non-financial information as a result of a process characterized by integrated thinking. In this way, any organization can communicate to its stakeholders the relationships between financial and non-financial performance and their contribution to the creation or destruction of value (Busco et al., 2017).

One of the central guiding principles of IR is the connectivity of information, according to which an integrated report should comprehensively represent how the value creation process is the result of the combinations, connections, and interdependencies between the various components present in an organization. The

D. Cortese (✉)

Department of Foreign Languages, Literatures and Modern Cultures, University of Torino, Torino, Italy

e-mail: damiano.cortese@unito.it

M. Rubino

Department of Management, Finance and Technology, LUM University, Bari, Italy

e-mail: rubino@lum.it

connectivity of information characterizes the essence, specificity, or identity of IR. Indeed, the IR is not a mere compendium of the information enclosed in various documents. It must represent a different and distinct form of communication over and above the other forms of reporting from which much or all the information provided to stakeholders is extracted.

The IR must have an essential connotation, a fundamental requirement that consists in its suitability to make explicit the connectivity of the information that composes it, in order to communicate the way in which value is created over time. Thus, the specificity of integrated information lies in the way the information is provided, which hopefully must converge to a systemic approach that brings together and relates all the different information produced by the company to represent the process of value creation (de Villiers et al., 2014).

According to the <IR> Framework, the main forms of connectivity between information concern the relationship between:

- the content of the report
- the temporal orientation of the information or between the past, present, and future
- the role of the six capitals
- the type of information, i.e. financial and non-financial
- the quantitative and qualitative nature of the information
- managerial information (internal) and those reported externally
- the information included in the integrated report and that contained in other reports.

Connectivity concerns the elements of IR, but also has a temporal dimension, in which basically the past, present, and future outcomes are compared. The principle of connectivity enables the creation of forms of connection between different pieces of information. For example, connectivity promotes a better understanding of the role of capital and enables the integration of different types of information, including qualitative and quantitative information as well as internal and external to the firm.

However, connectivity is not only about linking data but also about communication methods. Therefore, an integrated report must provide both quantitative and qualitative information. Qualitative information must provide the necessary interpretive context, while quantitative measures help to strengthen and enhance the credibility of the narrative (Higgins et al., 2014; Lai et al., 2018).

The principle of connectivity invokes some corollaries, such as consistency of data and clarity of presentation of the report. Data must be reported and measured with the same value measures, especially when they are disclosed in different sections and for different information purposes. In addition, clarity implies explaining the relationships between the different pieces of information, which must be presented in a sequential manner for a step-by-step and complete understanding of the value creation process.

Therefore, linking information represents a multi-layered principle that permeates the entire approach of IR, which is configured as an arrival point of an entire process of managing the activities of an organization. It is obvious that it is not possible to

link the disclosed information if there is no decision-making perspective and unified management action within the organization.

Another crucial and essential aspect of IR is represented by the dialogue with stakeholders, according to which the report must indicate how and to what extent the organization takes into account and responds to the needs, interests, and expectations of the various interlocutors. IR should improve the connection between the company and stakeholders through direct involvement and promote a higher level of accountability, transparency, and knowledge about the company.

Thus, the issue of information connectivity, integrated thinking, and stakeholder relations are three key elements that are closely related. In this context, the quality of disclosure, understood as the usability of the information by stakeholders, as well as the degree of readability of the report and the understanding of the corporate system in the light of complete financial and non-financial information, becomes relevant.

Therefore, the principle of connectivity of information should help stakeholders to:

- view the company as a single system capable of creating value.
- clarify how the different elements of the company contribute to the creation of results.
- link the information contained in the report to other information available in other sources outside the company in order to promote understanding of the company's system.

Considering the relevance of the above principles of IR, the aim of this chapter is to conduct a literature review to identify: (a) how many studies have addressed the topic of information integration, its connectivity, and, in general, the readability of reports and (b) what are the relevant aspects that animate the academic debate.

Indeed, these aspects are fundamental to guarantee stakeholders a better perception of the value creation process. The analysis of the topic is functional to evaluate the current research framework on information integration as a reflection of the company's stakeholder orientation, its ability to read at different levels, involvement and participation in the dissemination and processes related to value creation over time.

The chapter is organized as follows. The next section illustrates the research methodology adopted to perform literature review. The third section introduces a coding scheme to describe the identified papers. Finally, the last section draws conclusions and depicts gaps and suggestions for future research.

2 Research Methodology

In order to identify published studies on the topic, a literature review was performed using the Scopus and ISI Web of Science bibliographic databases. The research was conducted by applying a specific protocol. First, through the combined use of keywords such as "integrated report", "non financial disclosure", "non financial

information”, the research focused on the integration of financial and non-financial information that was identified. These keywords were used in combination (using the AND operator) with other keywords such as “communication”, “connectivity”, and “stakeholder” in order to identify the specific studies centred on the information content of the integrated report and its readability and understanding by stakeholders.

Second, the research published between 2013 and 2020 was selected. This period starts from the date of publication, by the IIRC, of the International <IR> Framework. Furthermore, to avoid translation problems, only documents written in English were selected.

Based on the research methodology, 81 studies, among articles, books, and book chapters, have been identified. Subsequently, the duplicate records were eliminated and, after reading the abstracts, the irrelevant contributions were eliminated. Finally, through the integral reading of the remaining works, the dataset was further revised to eliminate further studies that were not in line with the research objectives. Therefore, 19 papers were identified.

3 Coding Scheme and Descriptive Analysis

The identified studies mainly refer to the research area of Business and Finance (n. 10), Business Management Accounting (n. 3), and Social Sciences (n. 2); the remaining works relate to other research areas such as Economics and Management, and Psychology Applied. Considering the year of publication, it is possible to observe that most of the searches are quite recent (6 in 2020, 5 in 2019, 1 in 2018, 2 in 2017, 2 in 2016 and, 1 in 2015).

The journals that published the largest number of articles are *Meditari Accountancy Research* (n. 4) and *European Accounting Review* (n. 3). In addition, it is possible to observe that n. 8 studies were published in journals included in the ABS journal guide. Specifically, n. 6 studies relate to the journals of the Accounting area (1 paper ranked as level 4*, 4 papers ranked as level 3, and 1 ranked as level 1). The remaining two papers are ranked, respectively, as level 3 in the Marketing area and, level 1 in the Strategy area.

To understand the aspects on which the papers have focused, we have developed a classification of the contributions on the subject of two dimensions. The first concerns the research approach used in the articles, distinguishing the papers that use quantitative or qualitative methods. The second one, instead, refers to the research perspective which can be internal or external. The internal perspective analyses the reporting process, exploring how information is constructed and the role that organizational actors play in these processes. The external perspective, on the other hand, evaluates the effect that some determinants can have on reporting practices.

According to the two described dimensions, it is possible to classify the studies as follows. Specifically, n. 12 studies have an external orientation and are equally

divided between the two different qualitative and quantitative approaches. The remaining 5 studies have an internal orientation and follow a qualitative approach. There are no studies with external quantitative approaches.

3.1 External Qualitative Approach

The study conducted by du Toit (2017) starts from some considerations about the role of IR which should be aimed at achieving a large audience with an accurate, easily readable, and understandable message completing and clarifying the company's information about strategies to create and maintain value. The lack in readability and the complexity of this kind of document is critical and problematic: the difficulty in interpreting its contents affects and undermines the comprehension of matters and jeopardizes the communication's effectiveness. This results in a limited reputation and legitimacy building or conservation and impression management. The authors propose an exploratory study based on IR readability to examine its usefulness that reveals a large unreadability and suggests a very high risk of non-understandability. Therefore, the potential audience is smaller because a tertiary qualification at least is needed to properly decode documents. This highlights the excessive focus of integrated reports on investors, to the detriment of all the other stakeholders and brings out the true underpinned tendency to achieve and demonstrate created value for shareholders rather than value-to-society.

Starting from the Media Richness Theory framework, Lodhia and Stone (2017) discuss the role of Web-based communication channels—in particular social media—as potential networks and canals to establish an effective communication with IR's stakeholders. Media Richness Theory states that a rich medium—that is characterized by immediacy, language variety, multiple cues, and personal source—is able to clarify ambiguous questions to change understanding. Social media's immediacy is fundamental in this specific field because users can exchange disclosed information in a suitable manner and provide quick feedback in a real-time discussion, based on user generated contents. This kind of platforms can also be tailored—or personalized—to different stakeholders' needs in terms of language variety and signals features. Eventually, the presence of Internet-based analytical tools is useful to explore and understand integrated reports, thus really reaching and engaging readers of disclosed data. Communication based on social media or Internet in general is useful to extend and enrich the multi-stakeholder audience of IR and to provide a direct and instant reaction as the first key step for a firm-reader dialogue.

Kannenberg and Schreck (2019), through a systematic review of 32 studies, identify factors that potentially link reporting and company performance in order to improve—starting from their disclosed effects and impacts—internal managerial, decision-making, and risk management processes. The innovative guiding principle and strong point of IR is the demand for “Connectivity of information” encouraging “information [...] connected across different content elements, capitals, stakeholders” (p. 520). Business' activities and outputs—i.e., environmental, and social

impacts—are measurable in the increase or decrease of financial, manufactured, intellectual, human, social-relational, and natural capitals. The authors found that IR advances the disclosure of sustainability data, but there is no evidence of the connectivity of these data and the financial ones. This reveals a gap in an essential constituent of this format: the connection between financial and non-financial information. On one side, IR increases data quantity and quality, but there is no evidence that it increases sustainability performances. Ultimately, all of this underlines a scarcity of effective and concrete integration.

Batista (2018) analyses the usefulness of integrated reports, published by several Portuguese companies, as communication tools. In particular, the study aims to evaluate the extent to which integrated reports can be useful to operationalize the stakeholder model of Corporate Social Responsibility (CSR) in marketing developed by Maignan et al. (2005). Considering that both the models for implementing social responsibility in marketing and integrated reports, sharing some fundamental assumptions concerning the importance of stakeholders in value creation, the study analyses whether the integrated report can serve strategic CSR communication by analysing its connection with each of the steps involved in Maignan et al.'s (2005) model. Findings highlight some limitations that affect the framework developed by the IIRC. The integrated reports are mostly focused on the information needs of investors and not stimulate the discussion and the engagement of other stakeholders in the CSR process adequately. Consequently, it does not appear that integrated reports, as conceptualized by the IIRC, present clear benefits compared to other CSR reporting documents. The stakeholder engagement strategy in CSR is currently not reflected in IIRC's framework differently to what is indicated in the GRI guidelines. The stakeholder involvement strategies require a continuous dialogue between the firm and its stakeholders. Therefore, the integrated reports should serve the information needs of an ample group of stakeholders, facilitating the identification of existing shortcomings in integrating CSR issues into firms' business strategy. Consequently, based on empirical evidence, the study reveals that integrated reports are not a superior tool for the integration of financial and non-financial issues.

The experiment conducted by Green and Cheng (2019) examines the limited effectiveness of IR in disclosing company's material information about strategy, governance, and performance as well as the description of commercial, social, and environmental context within which it operates. This is due to a partial, non-complete interpretation caused by auditors' difficulties in judging nonfinancial performance information. If, on the one hand, the materiality of financial information is clearly evident and numerically expressed, on the other, the disclosure of non-financial one is affected by firm's strategy. Its understanding is consequently prejudiced thus reaching a different level of effectiveness. Strategically relevant and irrelevant non-financial performance information is not consistently distinguished: it is essential for companies to clarify the key nature and degree of different described evidence and to provide a strategy map representing relationships between planned objectives. The study stresses the important connection linking management accounting practices and auditors' materiality assessment and the importance of

increasingly providing non-financial performance information's assurance in integrated reports.

The topic of assurance occurs in the Hoang and Phang (2020) study too. The subject is more and more relevant in the IR because trustworthy and consistent non-financial data are the basis for investors' decisions and choices: perceived reliability influences in the documents are decisive for investing. Authors propose the combined assurance—"which recognizes that the assurance and risk management activities of management, internal assurance providers, and external assurance providers should be coordinated" (p. 2)—as a manner to enhance firm's risk management and assurance and accordingly to boost the trustworthiness of non-financial information thanks to an increased reporting quality. Mercer's (2004) credibility framework is applied to verify and improve the consistency of communication when there are high risks of misunderstanding and misinterpretation. The implementation of communication of combined assurance decreases reliability risks and pushes investors' willingness to invest.

3.2 *External Quantitative Approach*

Dumitru et al. (2015) apply the lens of Stakeholder Theory to study to what extent IR is used by organizations as a viable communication tool for value creation. Disclosure is the representation of value creation *for* and distribution *to* all stakeholders' groups as evidence of the connections between the financial, human, social, and manufactured capitals. The public availability of integrated documents should be a guarantee of accessibility to all readers and usually a higher level of trust is ascribed to them. However, as per du Toit (2017), a prevalent shareholder-oriented approach emerges from the analysis of 95 integrated reports: no quantitative information is provided, even when it could simply be obtained from accounting records. Coherently, most of the information is qualitative and narrative. Integrated Reporting principles and purpose are then neither fully incorporated nor acquired: the use of integrated tools is just an opportunistic behaviour to gain competitive advantage.

Following one of the International Integrated Reporting Council possibilities to increase Integrated Reporting connectivity, also Rivera-Arrubla and Zorio-Grima (2016) recommend social media as a valuable way to increase transparency and—as per Lodhia and Stone (2017)—stakeholders' engagement. Integrated reporting is a new business' response to stakeholders' claims and needs, and Web-based communication channels allow a continuous and dynamic information network as well as an engagement tool. As a consequence, they can contribute to really create a company-stakeholders' cooperation in building a sustainable economy and society.

The study carried out by Reimsbach et al. (2018) analyses whether professional investors improve the acquisition of information on sustainability by reading the IR compared to the separate reading of the annual and sustainability reports. The results show that IR does not contribute to improving the acquisition of non-financial information. Therefore, companies should improve the reports' readability, allowing

investors a better understanding of sustainability issues. The authors state that the generally high level of acquisition of sustainability-related information indicates that investors already include this information in their search strategy. Therefore, the empirical evidence suggests to the management to improve the connectivity of information.

In another research, Cosmulese et al. (2019) based on a qualitative and quantitative analysis of 180 companies quoted on the stock exchange during 2008–2017, focus on the dynamic analysis of the main economic and financial factors. These were the foundation of the statistical design for evaluating the companies' ability to satisfy the stakeholders' expectations. The findings showed that companies can satisfy the stakeholders' expectations using the IR, which ensure the sustainability of CSR development. The results also prove the idea that the IR quality is in a relationship of direct causality with the stakeholders' expectations. Therefore, companies could get and maintain their sustainable value by using the IR as a communication tool of the financial and non-financial information that is shared with the stakeholders.

Readability is the core argument of Stone and Lodhia's (2019) work exploring the comprehensibility and accessibility of integrated reports to verify their alignment to the fundamental purpose of Integrated Reporting to provide a clear and intelligible language. Readability is about syntactical complexity of the message and understandability considers elements differentiating readers: the interest in an argument, the familiarity with the topic, the knowledge of the subject. Despite the foundational intention of Integrated Reporting, the authors reveal a lack of clarity and a non-increasing readability over time. Stone and Lodhia suggest visual methods and forms of communication to progress the readability and understandability. The used language too is relevant and could represent an improvement: previous experiences, i.e., the "Plain English" proposed in 1998 by U.S. SEC—Security and Exchange Commission (1998)—for writing in a simple style and designing clearer and effective disclosure documents could be an operational and successful technique to reshape texts and achieve the subtended informational goal.

In a recent work, Caglio et al. (2020) examine the economic consequences in terms of market value, stock liquidity, and the analysts' forecast accuracy associated with textual attributes and the external assurance of IR. Based on the top 160 JSE-listed South African firms ranked by market capitalization in 2015, the paper developed an econometric analysis finding some important issues. The results show that different textual attributes matter differently in terms of the associated economic benefits. Specifically, IRs with low-quality textual attributes, i.e., characterized by reading difficulty, are negatively associated with market evaluation and liquidity. Conversely, IR conciseness is linked with higher stock liquidity and IR tone bias is associated with less dispersed analysts' estimates. The findings suggest that investors appreciate reports that are readable, short, and focused. In addition, the study highlights that IR assurance moderates the negative associations among low-quality textual attributes of IR and the firms' economic consequences. The performed analysis shows that IR assurance dampens the negative effect of disclosure caused by long reports.

3.3 *Internal Qualitative Approach*

The matter of “language in use” and, more in general, the topic of discourse about sustainability in Integrated Reporting, are explored by Zappettini and Unerman (2016). The combination of information in a unique document leads to a textual evolution and hybridization reflecting the amalgamation of financial, environmental, and social disclosure. This interdiscursivity, distinguishing different communication and audiences, involves various linguistic narratives and registers. Therefore, IR is a new, hybrid genre and vehicle for mixed discourses. According to the authors, sustainability disclosure reveals “internal and particularized more than external and holistic discursive orientations” (Zappettini & Unerman, 2016, p. 538)—as opposed to the statement “the semantic orientation of the integrated reports seems to evolve over time, shifting from a focus on organizational and financial issues to a focus on more relational aspects between organizations and their environment” (Quarchioni et al., 2021, p. 12)—. The description of organization’s activities is legitimated by the sustainability “talk”: the item is rhetorically presented to build a company’s trustworthy image.

The article written by McGuigan et al. (2021) tries to overcome the elusiveness of Integrated Thinking’s concept promoted by the International Integrated Reporting Council (IIRC) as “a multi-capital management approach that enables organizations to deliver their purpose to the benefit of their key stakeholders overtime”.¹ Correspondingly, Integrated Reporting is presented as “a holistic external representation of an organization” (McGuigan et al., 2021) based on thinking amalgamation. According to the authors, there is neither specific guidance nor a commonly understood outline for Integrated Thinking. It is significant also that the academic discussion is limited to the organizational level, never mind that thinking is first of all an individual process preceding the integrated—and collective—thinking. The antecedent of this joint and institutional attitude and approach is rooted in an individual requirement defined as “integrative thinking”. To demonstrate this proposition, McGuigan and colleagues present and discuss four different sites of integrative thinking—the Athenian democracy; the Minangkabau and Quakers communities; and the *Apis Mellifera* colony—and suggest the neo-Piagetian theory of Conceptual System Theory. This in order to better theorize the integrated thought by stressing the singular integrative capacities: boosting and supporting integrative thinking within the single person is in fact the most efficient path to forge the organizational Integrated Thinking.

Quarchioni et al. (2021) propose a “vocabulary approach” for studying text of integrated reports. This methodology considers vocabularies as conventions as well as main denominators people use to effectively communicate and share knowledge. Analogously, integrated reports are “systems of words and their meaning regarding” Integrated Thinking (Quarchioni et al., 2021). To that end, contents can show the way in which Integrated Thinking becomes a reality within the company, takes

¹<https://integratedreporting.org/integrated-thinking/>.

shape from a semantic and syntactic perspective, and varies over the course of time. Some interesting findings emerge thanks to the investigation of word frequency patterns and of relationships between words: authors found core themes emblematic of firm's capitals (financial, manufactured, intellectual, human, social-relational, and natural). This means that categories of Integrated Thinking are reflected in enterprise's vocabulary in use and confirms that Integrating Thinking reveals—and is built on—internal practice and culture. The semantic orientation of integrated reports is a distinctive and depicting business expression that changes during the years following the composition *of* and the connections *between* capitals. In particular, the authors underline a transition from a financial-managerial perspective (internally reflected) toward a commercial-relational one (externally reflected): a noteworthy evolution of entrepreneurial philosophy and environment manifestly observable in its communication and messages.

Esch et al. (2019), in the IR theoretical perspective, analyse how decision-makers use different sets of information in decision making. The purpose of the study is to assess whether the information changes offered by IR have the potential to facilitate strategic decision making in the integrated thinking perspective. The study is based on the 15 senior executives' interview to evaluate the importance of integrated information in their most recent decision-making processes. The findings highlight that both financial information and non-financial information are perceived as relevant for strategic decision-making processes. The dynamics of financial information and non-financial information is complex, as the relative importance of information varies throughout the decision process. The research results show that non-financial information takes precedence in the first phase of the decision process while its importance significantly decreases in the second phase related to the execution period. Instead, in the third and fourth phases of the decision process, the importance of non-financial information increases again as companies ensure that contingent effects associated with the decision are in line with externally communicated objectives. The challenges of strategic decision-making show that the interplay between quantitative and qualitative information and the interplay between internal and external data are also important. Both need to be considered and are constituents of integrated information, which plays a vital role in practice. The results also show that the use of financial and non-financial information has been reported both by companies that have adopted IR and by those that are still in the process of adopting the new reporting tool.

Finally, Devalle et al. (2021) developed a research based on a single case-study of a leading Italian Company to identify the actions of IT to overcome the "silos" thinking of managing, communicating, and reporting. More specifically, our research investigates the relationship between IT and stakeholder engagement actions and highlights how stakeholder engagement practices translate IT to practices. The findings show that a company that possesses adequate IT characteristics is facilitated in consolidating the reporting process of integrated reporting. The greater integration of IT in the activities of an organization favours the connectivity of information which will flow into management reporting, analysis, and decision making. This also leads to better integration of information systems that support

internal and external reporting and communication, including the preparation of an integrated report (Adams, 2017).

3.4 Main Theories Applied

As reported from time to time, theories applied as a part of the analysed papers, are: Stakeholder Theory, Conceptual System Theory, Mercer's (2004) Credibility Theory, Legitimacy and Reputation Risk Theory, Media Richness theory.

In more detail, Stakeholder Theory is used (Rivera-Arrubla & Zorio-Grima, 2016; Dumitru et al., 2015) as the most typical standpoint to observe company's engagement and commitment in value creation for all stakeholders.

Conceptual System Theory supports McGuigan et al. (2021) to stress the differences due to the individual and the experiential context to better clarify the intricate concept of Integrated Thinking that requires integrative thinking from people belonging to an organization.

Mercer's (2004) Credibility Theory allows Hoang e Phang (2020) to evaluate communication consistency in case of high risks of misreading and misinterpretation.

Legitimacy and Reputation Risk Theory helps Rivera-Arrubla and Zorio-Grima (2016) to highlight the potential role of social media as further tools to show compliance with society's expectations and outcomes of the Reputation Risk Management process.

Finally, Media Richness theory is the framework used by Lodhia and Stone (2017) to point out the Web-based communication potential: at the present day, social media are an immediate system to spread disclosed data, to obtain feedback, and to create a dialogue about Integrated Reporting.

4 Concluding Remarks, Gaps, and Future Research

In this chapter, the main articles dealing with the readability of IR and the improvement of stakeholders' perception of the value creation process were examined.

The most relevant and interesting topics and suggestions for further research that emerged from the literature review relate to the concept of Integrated Thinking, the readability and understandability of Integrated Reporting, the security of disclosure, and the effectiveness of web-based and social media channels in corporate communications.

On Integrated Thinking and its undefined nature, McGuigan et al. (2021) suggest examining the life experiences of accountants to understand the impact on integrative thinking skills as a foundation for Integrated Thinking. Exploration of ways to accelerate the emergence of individual integrative thinking in the workplace, starting from accounting education, is also suggested. The vocabulary approach of

Quarchioni et al. (2021) is proposed to further understand Integrating Thinking thanks to the analysis of words describing organizational contexts and processes acting on report writing as materialization of integrative thinking.

To overcome the theoretical use of topics such as “sustainability” as well as the opportunistic manipulation of language in integrated reports, deeper developed quantitative analyses based on the value distributed to different stakeholders are recommended (Zappettini & Unerman, 2016; Dumitru et al., 2015).

Stone and Lodhia (2019) demonstrate the need for studies of communication effectiveness and methods for measuring readability and accessibility. Not dissimilar is the advice of du Toit (2017): solutions need to be found to make the integrated report more accessible and understandable. Green and Cheng (2019) emphasize auditors’ judgment by recommending that they examine the factors that influence their understanding of materiality. For Hoang and Phang (2020), investor opinion is critical when considering studies on the impact of combined assurance on perceptions of integrated reports.

According to Lodhia and Stone (2017) and Rivera-Arrubla and Zorio-Grima (2016), it is essential to evaluate the actual use of social media by companies in the practice of integrated reporting and possibly identify drivers and barriers to communication through these channels.

The analysis conducted shows that it is only in the last two years that scholars have become more interested in information integration and the readability and comprehensibility of IR. A key element of IR is integrated thinking, which, as observed, is closely related to the principle of connectivity of information. However, the effectiveness of IR lies in the ability of an organization to represent itself and illustrate to stakeholders how the value creation process takes place. Therefore, the informative and communicative role of IR seems to be crucial for the external reader to truly perceive the whole corporate system in a deeper way.

Looking at the existing literature, there is still a big gap that needs to be filled. The topic of informational integration still has many aspects that deserve attention. First, future studies should look at evaluating the effective application of integrated thinking, which is thought of as the quality of readability and comprehension of the integrated report, also through quantitative approaches. Many studies have already been conducted on the concept of integrated thinking or the quality of IR (Feng et al., 2017; Pistoni et al., 2018; Vitolla et al., 2019; Malafronte & Pereira, 2021). However, this aspect has not yet been studied in depth. The quality of a report should be strictly correlated with the observation of the actual information and communication integration of a report, which shows how the interaction of financial and non-financial information allows a better understanding of the company.

Second, future research at the internal level could observe how management attitudes, skills, and characteristics help facilitate the development of integrated communication.

The application of integrated thinking is very challenging for accountants who are used to standardized ways of thinking within accounting. In this context, the important role that IT plays within the business should not be forgotten. Improving information flows and IT can increase the ability to understand the critical issues that can affect the process of creating value in companies.

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Integrated Reporting in the Public Sector: How Is the Research Developing?



Marisa Agostini, Ferdinando Di Carlo, and Sara Giovanna Mauro

1 Introduction

Over the last several decades, multiple paradigms such as New Public Management (NPM), New Public Governance (NPG) and Public Value (PV) have inspired the reform process undertaken by public sector organizations worldwide. In this context of continuous reforms, the way of designing and delivering public services has been revised in order to improve the responsiveness to citizens' needs and the effectiveness of the services, and to strengthen accountability (e.g., Bingham et al., 2005; Cepiku et al., 2014; Pollitt & Bouckaert, 2011; Russo, 2013). In the spirit of NPM, a growing attention has been paid to the achievement of efficiency and effectiveness and to this purpose strong reliance has been put on privatization and outsourcing as potential means to improve service delivery by relying on private sector actors (Hood, 1995). This has resulted in broadening the range of actors involved in the public service delivery. Thereafter, in the spirit of NPG (Osborne, 2010), the relationship between governments and private sectors has been further revised and collaboration between public, private and third sector organizations has gained momentum. This has resulted in the development of new approaches to service delivery based on collaboration, participation and networks (Bovaird, 2006; Cepiku

M. Agostini

Department of Management, Ca' Foscari University, Venezia, Italy

e-mail: marisa.agostini@unive.it

F. Di Carlo

Department of Mathematics, Computer Science and Economics, University of Basilicata,
Potenza, Italy

e-mail: ferdinando.dicarlo@unibas.it

S. G. Mauro (✉)

Institute of Management, Sant'Anna School of Advanced Studies, Pisa, Italy

e-mail: s.mauro@santannapisa.it

et al., 2014). In particular, the role of citizens among the stakeholders and actors to be involved in the decision making has been revitalized and has assumed growing relevance (Pestoff, 2018). This context of reforms is evident in a new role of the government, in higher expectations of citizens and in new relationships between government and stakeholders. It has thus become pivotal to find effective ways to manage the relationship among multiple actors and to satisfy changing information needs. One of the consequent reforms has in fact concerned the mechanisms and tools whereby accountability can be strengthened and guaranteed (Almqvist et al., 2013).

New reporting instruments have been developed in order to address the need for reporting multiple and comprehensive pieces of information to a wide range of actors and stakeholders. The financial reporting has widely proved to be insufficient to guarantee effective accountability (Manes-Rossi & Orelli, 2020; Steccolini, 2004), and the awareness of the need of using alternative reporting instruments has grown (Kaur & Lodhia, 2019; Manes-Rossi, 2019; Marchi, 2020). Sustainability, environmental, popular and integrated reporting are among the recent instruments which public sector organizations are coping with to improve accountability (Biondi & Bracci, 2018; Cohen & Karatzimas, 2015). In particular, compared to sustainability or environmental reporting, integrated reporting has been developed as a potential means to integrate different types of information, both financial and non-financial, in the same document.

The integrated reporting has been first introduced in the private sector as a voluntary tool. It has been then adopted by several organizations worldwide and disciplined by multiple frameworks, among which the International Integrated Reporting Council (IIRC) Framework. According to the IIRC, “Integrated reporting is an evolution of corporate reporting, with a focus on conciseness, strategic relevance and future orientation” (<https://integratedreporting.org/>). It should be considered a concise tool suitable for integrating multiple pieces of information and communicating them to a wide set of stakeholders, supporting the creation of value in the short, medium and long term. The main purpose of an integrated report is to explain how different resources and capitals have been used to create value.

The IIRC has published the <IR> Framework in 2013 and its revision in January 2021. The framework indicates guiding principles and content elements for the elaboration of the integrated report. The emphasis put on this private sector tool has inspired its adoption in the public sector. Several initiatives like the Public Sector Pioneer Network, established in 2014 by the IIRC and the Chartered Institute of Public Finance and Accountancy (CIPFA), testify to the recent interest in spreading the integrated reporting in the public sector. The framework itself has been written for the private sector, but it can be adapted and applied by public and not-for-profit organizations.

Nevertheless, despite the relevance of the topic, it is still under-developed and the empirical evidence on experiences with integrated reporting in public sector organizations is limited. In this context, the current research aims at reviewing the body of knowledge on the integration and reporting of financial and non-financial information in the public sector in order to achieve a deeper understanding of how this

topic has been addressed up to now. Several reviews of the literature have been carried out in order to analyse the debate on the integrated reporting from a broad perspective (e.g., Dumay et al., 2016; Velte & Stawinoga, 2017; Vitolla et al., 2019), but it is lacking a focus on the public sector. This chapter is then specifically dedicated to review and analyse previous studies on public sector integrated reporting. Given the significance of the topic for the public sector and at the same time its limited development, the current research is particularly interested in understanding on which theoretical roots the research on integrated reporting is built. The underlying rationale is that, by developing an appropriate conceptual analysis and achieving a proper understanding of the integrated reporting, it is possible to effectively contribute to its improvement and development. Accordingly, the current research is designed to address the following research questions: *How is research for investigating integrated reporting in the public sector developing (RQ1)? What is the theoretical backdrop of the integrated reporting research (RQ2)?*

By addressing these questions, the current review aims at contributing to the growing debate on integrated reporting in the public sector by providing a systematization of how the debate has developed up to now and what theoretical approaches have been adopted. On the basis of these results, it will be possible to draw some implications and avenues for future research, identifying the issues that call for further investigation and development.

The chapter is developed as follows. The next section illustrates the methodology adopted to build the dataset of previous studies on integrated reporting in the public sector. The third section describes the dataset and the fourth section focuses on the analysis of the theoretical perspectives adopted by the previous studies to investigate integrated reporting in the public sector. Finally, the last section draws the conclusions and implications of the review.

2 Methodology

The current research is built on a review of the academic literature on the topic of integrated reporting in the public sector. To this purpose, the research process has started with the elaboration of the keywords, the selection of the databases of where to search for the studies and the definition of the research protocol (e.g., Cuganesan et al., 2014; Jesson et al., 2011).

First, the keywords such as “integrated report*”, “non-financial disclosure”, “non-financial information” were used to identify research dealing with the integration of financial and non-financial information. The keyword “integrated report” was central to the search because it was considered the most suitable for identifying studies on the topic of interest. The other keywords were used to complement the previous search. Indeed, “non financial disclosure” and “non financial information” have been added in order to identify additional studies on the topic of the integration of financial and non-financial information which were potentially not captured by

using the keyword “integrated report*”. However, studies were always scanned in order to guarantee their focus on the integration of different kinds of information. The focus on the non-financial dimension of reporting, reflected in the keywords used, was determined by the peculiarity and distinctive feature of integrated reporting, whose value relies on the integration of non-financial information with the more traditional financial information. The overarching rationale was to carry out a comprehensive search.

These keywords were used in combination with keywords suitable for limiting the search to the studies focused on the public sector, as “public sector” or “government”.

Second, two international scientific databases (Scopus, ISI Web of Science) were searched to build a reliable dataset (Cucciniello et al., 2017; Manes-Rossi et al., 2020a) suitable for depicting the international debate on the topic.

The searches were guided by a specific review protocol which explicitly set the inclusion criteria of the search. Accordingly, only the studies that met all the criteria can be included in the final dataset. Specifically, the protocol is made of the following items:

- *Timespan*: from 2013 to 2020 (Nov)
- *Language*: English
- *Document types*: Article or book chapter or book

The publication time frame was set between 2013 and 2020. This time span was determined by considering as a starting point the year when the IIRC published the International <IR> Framework to explain the fundamental concepts of integrated reporting. It was considered the appropriate time frame for reviewing the development of integrated reporting after its “official” birth.

To avoid translation problems, only English-written studies were selected.

Finally, to be included in the dataset, the studies should be papers published in academic journals, or book chapters. This parameter was set to implicitly assess the quality of the contributions.

Using the keywords identified and applying the protocol, multiple search rounds were conducted in the international databases. The records found through these rounds were integrated and the duplicates eliminated. The remaining studies were first screened based on their title, abstract and introduction, if needed, to select only those focused on the integration of financial and non-financial information in the public sector in order to guarantee the coherence of the studies included in the final dataset. The resulting studies were read and the dataset was further reviewed to eliminate the studies inappropriate for the current research because they were out of topic. Studies only loosely connected to the topic of integrated reporting or studies paying marginal attention to the public sector were excluded. Doubtful cases and discrepancies in the classification were discussed among the authors. In the end, 30 studies were included in the dataset.

The following figure (Fig. 1) depicts the steps carried out in building the international dataset. These studies address the topic of integrated reporting or the integration of financial and non-financial information in the public sector.

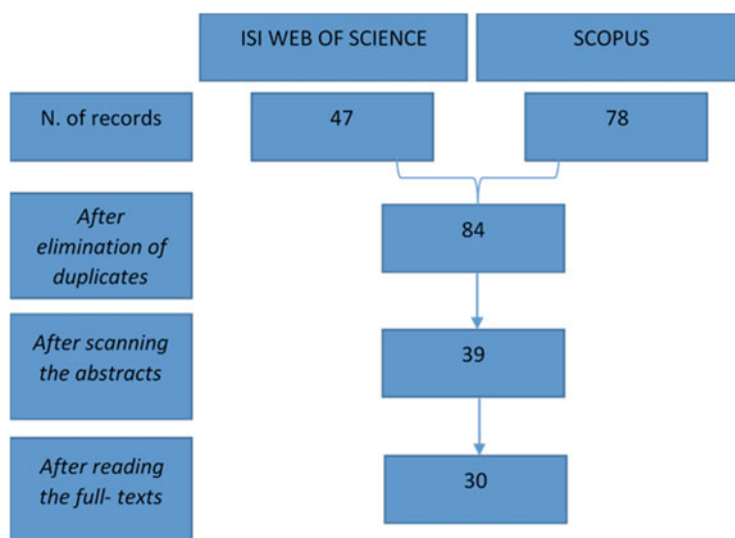


Fig. 1 Steps of the review process

This dataset of studies has then been the object of analysis. First, the studies have been classified in order to get an overall understanding of how the topic of interest has been addressed in previous studies and find out how the academic approach to integrated reporting has changed over time (RQ1). Second, the analysis has focused on the theoretical approaches adopted to investigate integrated reporting (RQ2). The next sections illustrate the results of the analysis.

3 A Descriptive Analysis of the Dataset

A coding scheme was developed in order to analyse and classify the studies. This was needed in order to achieve an overall understanding of how the topic has been addressed and studied over time according to the dataset. This scheme was elaborated on the basis of previous classification frameworks (Broadbent & Guthrie, 2008; Goddard, 2010; Van Helden, 2005) which have been adapted to the purpose of this review.

The coding scheme includes the following dimensions of analysis:

- *Type of documents* (articles, books or book chapters), to understand the prevalent approach chosen by academics to contribute to the topic.
- *Research source*, to point out the key research fields in which the topic has been developed according to the journal classification in the online portal Scimago.
- *Year of publication*, to analyse the temporal distribution of the studies and to understand how the interest in the topic has changed over time.

- *Research setting*, to analyse in which countries (geographical area), at which level of government or in which type of public sector organizations (organizational focus) the topic has been investigated.
- *Research method*, to find out whether the topic has been investigated through empirical or conceptual approaches. The predominant approach has been identified.

3.1 *Type of Documents and Research Source*

The studies in the dataset are represented by journal articles (n. 27) and book chapters (n. 3), with a significant prevalence of journal articles, which represent 90% of the dataset. The top-four international academic journals according to the number of papers published are listed in the following table (Table 1). Interestingly, the papers have been published in these journals almost exclusively in the last two years.

Table 1 shows that the topic under analysis has mainly attracted the attention of scholars in the field of business, management and accounting, although it is possible to recognize a multidisciplinary interest in the topic, as revealed by the inclusion in this list of the journal “Sustainability”. This is supported by the analysis of all the journals where the papers of the dataset have been published. Indeed, business, management and accounting are the prevalent disciplinary fields where it is possible to follow the debate on integrated reporting according to our dataset. Decision sciences, energy and environmental sciences and social sciences are additional fields which contributed to the topic. The research protocol of the current review did not set any parameter concerning the research field because the analysis was designed to find out which are the main domains contributing to the development of the integrated reporting. Therefore, this issue has represented an interesting dimension of analysis.

Table 1 Top-four journals

Journal	Disciplinary field (Scimago)	N. of papers (% over the total)
Meditari Accountancy Research	Business, Management and Accounting	5 (17%)
Public Money & Management	Business, Management and Accounting; Social Sciences	4 (13%)
Journal of Public Budgeting, Accounting & Financial Management	Business, Management and Accounting; Economics, Econometrics and Finance; Social Sciences	3 (10%)
Sustainability	Energy; Environmental Science; Social Sciences	3 (10%)

3.2 Year of Publication

An analysis of the temporal distribution of the studies shows that the academic debate on integrated reporting has significantly grown in the last two years, as depicted in the following figure (Fig. 2).

3.3 Research Setting

The studies in the dataset have been classified according to the setting of their research. In this regard, two dimensions have been taken into account. Firstly, the geographical area where the research has been focused on (Fig. 3). This analysis reveals the strong prevalence of empirical analysis carried out in Europe (e.g., Caruana & Grech, 2019; Cavicchi et al., 2019; Guthrie et al., 2017; Manes-Rossi et al., 2020b; Päril et al., 2020). These studies are followed by research carried out in

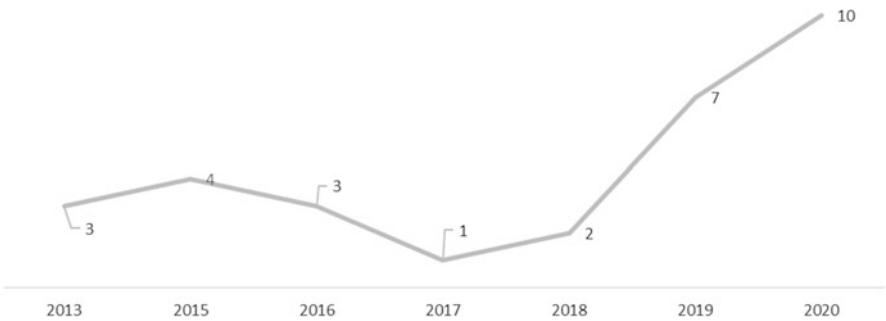


Fig. 2 Temporal distribution (n. of studies per year)

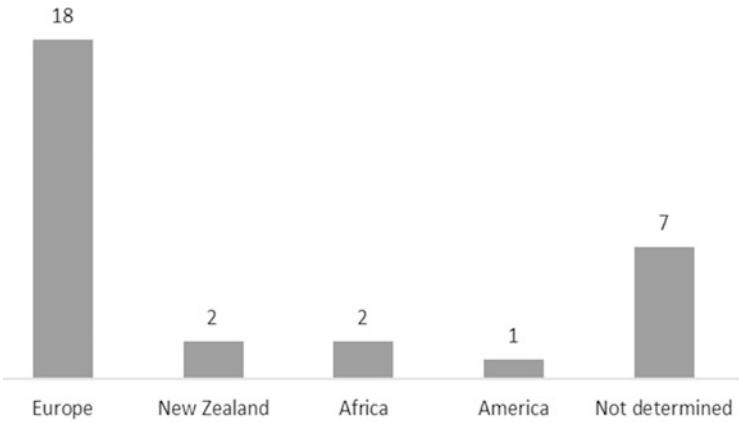


Fig. 3 Research setting: the country (n. of studies per country)

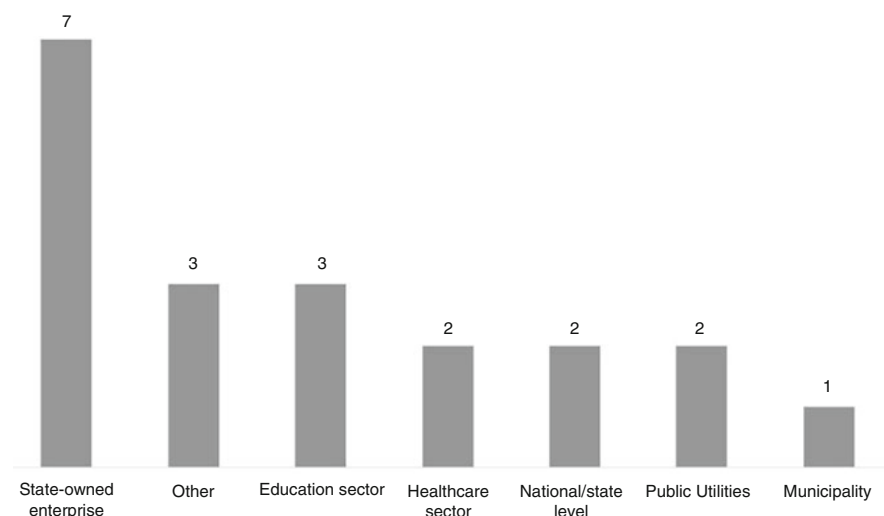


Fig. 4 Research setting: the organizational focus (*n. of studies per organizational focus*)

New Zealand (Farneti et al., 2019; Montecalvo et al., 2018) and South Africa (Bartocci & Picciaia, 2013b; Veltri & Silvestri, 2015). Only one study of the dataset has focused on the American context, and in particular on the US context (Harper, 2020). The remaining studies have not a specific research setting, being mainly conceptual/normative studies, or review of the literature.

Interestingly, the studies focused on New Zealand and America are very recent, showing a relatively new interest in the topic in these settings, while the studies which have investigated South African cases have been published at the beginning of the time span of this analysis. This is explained by the long history of integrated reporting in Africa, which started with the King Code of Governance for South Africa in 2009 and this led to the recognition of integrated reporting as a dominant form of reporting.

Further, the analysis of the research setting has addressed the level of government or the type of public sector organization where the analysis has been carried out (Fig. 4).

This analysis shows that significant attention has been paid to state-owned enterprises (e.g., Argento et al., 2019; Farneti et al., 2019; Nicolò et al., 2020a). The interest in this type of organization is recent, since these studies have been published over the last three years, and peculiar since it points out the high expectations towards integrated reporting in terms of improvement of accountability and transparency. State-owned enterprises are indeed complex organizations where multiple interests and values can co-exist and the disclosure of the information on their multidimensional performance represents a significant challenge to deal with.

Similarly, in two cases, the development of integrated reporting in public utilities has been investigated considering the industry peculiarities (Guthrie et al., 2017; Pozzoli & Gesuele, 2016). Further, the analysis of the integrated reporting has also

concerned other specific fields, as the education field (three studies have investigated the adoption of integrated reporting in universities) (Iacuzzi et al., 2020; Mauro et al., 2020; Veltri & Silvestri, 2015) and the healthcare field (two studies have investigated hospitals or public sector health care organizations) (Cavicchi et al., 2019; Marasca et al., 2020). In a few cases, different public sector organizations such as audit institutions (Bartocci & Picciaia, 2013b), and charity or non-profit organizations (Pärl et al., 2020), have represented the research setting. On the contrary, only a marginal set of studies has investigated integrated reporting at the different levels of governments, with a limited interest in the municipalities and in the state departments (e.g., Caruana & Grech, 2019; Nistor et al., 2019).

Hence, it is worth pointing out that the recent interest in integrated reporting in the public sector has been characterized by a predominant attention paid to peculiar settings and complex organizations, such as the state-owned enterprises, instead of focusing on the potential of integrated reporting at the different government tiers.

The remaining studies have not explicitly indicated a specific research setting, being conceptual, commentary/normative or review studies.

3.4 Research Method

The analysis of the method adopted (Fig. 5) shows that normative research is still relevant, confirming the results of previous reviews of the literature on integrated reporting (Dumay et al., 2016), while the empirical analysis conducted through case studies represents 33% of the dataset.

Case studies conducted through interviews and/or document analysis represent a frequent empirical approach used to analyse integrated reporting in practice. This approach has been employed constantly in the time period under analysis and it has

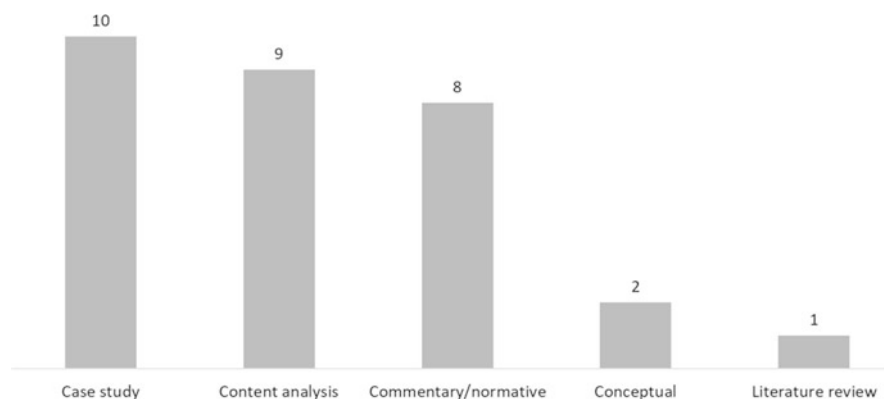


Fig. 5 Research method (*n. of studies per method*)

been mainly adopted to investigate specific fields, such as education, healthcare, public utilities and third sector organizations.

One of the other most significant approaches is represented by the content analysis, which has been used in order to analyse the content of the reports adopted by state-owned enterprises, universities, public utilities or municipalities, mainly in Europe. This type of research is focused on the analysis of the extent of development of integrated reporting in the public sector and has flourished over the last three years.

Another predominant approach is the normative approach that characterizes commentary research. These works usually lack a proper and explicit theoretical background. As observed in previous literature reviews, the absence of an explicit theoretical framework is linked to studies classified as “normative”, “commentary” or “reflective” (Anessi-Pessina et al., 2016; Broadbent & Guthrie, 2008; Goddard, 2010; Van Helden, 2005). These studies reflect or generally discuss the development and use of accounting techniques, such as integrated reporting in the case of this review, without systematic empirical research or the implementation/development of specific theories. These studies, for instance, illustrate and compare different reporting tools or offer an overview of reporting tools used in a certain context without deeply analysing them in practice. Commentary research has been constantly adopted throughout the time span considered in this review and it has been employed especially in the early phase of the integrated reporting debate in the public sector.

Two studies have been labelled as conceptual since they have been developed with the main explicit aim of offering a framework suitable for developing the practice of integrated reporting. In one case, the focus is on translating integrating thinking in practice (Oliver et al., 2016) and, in the other case, on combining integrated reporting with popular reporting (Cohen & Karatzimas, 2015). In both the studies, there has been an effort to provide a new framework. Only one study of the dataset can be classified as a proper review of the literature and it has been carried out to analyse the different non-financial reporting formats in the public sector, among which the integrated reporting (Manes-Rossi et al., 2020a).

4 Theoretical Approaches: An Overview

The analysis of the theoretical approaches is particularly challenging because it is not unproblematic to define what a theory is or is not. For the purpose of the current review, the analysis has taken into account whether the studies have adopted or not a theory in a formal and explicit way in order to consider the study as theoretically informed (i.e., presence of a theoretical approach) (Van Helden, 2005). Accordingly, the selected studies can be divided into two categories:

1. Almost half of the studies (14 studies) do not adopt explicitly and formally a theoretical approach (i.e., non-theoretical studies).

Table 2 Sample categorization according to theories and research method

	Category 1 Non-theoretical studies	Category 2 Theoretical studies
N. of studies (%)	14 (47%)	16 (53%)
<i>Research Method</i>	<i>N. of studies per each category</i>	
<i>Content analysis</i>	3	6
<i>Case study</i>	1	9
<i>Literature review</i>	1	0
<i>Commentary/normative or conceptual</i>	9	1

2. The other (more than) half of the sample (16 studies) adopts a theoretical approach (i.e., theoretical studies). Specifically, a set of these studies (6 studies) takes a well-known theoretical approach rooted in the literature, such as legitimacy theory, institutional theory and stakeholder theory. The remaining studies (10 studies) use other theoretical approaches (e.g., Foucault’s governmentality framework), often combining institutional frames to other emerging conceptual ideas. All of them will be examined in detail in the Sect. 4.2.

There seems to be a correspondence between the research method adopted in the examined works and the two different types of studies, i.e. non-theoretical and theoretical papers (Table 2). Indeed, the absence of a theoretical framework is consistent with a commentary (normative) approach. On the contrary, the adoption of theories seems to favour case studies, followed by content analysis.

4.1 Non-Theoretical Studies

Focusing on non-theoretical studies as defined for the purpose of the current research, the review highlights that some of these studies use the <IR> Framework (IIRC, 2013) or other models to guide their discussions. For instance, two book chapters dated 2013 analyse the potential applicability of such Framework to public institutions (Bartocci & Picciaia, 2013a) and its impact in the already prepared integrated reporting for state institutions of South Africa (Bartocci & Picciaia, 2013b). Other studies focus on public universities, examining their integrated reporting in South Africa in comparison with the <IR> Framework (Veltri & Silvestri, 2015) and, more recently, analysing the extent to which their Social and Sustainability reporting in Italy include the elements of integrated reporting (Mauro et al., 2020). Content analysis was also carried out to analyse disclosure practices of the integrated reports of European public utilities (Pozzoli & Gesuele, 2016) and municipalities (Nistor et al., 2019), lacking a specific theoretical approach.

Other articles examine the alternative forms of reporting in the public sector, distinguishing between sustainability, integrated reporting and popular reporting (Biondi & Bracci, 2018; Cohen & Karatzimas, 2015; Manes-Rossi, 2019; Montesinos & Brusca, 2019); separating the conceptual frameworks behind financial

reporting and national accounts (Dabbicco, 2015); emphasizing the proactive role of EU's member states in the normative process for environmental, social and governance (ESG) disclosures (Camilleri, 2015) and highlighting also the different approaches and reform paths adopted by the governments around the world (Harper, 2020).

Finally, this first category of sampled studies also includes a literature review (Manes-Rossi et al., 2020a), focusing on non-financial reporting formats in public sector organizations. This study highlights the lack of academic attention on the implementation of "literature review" studies, which represents the least addressed research method. It concludes with a question: "*What alternative empirical methods and theories can be adopted?*" (Manes-Rossi et al., 2020a, p. 663) calling for further research and debating the proven benefits of legitimacy theory (Seibert & Macagnan, 2019), but emphasizing also the need to go beyond the well-known institutional, stakeholder and agency theories.

4.2 Theoretical Studies

Focusing on the studies here categorized as theoretical, the current review tries to recognize different levels of theorizing (Van Helden, 2005), distinguishing between studies based on stakeholder, legitimacy and institutional theories as the most used in the field of non-financial information, and those based on other frameworks, with more specific theoretical approaches dedicated to integrated reporting.

4.2.1 Stakeholder, Legitimacy and Institutional Theories

A significant part of the sampled theoretical studies (6 of 16) adopts stakeholder, legitimacy or institutional theories, providing a system-based perspective (Gray et al., 1996) and considering the disclosure policies of an organization as a strategy to influence stakeholders and their expectations (Deegan & Unerman, 2008).

In particular, according to the stakeholder theory, the organizations are seen as part of a system, where the single organization can influence or be influenced by stakeholder groups (Farneti et al., 2019). Actually, we can define two different types of stakeholder theory: managerial and normative. In the first one, following the idea that management will tend to satisfy the expectations of the most powerful stakeholders, the organization will disclose data according to these stakeholders' informational needs rather than those of non-powerful stakeholders (Gray et al., 1996). On the other hand, the normative branch suggests that all stakeholders should be treated fairly by an organization and managers should define the organizational aims and activities for the good of all stakeholders. Following the normative branch, indeed, "disclosure is assumed to be driven by responsible behaviour, and disclosures should provide information to the benefit of all stakeholders, not only powerful stakeholders" (Farneti et al., 2019, p. 560). Consequently, this normative approach is

recommended in the case of integrated reporting according to Farneti et al. (2019), who examine how social disclosures are influenced by the adoption of integrated reporting and show integrated reporting's influence on enhancing stakeholder relations in a public sector context.

Stakeholder theory is strictly linked to legitimacy theory and it is possible to say that these two theories complement each other, giving a valid explanation to the choice of a public sector organization to implement integrated reporting in the attempt to improve its accountability and to build its legitimacy towards the largest part of its stakeholders (Manes-Rossi et al., 2020b). Actually, while stakeholder theory gives the maximum importance to the requests, mainly of information, of organization stakeholders, the legitimacy theory is focused on the expectations of society at large, as deriving from a sort of social contract between the public sector organization and the whole community. These organizations chase social legitimacy trying to fulfil the stakeholder requests (Thomasson, 2009). As, for example, the study of Manes-Rossi et al. (2020b), who explore the level of integrated reporting disclosure and the impact of possible determinants on such practices, point out the relevance of integrated reporting as a tool of transparency and accountability; there are other three studies that adopt the legitimacy theory as a theoretical approach, two of them as standalone theories and the last one combining it with institutional theory. In one article, the focus is on the actions that public sector organizations can take to legitimize their activities, in particular, increasing their transparency and accountability level about financial and non-financial information (Nicolò et al., 2020a). In this sense, the authors see integrated reporting as “a useful tool, permitting the two strands of information (financial and non-financial) to be integrated in a single document, [...] improving transparency and gaining legitimacy” (Nicolò et al., 2020b, p. 6). Both these studies (Nicolò et al., 2020a, b) explore the factors influencing the adoption of integrated reporting in order to make organizations obtain legitimacy. The third article states that, as the institutional approach focuses on how organizations build their legitimacy (Baldini et al., 2018) and legitimacy can be seen as a concept particularly close to institutionalization (DiMaggio & Powell, 1983), there exists a connection between legitimacy and institutional theories, in particular, in their application towards community (Marasca et al., 2020). In some cases, these two theories tend to overlap and cannot be seen as mutually exclusive, but “both provide a complementary perspective in understanding why firms respond to changing social pressure and expectations” (Marasca et al., 2020, p. 3). Organizations tend to adopt practices institutionalized in their institutional context in order to gain legitimacy. In this perspective, institutional and legitimacy theories have been used to explain how and why integrated reporting can be adopted, questioning whether integrated reporting can be considered a tool of institutional reporting or of social legitimization (Marasca et al., 2020). The relationship between these two theories is recalled also in another article (Montecalvo et al., 2018), where institutional theory is considered suitable to be applied in the field of integrated and sustainability reporting, since, in contrast with legitimacy theory, where the issue of sustainability reporting is seen as the outcome of specific managerial behaviour, the institutional theory sees the reporting activity as being due. All the other

organizations do so and it is seen from the governance of public sector organizations as something to be taken for granted. In this perspective, institutional theory can be used to explain the change in reporting activities according to the institutional context. Specifically, the study by Montecalvo et al. (2018) investigates the impact of integrated reporting on environmental and social disclosures.

4.2.2 Other Frameworks

More than half of the sampled theoretical studies (10 of 16) adopt approaches different from the three theories discussed above. Such approaches are all different among these works, except for three articles (Caruana & Grech, 2019; Oliver et al., 2016; Tirado-Valencia et al., 2019) that focus on *integrated thinking*. It is “the active consideration by an organization of the relationships between its various operating and functional units and the capitals that the organization uses or affects” (IIRC, 2013, p. 33). It should overcome traditional silo thinking and lead organizations to disclose their sustainability decisions in their integrated reports (Caruana & Grech, 2019). It represents a progressive process of internalization (Higgins et al., 2014) and requires a profound transformation of existing management routines and accounting culture in order to conduct organizations to think in an integrated way and adopt integrated reporting (Guthrie et al., 2017). Caruana and Grech (2019) analyse the gap between current reporting practices and integrated reporting, highlighting some possible barriers in the time-consuming process of building an integrated report. We recall here two main examples of such barriers. First, IIRC (2013) does not provide actual measures to be reported (Dumay, 2016) and adopts a terminology appropriate for the private sector that can be a little bit confusing if applied to public organizations. Second, the annual budget represents the main type of financial report for public sector entities and it has already embraced a forward-looking perspective that is one of the main features characterizing integrated reporting and differentiating it from (private) corporate reporting. Therefore, integrated reporting could continue to be perceived as additional (not so needed) information in the public sector (Rensburg & Botha, 2014). In spite of these barriers, Caruana and Grech (2019) conclude that integrated thinking can play a role in improving current practices and favour transparency, accountability and the generation of trust that are significant potential benefits in the provision of public services. In this process, senior management has an essential role as agents (of the same process) able to foster important relationships, attribute financial values to social and natural capital, combine both soft and hard systems thinking and encourage a sustainability view. Oliver et al. (2016) have tried to develop a theoretical framework linking integrated thinking to sustainability in order to enhance the implementation of integrated thinking because of its expected benefits. This is confirmed also in the studies aiming to empirically investigate the effective improvement in sustainability implied by integrated thinking in the field of public sector enterprises; nevertheless, integrated thinking emerges to be not yet fully implemented in the integrated reports of the examined public organizations (Tirado-Valencia et al., 2019). This process seems to demand much

time, good coordination of internal processes, great involvement of managers with also non-financial aspects, interconnected information, in order to effectively improve the sustainability (of the examined state-owned entities) and the citizens' perception. Therefore, if, on the one hand, integrated thinking appears to be a relevant theoretical concept for integrated reporting, on the other, its meaning is ambiguous and its implementation challenging.

The other frameworks adopted by these sampled theoretical studies are mainly seven. First, it is worth recalling the use of *dialogic accounting* as a theoretical lens recently employed to study the potential of integrated reporting as an accounting tool suitable for creating a dialogue with stakeholders, improving cooperation and thus strengthening accountability (Pärl et al., 2020). Second, Cavicchi et al. (2019) use a *performative approach* to investigate the factors that influence the development of integrated reporting practices in the healthcare sector, analysing the process of production, construction and consumption of the report. The performative approach interprets accounting as a social product and hence accounting practices are strongly influenced by how accountants develop knowledge of them. In this perspective, integrated reporting appears as a tool influenced by who prepares and uses it. Third, from a different perspective, the implementation of the *observation theory* and the construction of a frame of analysis based on scientific observation theory (Ellwood & Greenwood, 2016) have pointed out that accounting constructs a "reality", including items of economic and non-economic values. In this paper, the observation theory is linked to theories of how measurement affects reality, which are used to interpret the application and consequences of accounting for measuring different items. The difficulty is measuring and communicating different types of value: this assumes great relevance due to the integrated value approach of integrated reporting (Ellwood & Greenwood, 2016). Fourth, a further critical study has adopted *Foucault's governmentality framework* (Foucault, 2009) in a diachronic perspective in order to explore how accounting operates in the context of charities considering both financial and non-financial information (Servalli, 2013). Fifth, it is worth mentioning the Laughlin (1991)'s *model of organizational change* and the following Stubbs and Higgins' (2014) theoretical framework which have been recently used to analyse the challenges linked to integrated reporting implementation (Iacuzzi et al., 2020). Sixth, another study uses Laughlin's model of organizational change to explore whether internal mechanisms of change support the development of integrated reporting (Guthrie et al., 2017). This paper aims to explore the linkages between integrated reporting and organizations' internal processes, in order to analyse the internal mechanisms of change that can lead organizations to adopt integrated reporting and find out the consequent impact on integrated thinking. Finally, one research has employed institutional theory in combination with the concept of *hybridity* (Argento et al., 2019). This study implements a quantitative content analysis of the sustainability reports or integrated reports of state-owned enterprises that are characterized by hybridity because of their multiple set of stakeholders, with conflicting goals and inconsistent activities. Accordingly, different institutional logics may be represented by these organizations and influence their disclosure practices. The research investigates the factors influencing the type of

disclosed information considering that accountability is particularly important for these organizations. The findings of the study point out that many state-owned enterprises adopt integrated reporting instead of standalone sustainability reports, suggesting the potential role of integrated reporting in fostering transparency and accountability.

5 Discussion and Concluding Remarks

This chapter has illustrated and discussed the results stemming from a review of the academic debate on integrated reporting in the public sector. Complementing the results of previous reviews of the literature on integrated reporting from a broad perspective (e.g., Dumay et al., 2016; Velte & Stawinoga, 2017; Vitolla et al., 2019), the current analysis has been focused on the public sector. This research has been motivated by the growing awareness of the relevance of new alternative reporting tools suitable for strengthening accountability (Kaur & Lodhia, 2019; Manes-Rossi & Orelli, 2020) and the specific attention paid to integrated reporting by both practitioners and academics. The role integrated reporting can play in enhancing accountability, effectiveness and transparency can be influenced and driven by research on the topic and their contributions to the development of the practice. Therefore, the research has addressed the following research questions: How is research for investigating integrated reporting in the public sector developing (*RQ1*)? What is the theoretical backdrop of the integrated reporting research (*RQ2*)?

Concerning the first research question, the findings of the review, illustrated in the previous sections, can be summarized as follows. First, the analysis of the academic debate has confirmed the growing attention paid to the integration of financial and non-financial information over the last years, as shown by the increase in the number of publications over the last two years. In parallel, the still limited number of studies on the topic implies that integrated reporting in the public sector is still in its infancy. Second, the recent interest in integrated reporting in the public sector has been characterized by a predominant attention paid to complex organizations, such as state-owned enterprises and specific public services, such as education and healthcare, instead of focusing on the potential of integrated reporting at the different government tiers. This can be considered the consequence of the high expectations put on integrated reporting as a tool for reinforcing accountability and integrating and balancing contrasting values and interests. Further, the focus on public services and hybrid organizations rather than on governments can be explained in light of the process of reforms in the public sector inspired by NPG and PV. Indeed, over the last years, the focus has shifted towards the final services and values to deliver, empowering multiple and different actors to this purpose and reinforcing the role of reporting. Third, after an initial attention paid to South Africa, main attention has been paid to Europe and, only more recently, different settings, such as New Zealand and America, have been investigated. This suggests that the emphasis on integrated reporting is growing over time and across space, as has previously occurred with

integrated reporting in the private sector. Fourth, there is a relevance of commentary/normative research, while the empirical analysis represents 33% of the dataset. This latter approach is mainly realized through case studies based on interviews or document analysis. Finally, the analysis of reports is often the core of the research on integrated reporting and implemented in the form of content analysis, which represents a predominant approach.

About the second research question, with reference to the analysis of the theoretical approaches, it is possible to draw the following considerations. First, almost half of the sampled works do not adopt an explicit and formal theoretical approach. Often, these studies use the <IR> Framework (IIRC, 2013) as a reference model to guide their discussions. Such lack of a theoretical approach seems to be consistent with either a commentary approach or a normative comparative examination. Second, in line with previous reviews of the literature, the most used theoretical approaches are stakeholder theory, legitimacy theory and institutional theory (Speziale, 2019). These three theories are the most used in non-financial information disclosure studies. In the integrated reporting studies, researchers usually assume a system-based perspective, where the disclosure policies of a public sector organization are seen as a strategy to influence stakeholders or fulfil their expectations. The predominance of these approaches can be explained in light of the peculiarities of the public sector: public sector organizations are constantly coping with the need for building their legitimacy and satisfying the changing needs of their stakeholders in light of the reforms and challenges ongoing in their institutional context. Finally, about the other frameworks adopted in the studies of the sample, there are three studies (Caruana & Grech, 2019; Oliver et al., 2016; Tirado-Valencia et al., 2019) that focus on integrated thinking, aiming to overcome traditional silo thinking and leading organizations to disclose their sustainability decisions in their integrated reports. The concept of integrated thinking is peculiar of studies on integrated reporting and, according to many scholars, represents the foundation to build integration. The other works are based on different approaches (e.g., Foucauldian governmentality, Observation theory, Dialogic theory), most of which introduce case-based empirical studies. Interestingly, the majority of these studies are very recent and this shows a lively and growingly differentiated debate on the topic.

If we compare the set of studies which explicitly adopt a theoretical approach to the studies which lack an explicit and formal theoretical approach, we can state that there is a divergence in terms of focus. On the one hand, the studies classified as non-theoretical are mainly interested in enhancing reflections on integrated reporting as compared to other reporting tools or contrasted to the framework of integrated reporting. This stream of research is mainly normative in nature and designed to find out the current level of development of integrated reporting, stimulating its further adoption. Studies belonging to this stream have involved several different settings (e.g., Africa, America, Europe) and have been published since 2013, suggesting that the interest in integrated reporting in the public sector has been initially normative and descriptive to build a common basis of understanding and acceptance. On the other hand, the set of studies driven theoretically shows a more interpretative approach designed to mainly explore and understand the reasons beyond the

adoption of integrated reporting, the factors influencing the current level of development of integrated reporting and its impact on information disclosure policies. This set of studies, mostly based in Europe, has been published recently (10 of 16 studies are published between 2019 and 2020), suggesting that the attention on integrated reporting is growing and changing its focus. It is considered pivotal to extend this stream of research in order to deepen the understanding of integrated reporting by further investigating, even critically, the challenges linked to its implementation and its effective results.

Based on the findings of this review, it is possible to elaborate several suggestions for future research. Researchers can devote more attention to different settings, both in terms of geographical area and in terms of organizational focus. It can be relevant and interesting to carry out comparative research among different settings and different organizations to better understand the potentialities and criticalities of integrated reporting according to the context. Further, from a methodological and theoretical perspective, there is the call for adopting different approaches that are more theoretically informed. Further empirical studies are strongly suggested in order to deepen the understanding of integrated reporting in practice, going beyond the analysis of the consistency with integrated reporting framework's guiding principles and content elements. Interpretative and critical stances on integrated reporting are strongly called for in order to reflect on the role and effects of integrated reporting more than on its design and reasons for adoption.

This review is not without limitations. It is based on a research protocol that has been influenced by the subjective choices of the authors. Consequently, this can influence the studies finally included in the review and analysed. For instance, the review has excluded conference papers which may provide further interesting insights into the debate on integrated reporting. Nevertheless, this research has provided a first overview of how research for investigating integrated reporting in the public sector has been developing and in what theoretical backdrop. The results of the analysis have allowed us to systematize previous studies on the topic and suggest potential avenues for research. Future reviews of the literature can also complement the current results, analysing other typologies of studies (e.g., conference papers), employing a different protocol (e.g., using different databases), or focusing on different aspects (e.g., specific thematic issues analysed by previous studies).

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The Role of Technology in Integrated Reporting: Practical Insights from the 2020 Framework Revision Consultation



Laura Girella

1 Introduction

Integrated reporting aims to offer providers of financial capital and other stakeholders with a view on how an organization has and will continue to create value in the short, medium and long term. To do so, several are the internal and external devices, formats and languages it can rely on for the production and consumption of this information, namely, XBRL, QR codes, mobile apps, as well as Twitter, Instagram and other forms of social media.

Despite the International <IR> Framework—in both the 2013 and the 2021 versions (IIRC, 2013, 2021)—already pointing to information and communication technology as an important enabler of an organization’s “ability to search, access, combine, connect, customize, re-use or analyse information” (para. 3.9), it has to be noted that, generally, a reliance by report preparers and investors on conventional PDFs persist. In addition, from an academic viewpoint, a—still peripheral—number of studies have explored the possibilities that technology can have in the implementation and use of this reporting practice (Armbruster, 2011; Eccles & Armbruster, 2011; Lodhia & Stone, 2017; Lombardi & Secundo, 2020; Rivera-Arrubla & Zorio-Grima, 2016).

Moving from these considerations, the aim of this chapter is to present, analyse and discuss the comments provided by stakeholders during the 2020 Framework revision consultation process on the future of corporate reporting and, specifically, on the role that technology can cover in and for integrated reports. To this end, an analysis of the topics and types of arguments proposed by respondents is conducted.

L. Girella (✉)

Department of Economics “Marco Biagi”, University of Modena and Reggio Emilia, Modena, Italy

e-mail: laura.girella@unimore.it

The work intends to contribute to the extant literature and practice in two main ways. Firstly, it extends the academic debate that investigates the linkages between integrated reporting and information and communication systems. Secondly, it offers a unique and contemporary overview on the manners in which digital transformation can chart the path forward of corporate reporting, this opening up future and additional research avenues and business practices.

2 Technology and Integrated Reporting: Some Premises

Technology is rapidly developing to enhance the way businesses analyse, use and communicate data. As the volume of data grows—alongside demands for transparency—Chief Information Officers (CIOs) must be at the heart of harnessing these technological developments to identify how the organization is creating value in the short, medium and long terms. A successful CIO should take responsibility for building the information architecture that feeds into the integrated report, so that the business can think, plan and communicate their story of value creation, ultimately leading to internal and external benefits for the business.

Paragraph 3.9 of the <IR> Framework (IIRC, [2013](#), [2021](#)) points to information and communication technology as important enabler of an organization's "ability to search, access, combine, connect, customize, re-use or analyse information". Such abilities can highlight dependencies and support decision making.

During the original <IR> Framework's development in the 2010–2013 period, the landscape already featured a range of technology-enabled communication tools and languages—as aforementioned, from XBRL, QR codes and mobile apps to Twitter, Instagram and other forms of social media—with varying degrees of use in reporting. Since the beginning, the IIRC saw reporting at the cusp of a digital transformation, with one foot in a world of static PDFs and the other in a world of information that was becoming interactive, machine-readable, customized, and available in real-time. Front-office applications, affecting how information was going to be consumed, could find back-office support in data mining and analysis, machine learning, deep learning and artificial intelligence—influencing how information is later gathered and analysed.

In the years since the first <IR> Framework's release, the model of an annual report and quarterly updates as an orchestrated series of engagements persists. So, too, does a reliance on conventional PDFs, with XBRL reporting more prevalent in some world regions than others.

3 The <IR> Technology Initiative

To grasp the full potential of technology-based change, the IIRC decided to set up a group dedicated to provoking a discussion in business and reporting software and systems integration. Accordingly, on November 2014, the <IR> Technology Initiative was formed, aiming to build a deep understanding of how technology can be applied to assist adopters of <IR> on both sides of the report production and consumption value chain. The underlying idea was that participants should explore how technology could spur new trends in reporting and help in the adoption of integrated reporting.

To do so, some well-known technology companies (CRedit360, Deloitte, Indra, PwC, SAP and Tagetik) that were already offering assistance to their clients on this area decided to join this project. In participating in it, they were going not only to pave the way for other companies but also sharing experiences amongst themselves.

As indicated in the press release launching the Initiative:

The goals of this Initiative were to evaluate how technology was currently used to facilitate corporate reporting and related management processes, how technology might enhance integrated thinking, how software could capture narrative elements of reporting, and how technology could facilitate the audit and assurance of an integrated report. As a result, participating companies should have been able to apply their creativity and skills to produce a new generation of innovative reporting products, services and technologies to help their customers adopt <IR> and integrated thinking. (<https://integratedreporting.org/news/technology-initiative-launches-to-underpin-new-generation-of-reporting/>)

As a first result of this collaboration, in 2016, this Group launched the “Technology for Integrated Reporting. A CFO guide for driving multi-capital thinking”, with the aim of helping Chief Financial Officers (CFOs) and Chief Information Officers (CIO) in strengthening their relationship in order to develop technology skills that could support companies’ measurement and reporting practices towards these new trends. In particular, the document showcased practical insights that were already in place to instil an organizational culture that could accommodate this evolution.

It was realized that “To succeed, business thinking, management and reporting depends on broader information sets and quicker, more sophisticated ways of analysing the material information for effective decision-making. This requires the application of technology to transition from the largely financial model of management practice and corporate reporting to an integrated view that supports business resilience.” (<https://integratedreporting.org/resource/technology-for-integrated-reporting-a-cfo-guide-for-driving-multi-capital-thinking/>).

In June 2018, the <IR> Technology Initiative group published a second document titled “Technology primer for integrated reporting: A Chief Information Officer guide”, identifying steps that Chief Information Officers can take to build an information architecture that supports integrated reporting.

4 The Role of Technology in Corporate Reporting

Following the interest and urgency that technology was witnessing in and around integrated reporting, the choice has then been for the IIRC to include it as a strategic topic also in the consultation process aimed at the revision of the International <IR> Framework that took place in 2020. This consultation process has been organized around two main phases: a so-called Focused Engagement Consultation of 30-days, from February to March 2020, and a proper public consultation of 90-days from May to August 2020.

The former was seeking views from stakeholders on three ‘Topic Papers’, the first two, which addressed the responsibility for an integrated report and business model considerations, were aimed to inform and shape the direction of the 90-days <IR> Framework revision process. The third one titled “Topic Paper 3—Charting a path forward” explored themes shaping the future of corporate reporting, including assurance and the role of technology. In particular, it was proposing some relevant technology-related subject areas for consideration by the audience.

It pointed out that there is debate regarding when and to what extent technology can and will influence corporate reporting with special reference to the following questions:

- Organizations’ readiness for a modified reporting regime and the extent to which such technology changes present risks versus opportunities
- How corporate reporting standards and frameworks can, or should, anticipate technology-enabled advances
- Implications of a modified reporting regime on the connectivity, comparability and reliability of information produced and consumed.

To this end, the actual questions posed were the following:

We invite market views on how technology might significantly influence the field of corporate reporting in the years to come. What considerations should inform the IIRC’s strategic deliberations on the role of technology in future corporate reporting?

The IIRC received 90 responses to Topic Paper 3 (<https://integratedreporting.org/2020revision/topic-paper-3/>). As for stakeholder groups, consultants, report preparers, professional bodies and academia were the most prolific of the stakeholder groups to respond. In terms of geographical spread, European responses featured most heavily, but all geographic regions were represented.

By far the most frequent theme raised was the move away from static PDFs to digital reporting, with many respondents specifying the technologies or practices such as data indexing and real-time reporting that should accompany this shift. Advice was common: both on how to engage with specific

(continued)

technologies, as well as more generally on how to keep track of, and give guidance on, the technologies that might become part of integrating reporting in the future.

The responses that were suggesting that the IIRC take up a role in the technology space were referring to the fact that technology can play a fundamental role in anticipating future corporate reporting mechanisms, identifying the needs and interest of report preparers, understanding the evolving needs of report users, considering the pitfalls of technology and a strong technology-based strategy, and finally, considering growing market interest in data indexing and taxonomies.

However, some respondents were also opposing the possibility for the IIRC to prioritize a focus on technology as this was not considered as being part of the IIRC's remit and, more generally, there is a lack of technology expertise within the IIRC itself.

Hence, given the interest arisen and some contradictory views put forward in the 30-days' consultation, the IIRC decided to further consult the market on this topic during the 90-days' consultation (<https://integratedreporting.org/2020revision/>).

In particular, question 14 of the Consultation Draft asked whether the IIRC should prioritize exploring technology's role in future corporate reporting. The majority of respondents agreed with this question, while almost 20% were opposed. Interesting to note, the majority of positive responses were received from academics, professional bodies and industry organizations, while those opposing were belonging to preparers, standard setters and framework developer organizations.

In terms of responses, similarly to the results obtained during the Focused-Engagement consultation, of the 105 respondents to this Question, 73 (i.e., 70%) supported the IIRC exploring the role of technology in corporate reporting as a priority for four main reasons:

- *Technology plays a key role for improving corporate reporting:* "Technology can act as an enabler for more efficient reporting and to link detailed standing data with current information. It also enables the communication of information via different channels. To this extent, we encourage the IIRC to explore the role of technology in future corporate reporting." (International Professional Body).
- *A technology focus will enhance, and be enhanced by, collaboration:* "Guidance [by the IIRC] regarding the following would be valuable: real-time reporting, the use of concepts like XBRL, value creation tools, real-time engagement with organizations, continuous assurance, the role of technology and related innovations, machine learning and data analytics." (NGO, South Africa).

(continued)

- *Technology will enable more robust and comparable data:* “... the exploration of the role of technology for all reporting purposes is unreservedly welcome. In particular, regarding the issue of evidence-based reporting, technology (such as artificial intelligence) could and will help a lot, for example, to detect and report evidence-based connectivity, which is crucial to apply the concept of integrated thinking effectively in corporate management and reporting.” (NGO, Germany).
- *Technology will improve the integration and connectivity of reporting data.* “Technology will allow for better integration with business processes to achieve greater integrated thinking, to gather data on a timely basis for analysis and decision making, and to support the preparation of the integrated report. (Professional body, Malaysia).

Those who opposed maintained that this should not be the focus of the IIRC.

Thus, also the market feedbacks to Question 14 gathered during the 90-days’ Framework revision consultation indicated a clear expectation that the IIRC, soon to be the Value Reporting Foundation, should be involved in, if not leading, efforts to explore the role of technology in making corporate reporting and the underlying data more efficient, robust, comparable and better connected.

The IIRC has declared that the rich feedback received from both the 30-day focused engagement and the 90-day consultation, will be considered during its identification of potential courses of action, all of which will be assessed within the context of efforts already underway by other parties. For example, Carbon Disclosure Project (CDP) is in the process of expanding and upgrading its platform to host more sustainability information, while the EU Commission has approved a Regulation of a taxonomy for reporting non-financial information by financial and investing institutions. In addition, the EU Commission has very recently (April 21, 2021) released a proposal for a new Corporate Sustainability Reporting Directive (CSRD) where it is clearly stated that for companies’ financial statements and management report should be released in a single electronic reporting format (XHTML) and sustainability information only should be marked-up, to make it machine readable. This is going to ensure at an EU level that information is published in electronic format and that reported information reaches Officially Appointed Mechanisms (OAMs) towards the formation of a European Single Access Point (ESAP).

5 Conclusions

Technology is a critical variable for evolving integrated reporting into a mainstream reporting model affecting both internal practices and external utilization.

In this process, technology is capable of transforming the role and usability of this advanced form of corporate accountability, but, at the same time, technologies such as the XBRL digital language call for some higher level of standardization and comparability.

In other terms, the impact of technology on integrated reporting is not going to be neutral and can to some extent change its principles-based nature.

This highlights a paradox the IIRC is facing: the more and more pressing need to move towards a larger role of technology in the various phases of preparation, dissemination and usage of integrated reporting may produce a series of unintended consequences on its characteristics and, namely, its corporate specificity and “tailor-made” features.

How to combine these opposing trends and needs linked to the inevitable spreading of technology vis-à-vis integrated reporting is clearly one of the major challenges that IIRC and its accountability format will have to address to further develop in corporate and investor mainstream practices.

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The Potential Contribution of XBRL



Andrea Fradeani

1 Introduction

This short chapter offers some considerations about the potential contribution of the eXtensible Business Reporting Language (XBRL) with reference to non-financial disclosure (NFD) and integrated reporting (IR).

The growing need for reliable, complete, and periodic information on an entity's performance, more so than the canonical financial one, amplifies—limiting our analysis to what we consider useful for the purpose of this study—three classic problems: difficulty in preparing reports with (also) these purposes, these reports' usability, and these reports' comparability. In a global context characterized by the production and digital consumption of data, we wonder whether technology such as XBRL—well established in the context of traditional financial reporting—can respond to the previously mentioned issues, particularly with reference to NFD and IR. This is in light of an additional factor: that digital information should be coded in formats that allow for its simple and immediate (and perhaps even automatic) machine processing.

The work is structured as follows: after a brief overview of XBRL, we try to understand how its implementation can favor—with particular reference to its Inline XBRL (iXBRL) specification—NFD and IR from the perspectives of its preparers and users. We conclude with a few notes on the adoption of the European Single Electronic Format (ESEF).

A. Fradeani (✉)

Department of Economics and Law, University of Macerata, Macerata, Italy
e-mail: andrea.fradeani@unimc.it

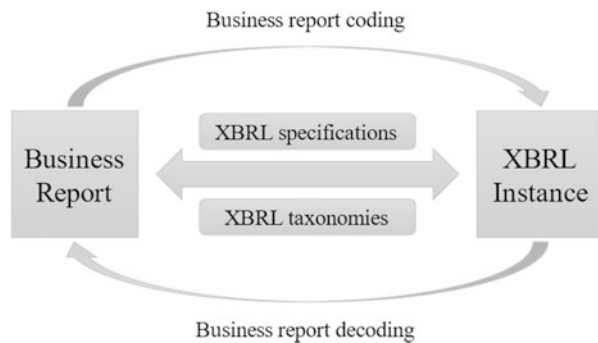
2 A Brief Overview of XBRL

XBRL is a markup language based on the Extensible Markup Language (XML) and designed for digitally coding business reports. Created at the turn of the new millennium from the vision of Charles Hoffman (Kernan 2019) and managed by the international nonprofit consortium XBRL International (<https://www.xbrl.org>), according to the current XBRL Specification 2.1,¹ its aim is “to enhance the creation, exchange, and comparison of business reporting information.”

Coding a business report in an XBRL Instance means breaking it down, following the XBRL specifications and one or more taxonomies, into a set of tagged elements (each of which may contain numbers, text, or other types of data); in other words, the XBRL Instance contains the facts of the business report that can be electronically identified, processed, and understood by looking for the meaning of each tag used to mark them up in a specified taxonomy. As a kind of vocabulary, an XBRL Taxonomy collects the concepts (and their characteristics) that can be used in an XBRL Instance and that must be shared between preparers and users: if the first needs a Taxonomy to code the business report, then the latter needs the same Taxonomy to decode it (Fig. 1).

More than 20 years since the conception of XBRL, it has become the global reference standard for digital business reporting, particularly for financial reporting for both listed and unlisted companies.²

Fig. 1 How XBRL works



¹All the XBRL/iXBRL specifications mentioned in this chapter are available on the website of XBRL International (<https://specifications.xbrl.org>, accessed 15 March 2021).

²For more details about the worldwide spread of XBRL, please refer to the XBRL International’s website (<https://www.xbrl.org/the-standard/why/xbrl-project-directory>, accessed 15 March 2021).

2.1 XBRL Compared with Other Digital Formats

This chapter does not explore XBRL in depth, but we believe it is important to offer a brief overview of some of its main strengths over other digital formats—such as Portable Document Format (PDF), Hypertext Markup Language (HTML), Excel Binary File Format (XLS), or Comma-Separated Values (CSV)—that justify its worldwide success. In our opinion, there are two key features that, when combined, make XBRL a better solution compared with the more traditional ones: processability and comparability.

We will start with processability. From a business reporting perspective, what is one of the main differences between XBRL and, for example, PDF or HTML? All three formats can communicate business facts well, but they are designed with different recipients in mind: the latter two have human reading as their (almost exclusive) purpose, while the goal of XBRL is to offer business reports in a computer-readable format so they can be processed immediately by any compatible software. In other words, if the concern was only to view business reports, then PDF or HTML would undoubtedly be better and one would probably never feel the need for a format like XBRL. However, if someone needed to examine a business report quickly or have many business reports to analyze, then the situation will change radically: a solution like XBRL becomes almost necessary because it enables the easy import of business facts into software dedicated to processing them without the costs, times, and risks related to manual retyping or (optical) character recognition.

We will now move on to comparability. If processability is only the main benefit of XBRL, then why not use formats like XLS or CSV? These formats are practical and well known, without considering that the data in the XBRL Instances often end up being imported and processed through spreadsheets. Here, we might discuss the advantages of a dedicated markup language like XBRL in coding documents that are, at least normally, as complex and varied as business reports. However, this is not the point we want to stress upon. In fact, when a quick comparison of several business reports from different companies is needed, processability alone is not enough: their comparability comes into play and has a crucial role. Having the business facts marked up via taxonomies shared at the national and/or international level represents a giant leap towards the (automatic) comparability of the business reports. Specifically, preparers must bring the business facts of their different companies back, marking them up, to concepts present in the same vocabularies, thus allowing users to easily identify, understand, and compare them from the XBRL Instance.

2.2 The Inline XBRL Specification

We have already pointed out that the goal of XBRL is to offer business reports in a computer-readable format so that they can be processed immediately by any

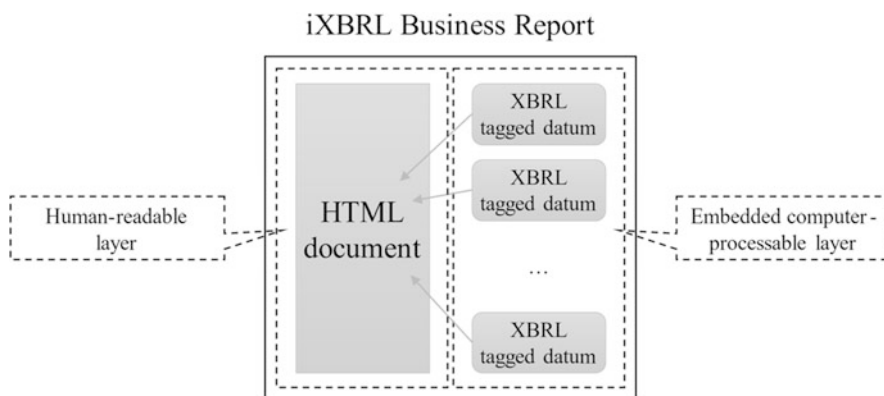


Fig. 2 The two layers of an iXBRL business report

compatible software. However, these documents are also (primarily) intended for human reading. In light of this last consideration, one of the most relevant weaknesses of the language—with reference to XBRL Specification 2.1—is that it is not designed to describe the graphical layout of the business reports coded.

iXBRL was developed³ to overcome this weakness. According to the current Inline XBRL Specification 1.1, iXBRL is “a standard for embedding XBRL fragments into an HTML document. The objective is to provide documents which can be viewed in a browser while making use of XBRL tags which can be processed automatically by consuming applications.” The idea behind iXBRL is as simple as it is convincing: combine the communicative potentials from the human reading perspective of HTML, which is the markup language used for web pages, with the processability and comparability features of XBRL.

Thanks to iXBRL, preparers can use HTML to transform their business reports into web pages, without particular limits in terms of expressive possibilities and graphic layout, in which they can embed XBRL codes to mark up—following one or more taxonomies—certain parts of their data. Thus, users can view and interact with those business reports via a web browser, but their data can also be processed by any compatible software. In other words, a business report in iXBRL becomes a kind of two-layered document: one for human reading in HTML and the other for computer processing in XBRL (Fig. 2).

iXBRL is rapidly being established around the globe;⁴ examples of this success are its adoption for HM Revenue and Customs (HMRC) and Companies House

³According to Appendix D of the Inline XBRL Specification 1.0, its initial draft dates back to 29 November 2007, while it was released on 20 April 2010.

⁴With reference to the worldwide spread of iXBRL, please see the XBRL International’s website (<https://www.xbrl.org/the-standard/what/ixbrl>, accessed 13 May 2021).

filing in the United Kingdom,⁵ and for financial reports filings on securities markets such as those in the United States⁶ and, as we will see later with ESEF, the European Union (EU).

3 The Potential Contribution to NFD and IR

What can be the potential contribution of XBRL to NFD and IR,⁷ with particular reference to its iXBRL specification? Before attempting to answer this question from the perspectives of preparers and users, it is important to note that the adoption of this format means the report's transformation into a kind of two-layer document: one for human reading in HTML and the other for computer processing by embedding XBRL codes.

We will start with the perspective of preparers. We believe that the main advantage of iXBRL regarding their activities, when compared with the use of more traditional formats, is related to the need to follow one or more taxonomies to proceed with marking up. In particular, we refer to the effect that the existence of one or more nationally and/or internationally recognized XBRL taxonomies (perhaps also specific to various business sectors) could have on preparing reports in terms of the simplification, completeness, and security of their contents. In other words, the development and affirmation of authoritative and quality XBRL taxonomies dedicated to NFD and IR would certainly assist preparers—collecting the markable concepts (and their characteristics)—in the interpretation and application of the related frameworks and standards. However, the risk that the mechanism described above could instead lead to greater difficulties where the taxonomy or taxonomies used do not have the necessary quality and completeness cannot be

⁵For more details about the iXBRL adoption for HMRC and Companies House filing, please refer to the *XBRL guide for business* (<https://www.gov.uk/government/publications/xbrl-guide-for-uk-businesses/xbrl-guide-for-uk-businesses>, accessed 13 May 2021).

⁶On the iXBRL mandate by the U.S. Securities and Exchange Commission (SEC), please see the SEC's website (<https://www.sec.gov/structureddata/osd-inline-xbrl.html>, accessed 15 March 2021). For an analysis of the advantages of iXBRL over XBRL regarding the SEC filing, please refer to Basoglu and White (2015).

⁷There are still few studies on the potential contribution of XBRL to the NFD and IR: let us mention Mora González and Mora Rodríguez (2012), Seele (2016), Flores Muñoz et al. (2018) and La Torre et al. (2018). For a list of the (still) few initiatives on reporting of nonfinancial information using a digital format, please see Question 2.3—in particular, Table 10—in Appendix 4.6 of the final report entitled “Proposals for a relevant and dynamic EU sustainability reporting standard-setting” dated February 2021. This report, by the European Lab Project Task Force on preparatory work for the elaboration of possible EU non-financial reporting standards (PTF-NFRS), is available on the website of the European Financial Reporting Advisory Group (EFRAG) (<https://www.efrag.org/Lab2>, accessed 15 March 2021). Note that XBRL is the only digital format mentioned in Table 10; for more on this topic see also paras. 113 and 114 of Appendix 4.6.

underestimated: this is because it would require the preparers to create numerous extensions and/or cause the degradation of the reports' reliability.

Combined with the great usability of HTML, the processability guaranteed by XBRL could also facilitate control and assurance activities, allowing for greater safety and speed in the identification of errors contained in the reports. In particular, embedding XBRL tags would make it possible to apply computerized analysis and validation procedures to ensure greater reliability of what is produced. Last but not least, both HTML and XBRL can simplify the integration of even very heterogenic information: HTML, for example, because of the opportunity to link the various parts and/or data of the report and XBRL because of its ability to separate the structure from the content of the document.

However, we believe that the most significant contributions of iXBRL to NFD and IR are its effects on users. Thanks to HTML, the reports are transformed into web pages, allowing them to be used in a simpler, more intuitive, and interactive way. This is an ideal solution for human reading of such complex and varied documents, that comes at no significant additional costs, and that is available on practically any type of modern electronic device (e.g., smartphones, tablets, notebooks, personal computers). In addition, the ability to link the various parts and/or data makes it easier and faster to navigate and analyze the reports, thereby considerably facilitating the integration of the different information they contain.

Using iXBRL means there is the presence of an embedded computer-processable layer that allows users to gain what we think are the most important advantages: processability and comparability. With reference to the first, having non-financial data or integrated reports in a computer-readable format allows for their immediate processing: users can import the information into any compatible software and process it without the costs, times, and risks related to manual retyping or (optical) character recognition. This feature would also make it easier to use automated processing and/or artificial intelligence systems, which can improve the usefulness of the reports.

Marking up data following taxonomies dedicated to NFD and IR, which are recognized at the national, international, and/or industry sector levels, would facilitate the comparability of reports, especially for such varied information. The use of concepts from the same vocabularies would give users easy identification, understanding, and comparison of the available data. However, these advantages depend on the affirmation of the taxonomies with the necessary quality and completeness; otherwise, there may be a paradoxical risk of incurring difficulties of comparison related to the proliferation of extensions⁸ or errors of interpretation. Last but not least, typical of any standardization process, we cannot underestimate the risk of flattening the information provided to an inadequate level.

⁸Even the best taxonomy may not be able to offer all the necessary concepts to mark up the data contained in the specific report, thus making it necessary to extend the taxonomy—normally allowed even in case of mandatory taxonomies—with ad hoc concepts defined by the individual preparer. This solution makes it possible, on the one hand, to correctly code the report into XBRL, but, on the other, it creates difficulties in terms of its comparability.

4 The Challenge of ESEF Adoption

Through the Commission Delegate Regulation (EU) 2019/815 of 17 December 2018, the EU mandated the preparation in ESEF of the annual financial reports (AFRs) of issuers with their securities admitted to trading on the regulated markets of any Member States. In short, they have to prepare their AFRs entirely in Extensible Hypertext Markup Language (XHTML)⁹ and mark up in XBRL, respecting Inline XBRL Specification 1.1 and using the ESEF Taxonomy, any International Financial Reporting Standards (IFRS) consolidated financial statements contained in them.

This chapter is not the place to deepen the scope, rules, and phases of the ESEF mandate, which was originally to be applied, pursuant to Art. 8 of the Commission Delegate Regulation (EU) 2019/815, “to annual financial reports containing financial statements for financial years beginning on or after 1 January 2020,”¹⁰ but recently, subject to a Member States’ optional postponement of one year because of the COVID-19 pandemic.¹¹ For the purposes of our chapter, note that Regulation 2019/815 provides for wide use of XBRL, not so much in terms of compulsion—because it is limited to IFRS consolidated financial statements and based on a minimum level set out by para. 2 of its Art. 4—but on a voluntary basis. In fact, issuers may also use XBRL to the following:

- “mark up disclosures presented in IFRS consolidated financial statements other than those set out in paragraph 2” (para. 3 of Art. 4)
- “mark up all parts of their annual financial reports other than those set out in Article 4,” but only if the issuer is incorporated into a Member State and the latter has provided a taxonomy for those parts (para. 1 of Art. 5).

Thanks also to the adoption of ESEF, and provided that the appropriate taxonomies for NFD and IR are developed, we believe that XBRL will likely also become the standard electronic language for marking up NFD and IR in accordance with the iXBRL specification at the European level.¹²

⁹According to the World Wide Web Consortium, “XHTML is a variant of HTML that uses the syntax of XML” (<https://www.w3.org/standards/webdesign/htmlcss>, accessed 15 March 2021).

¹⁰The text of the Commission Delegate Regulation (EU) 2019/815 in this paragraph is taken from its consolidated version—with no legal effect—updated on 1 January 2021 available on the EUR-Lex’s website (http://data.europa.eu/eli/reg_del/2019/815/2021-01-01, accessed 15 March 2021).

¹¹More information about the Member States’ optional postponement of one year of ESEF is available on the European Commission’s website (https://ec.europa.eu/info/publications/201211-esef-postponement_en, accessed 13 May 2021).

¹²On this topic, please see the conclusion section of this chapter and the documents referenced in notes 17 and 18.

5 Conclusion

In this short chapter, after a brief overview of XBRL, we offered some considerations about the potential contribution of this electronic language to NFD and IR, with particular reference to its iXBRL specification.

The report's transformation into a kind of two-layered document—one for human reading and the other for computer processing—would allow for greater benefits than more traditional formats. We believe the use of iXBRL can favor the preparation of both reports with non-financial data and integrated reports and, importantly, their use, especially in terms of their usability, processability, and comparability.

One of the most important conditions for this to happen is the affirmation of authoritative and quality taxonomies at the national, international, and/or industry sector levels. These taxonomies should be followed by preparers to codify their reports with minimal use of extensions; users should rely on the same taxonomies to understand and (automatically) process the content of the reports, gaining enormous advantages in terms of comparability.

However, this is a difficult challenge because of the characteristics of the information to be coded. In our opinion, this challenge can only be overcome through the work and cooperation of the various organizations responsible for setting the standards in this field, both in terms of content (i.e. the Sustainability Accounting Standards Boards (SASB),¹³ the International Integrated Reporting Council (IIRC), and the possible upcoming International Sustainability Standards Board¹⁴ (ISSB))¹⁵ and technology (i.e. XBRL International¹⁶ and its local jurisdictions). In this regard, we cannot fail to mention the latest developments at the European level: the proposal of the European Commission for a “Corporate Sustainability Reporting Directive (CSRD)”,¹⁷ which provides, among other things, both the development of European standards for sustainability reporting and the requirements for marking up this

¹³The SASB recently made the SASB XBRL taxonomy available for comment, please see its website for further details (<https://www.sasb.org/blog/taxonomy-available-for-public-comment>, accessed 15 March 2021).

¹⁴We refer to the possible creation of the ISSB by the IFRS Foundation, as proposed in its Exposure Draft ED/20215 of April 2021; this is available on the IFRS Foundation's website (<https://www.ifrs.org/content/dam/ifrs/project/sustainability-reporting/ed-2021-5-proposed-constitution-amendments-to-accommodate-sustainability-board.pdf>, accessed 9 May 2021).

¹⁵In the direction of the advocated cooperation, we point out the Statement of Intent to Work Together Toward Comprehensive Corporate Reporting of September 2020 shared by the CDP, Climate Disclosure Standards Board (CDSB), Global Reporting Initiative (GRI), IIRC, and SASB; the paper is available via <https://impactmanagementproject.com/structured-network/statement-of-intent-to-work-together-towards-comprehensive-corporate-reporting>, accessed 15 March 2021).

¹⁶For example, consider the recent update of the Unit Type Registry; for further information, please refer to the XBRL International's website (<https://www.xbrl.org/news/new-unit-definitions-published-to-enable-sustainability-reporting>, accessed 15 March 2021).

¹⁷See the communication “Sustainable finance package” published on 21 April 2021; this is available on the European Commission's website (https://ec.europa.eu/info/publications/210421-sustainable-finance-communication_en, accessed 9 May 2021).

information in a machine-readable format (which would appear to be ESEF¹⁸ and, therefore, XBRL in accordance with the iXBRL specification).

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¹⁸In fact, ESEF is mentioned in note 15, referred to in para. 2 of the “Explanatory Memorandum” of the proposal of the European Commission for a “Corporate Sustainability Reporting Directive (CSRD)”; this is available on the EUR-Lex’s website (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0189>, accessed 13 May 2021).

Part V
Accountability & Auditing of Non-financial
Information and Integrated Reporting

Harmonisation or Standardisation of Non-financial Reporting in European Union: The Role of Regulation



Silvia Testarmata and Mirella Ciaburri

1 Introduction

Non-financial Reporting (NFR) is a mode of communication between companies and stakeholders that provides information about a company's strategy, its social and environmental policies, and its performance (Dumay, 2016). In recent years, after numerous actions aimed at harmonising the accounting rules for the preparation of financial statements, the European Union (EU) has begun to regulate NFR, with the aim of introducing non-financial information (NFI) within the traditional Financial Statements in the Notes and in the Management Commentary (EC, 2011). This is the case of the recent and renewed interest of the International Accounting Standards Board (IASB) on the Management Commentary and its Non-Financial content (IFRS Foundation, 2020). This trend in the EU regulation confirms the relevance of NFI and the growing importance to integrate financial and non-financial information (IASB, 2017).

Actually, the relevance of NFR has been recognised by the EU since 2001, with the European Commission Recommendation 2001/453/EC on “recognition, measurement and disclosure of environmental issues in the annual accounts and annual reports of EU companies” (EC, 2001). In this sense, the EU acknowledged that NFR is necessary for an understanding of the company's development, performance, and position, and it is vital for managing change towards a sustainable global economy by combining long-term profitability with social justice and environmental protection (EC, 2013). However, taking into account the evolving nature of this area of corporate reporting and in regard to the potential burden placed on companies below

S. Testarmata (✉) · M. Ciaburri

Department of Economics, Niccolò Cusano University of Rome, Rome, Italy
e-mail: silvia.testarmata@unicusano.it; mirella.ciaburri@unicusano.it

certain sizes, Member States have often chosen to waive the obligation to provide NFI in the annual report of EU companies (EC, 2011).

Although the issue of social and environmental disclosure has been on the EU agenda for 20 years (Carini et al., 2018), a regulatory action on NFR has only recently taken place in Europe, with the issuing of the Directive 2014/95/EU, also called the NFR Directive (NFRD) (Fortuna et al., 2020; Veltri et al., 2020). According to the NFRD, certain large public companies are obliged to disclose NFI related to their performance and their impact on society and environment, commencing on or after 1 January 2017 (EU, 2014). At a policy level, the underlying motivation for the transition from voluntary to mandatory disclosure of NFI is the growing need for transparency and rigor related to the NFI disclosed by EU companies (EC, 2013). Generally speaking, the directive is seen as a means commonly used to achieve harmonisation, with the aim to improve the comparability of accounting and reporting rules and enhance corporate accountability (Thorell & Whittington, 1994). Thus, the NFRD represents an important regulatory action towards the harmonisation of NFR practices of all European Member States and marks the shift in NFR from a voluntary exercise to one that is mandatory for the EU companies concerned (Buhr et al., 2014). However, the high flexibility of action granted to companies in providing NFI seems to go against the main aim of comparability, because companies can rely on a range of different reporting frameworks and guidelines to achieve compliance (La Torre et al., 2018).

During the recent past, there has been an intensifying discourse on the regulatory activity needed to converge and standardise NFR frameworks (Accountancy Europe, 2020; FEE, 2015; World Economic Forum, 2020). Although NFR has become a central concern of many stakeholders, such as managers, investors, and consumers, wider society, central banks, and regulators, there is a fragmented ecosystem of NFR frameworks and guidelines for how companies can measure and report on their non-financial performance (FEE, 2016; Testarmata et al., 2020). Nowadays, the call for a single set of globally accepted NFR standards that specifies metrics and disclosure is a very urgent matter for stakeholders (Adams & Cho, 2020; Barker & Eccles, 2018; De Villiers & Sharma, 2020), and many international standard setters, such as the European Financial Reporting Advisory Group (EFRAG, 2021), GRI's Global Sustainability Standards Board (GSSB, 2018), and the IFRS Foundation (2020), are fully engaged in the debate on standardisation of NFR to solve this huge problem.

In this context, the purpose of this chapter is to assess whether the regulatory action taken by the EU through the issue of the NFRD leads to the harmonisation or to the standardisation of NFR practices in Europe and shed light on the harmonisation challenge posed by the NFRD (Mio et al., 2020). So, the research questions this study tries to answer are as follows: (1) to investigate in what manner voluntary reporting frameworks and guidelines are used to comply with the NFRD in order to understand what are the most compliant (suitable) frameworks and guidelines with the NFRD requirements and (2) to assess if the NFRD is a regulatory provision that ensures the comparability of NFR throughout the EU.

As for the theoretical foundations of the study, this research is embedded within the model of legitimacy-influenced disclosure (Dumay et al., 2015), based on material legitimacy and transparency. This means that in a context of mandatory reporting, the coercive force of law prevails; in other words, companies disclose because they must and they tend to solely disclose information (material) relevant for both the company and the stakeholders. On account of these factors, investigating whether the flexibility of companies' actions in the adoption of a voluntary reporting framework and guidelines granted by the NFRD ensures the compliance with the EU regulation and enhances the comparability of NFR becomes relevant.

Thus, the remainder of this chapter is structured as follows. Section 2 outlines the research design and method. Section 3 explores the international frameworks and guidelines for NFI reporting, analysing their aims, structure, and requirements. Section 4 proposes a critique of the compliance of voluntary reporting frameworks and guidelines with the NFRD provisions. The final section provides some closing remarks, offers insights for future research, and highlights the limitations of the analysis.

2 Research Design and Method

The NFRD establishes the minimum content to be disclosed and defines NFI to be included in the non-financial statement as “environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters, including:

- (a) a brief description of the group's business model;
 - (b) a description of the policies pursued by the group in relation to those matters, including due diligence processes implemented;
 - (c) the outcome of those policies;
 - (d) the principal risks related to those matters linked to the group's operations including, where relevant and proportionate, its business relationships, products or services which are likely to cause adverse impacts in those areas, and how the group manages those risks;
 - (e) non-financial key performance indicators relevant to the particular business”.
- (EU, 2014)

Although the NFRD allows for high flexibility for companies in providing NFI according the way they consider most useful, it explicitly suggests seven standards they can rely on, which are as follows: (a) the Eco-Management and Audit Scheme (EMAS); (b) the United Nations (UN) Global Compact; (c) the Guiding Principles on Business and Human Rights implementing the UN 'Protect, Respect and Remedy' Framework; d) the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises; (e) the International Organization for Standardization's ISO 26000; (f) the International Labour Organization's Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy; and (g) the Global Reporting Initiative (GRI).

Because the frameworks and guidelines for preparing non-financial statements suggested by the NFRD are very different from each other in terms of aims, structure, and content, this study analyses the compliance of these frameworks and guidelines for NFR with the NFRD requirements in order to provide insights into the relation between the voluntary and mandatory disclosure of NFI and to identify what are the most compliant to the minimum content required by the NFRD.

To do so, the research design of this study is based on a comparison between voluntary reporting frameworks and guidelines and the NFRD requirements (Beattie et al., 2004). The content analysis, provided manually by reading the standards in their entirety, is the research method adopted to frame and analyse the compliance of voluntary reporting frameworks and guidelines with the NFRD requirement (Dumay & Cai, 2015; Guthrie, 2014). The minimum content required by the NFRD has been divided between matters and tools, where matters relate to the types of NFI (i.e. environment, society, human rights, and anti-corruption) that have to be provided and tools are the instruments and metrics used in the disclosure of NFI (i.e. business model, policy, outcomes, risks, and key indicators). Additional information contained in the international reporting frameworks and guidelines are also considered in the analysis.

The findings of the research are provided and discussed in Section 4, whereas in the next section, an overview of the international frameworks and guidelines for NFR suggested by the NFRD is provided.

3 International Frameworks and Guidelines for NFR

This section explores the content of the seven international frameworks and guidelines for NFR reporting suggested by the NFRD framing and analyses their aims, structure, and requirements.

3.1 The Eco-Management and Audit Scheme (EMAS)

The Eco-Management and Audit Scheme (EMAS) Regulation was first issued in 1993, and then revised and modified in 2009, as an environmental policy tool introduced by the European Commission for the Community's goal of sustainable development (European Commission, 2009). It allows for the voluntary participation of organisations located inside and outside the Community and has the objectives of promoting continuous improvements and implementations in the environmental performance of the organisations, the periodic evaluation of their performance, and the provision of environmental information. The EMAS is addressed to any organisation that wants to assume economic and environmental responsibility, improve its environmental performance, and communicate its environmental results to stakeholders.

The procedure for implementing the EMAS involves five steps: (i) the organisation should provide an environmental review to identify relevant direct and indirect environmental aspects; (ii) the organisation should implement an environmental management system that needs to be controlled providing internal audits; (iii) the organisation should write an EMAS environmental statement; (iv) the organisation submits to an environmental review and a review of the environmental management system and after a validation of the statement; (v) the organisation can submit an application for registration to the competent body (European Commission, 2009).

The first step of the procedure involves an environmental review, conducted through the analysis of an organisation's internal structure. The analysis should include legal requirements, the identification of direct and indirect environmental aspects and the criteria for assessing their significance, the examination of all existing environmental management practices and procedures, and the evaluation of feedback after investigation of incidents in the past. This analysis should be provided to identify all the relevant information. Examples of direct aspects are air emissions, water emissions, waste, use of natural resources and raw materials, local issues (noise, vibration, odours), and land use. Examples of indirect aspects are product-life-cycle-related issues; capital investment; insurance services; administrative and planning decisions; and environmental performance of contractors, sub-contractors, and suppliers. After the identification of these direct and indirect aspects, the organisation should associate aspects with their effects or impacts on the environment, in order to assess their significance in terms of magnitude, severity, frequency, probability, concerns of interested parties, and legal requirements.

The second step of the procedure is related to the implementation of an environmental management system, which is part of the overall management system in charge of developing, achieving, reviewing, and maintaining the environmental policy. The main task of the environmental management system is to develop procedures describing how, when, and by whom specific actions have to be carried out. An important part of the management system is represented by the internal audit procedure that has the main task of determining if the environmental management system meets the requirements of the EMAS Regulation and if it has been correctly implemented and maintained.

According to the third step of the procedure, the organisation has to prepare an environmental statement containing information about the organisation's structure and activities, its environmental policy and environmental management system, its environmental aspects and impacts, its environmental programme, its objectives and targets, and its environmental performance. EMAS Regulation defines some minimum requirements for the statement: a clear description of the organisation, containing information about its activities, products, and services and its relationship with stakeholders; a description of the organisation's environmental management system; a description of all the significant direct and indirect environmental aspects; a description of the environmental objectives and targets in relation to the significant environmental aspects and impacts; a summary of the data available on the performance of the organisation against its environmental objectives; other factors

Table 1 The Eco-Management and Audit Scheme

The Eco-Management and Audit Scheme (EMAS)
1. Environmental review
2. Environmental management system
3. Environmental statement
4. Verification and validation procedure
5. Registration procedure
Authors’ elaboration

regarding environmental performance; and a reference to the applicable legal requirements relating to the environment.

The following step involves the verification and validation of the procedure. The verification process is intended to verify the compliance between an organisation’s environmental review, environmental policy, environmental management system, internal audit, and the Regulation. The validation process involves the confirmation by the environmental verifier who carried out the verification. These tasks can be provided only by accredited environmental verifiers who are in charge of verifying the organisation is in conformity with all the requirements of the EMAS Regulation.

The last step of the procedure is related to registration: once all the previous steps have been concluded, the organisation can apply to the competent body for registration, presenting some required documents.

The structure of the EMAS Regulation is provided in Table 1.

3.2 The UN Global Compact

The UN Global Compact is a voluntary initiative of the UN created in 2000 for the development of socially responsible corporate practices. Its main mission is to support companies in doing their business responsibly. For this reason, the UN developed a framework composed of ten principles in the areas of human rights, labour, environment, and anti-corruption (UN, 2000). For each principle, the UN Global Compact explains the meaning and describes why companies should care and what they can do.

The first two principles deal with the area of human rights. The first principle states, “Businesses should support and respect the protection of internationally proclaimed human rights”. In order to observe this principle, a business should avoid infringing upon human rights. In addition, a business should also take actions to support human rights, making a positive contribution towards the protection of human rights through its core business, social philanthropy, public policy engagement, and collective actions. Respecting human rights is becoming a business issue because not only is this policy able to strengthen stakeholder relationships, but also not respecting human rights would result in reputation damage.

According to the second principle, “Businesses should make sure that they are not complicit in human rights abuses”. Companies should not be implicated in abuses caused by another company, a State or government, or a group of people. A company can be complicit in human rights abuses in several ways: providing goods or services that it knows will be used to carry out the abuse, benefiting from human rights abuses even if it did not positively assist or cause them, or being inactive in the face of systematic or continuous human rights abuse.

The third through sixth principles fall within the second area analysed by the UN Global Compact: labour. The third principle affirms that “Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining”. This principle states companies should respect the right of their workers to freely establish and join groups for the promotion and defence of their working interests, and they should not interfere in their associations. Associations are created to reach agreements that are jointly acceptable.

Principle number four states, “Businesses should uphold the elimination of all forms of forced and compulsory labour”. Forced labour represents a violation of human rights, and for this reason companies should avoid exacting labour from any person who has not offered himself or herself voluntarily. Forced labour can take a number of forms: slavery, bonded labour or debt bondage, child labour, kidnapping, deprivation of food, full or partial restrictions on freedom of movement, or threats to denounce undocumented workers in the face of authority.

The fifth principle says, “Businesses should uphold the effective abolition of child labour”. The principle presents a table with the minimum age for admission to employment in developed and developing countries. Companies should avoid child labour because it damages child’s physical, social, mental, psychological, and spiritual development.

According to principle number six, “Businesses should uphold the elimination of discrimination in respect of employment and occupation”. This principle affirms that companies should not treat people differently because of their race, colour, sex, religion, political opinion, national extraction, social origin, age, disability, HIV/AIDS status, trade union membership, or sexual orientation. Discrimination can happen in several areas of work like: recruitment, remuneration, hours of work, maternity protection, job assignments, training and opportunities, and job prospects. Non-discrimination policies mean that workers are engaged on the basis of their merit without any preference made on other grounds.

The seventh through ninth principles fall within the area of environment, analysed by the UN Global Compact. The seventh principle states, “Businesses should support a precautionary approach to environmental challenges”. The precautionary approach means that companies should be involved in a systematic application of risk assessment, risk management, and risk communication. Environmental remediation is usually more costly than preventing environmental damage, and investing in non-sustainable production methods has a return that is only short-period oriented.

Principle number eight affirms that “Businesses should undertake initiatives to promote greater environmental responsibility”. According to this principle,

Table 2 The UN Global Compact

The UN Global Compact	
Human rights	1. Businesses should support and respect the protection of internationally proclaimed human rights
	2. Businesses should make sure that they are not complicit in human rights abuses
Labour	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining
	4. Businesses should uphold the elimination of all forms of forced and compulsory labour
	5. Businesses should uphold the effective abolition of child labour
	6. Businesses should uphold the elimination of discrimination in respect of employment and occupation
Environment	7. Businesses should support a precautionary approach to environmental challenges
	8. Businesses should undertake initiatives to promote greater environmental responsibility
	9. Businesses should encourage the development and diffusion of environmentally friendly technologies
Anti-corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery

Authors' elaboration

companies should ensure their actions do not cause damages to the environment. Companies that are more responsible from environmental side can benefit from tax incentive, and consumers are increasingly interested in doing business with responsible companies.

According to the ninth principle, "Businesses should encourage the development and diffusion of environmentally friendly technologies". Environmentally friendly technologies protect the environment, pollute less, and recycle more. Using these technologies, companies can reduce the use of raw materials, leading to increased efficiency and increasing the overall competitiveness of their businesses.

The last principle deals with the anti-corruption area and states that "Businesses should work against corruption in all its forms, including extortion and bribery". According to this principle, companies should avoid bribery, extortion, and other forms of corruption, paying attention to the actions of their employees, associated companies, business partners, and agents and developing correct rules of corporate governance.

The structure of the UN Global Compact is provided in Table 2.

3.3 *The UN Guiding Principles on Business and Human Rights*

The UN Guiding Principles on Business and Human Rights (UN Guiding Principles), issued by the Human Rights Council of the UN, is a set of guidelines for States and companies that is designed to prevent, address, and remedy human rights abuses committed in business operations, unanimously endorsed by the UN Human Rights Council in 2011.

The UN Guiding Principles are based on three main pillars: (i) the State's duty to protect human rights; (ii) the corporate's responsibility to respect human rights; and (iii) the access to remedy. Within the three pillars, there are 31 foundational and operational principles aimed at preventing and addressing the risk of adverse impacts on human rights related to business activity (Human Rights Council of the United Nations, 2011).

The first pillar is related to the States' existing obligations to respect, protect, and fulfil human rights and fundamental freedoms. States have the obligation to protect against human rights abuse within their territory by third parties. In doing this, they have to prevent, investigate, and punish such abuse, implementing and enforcing effective regulations, legislation, and policies.

The second pillar deals with the role of business enterprises as specialised organs of society, performing functions to comply with all applicable laws and to respect human rights. This principle is a global standard of expected conduct for all business enterprises, wherever they operate. Enterprises should avoid infringing on the human rights of others and should address adverse human rights impacts with which they are involved.

The last pillar states the need to provide effective remedies when obligations and rights are breached. According to this third principle, States must take appropriate steps to ensure, through judicial, administrative, legislative, or other appropriate means, that when such abuses occur within their territory and/or jurisdiction, those affected have access to an effective remedy.

According to the UN Guiding Principles, each pillar is an essential component in an interrelated and dynamic system of preventative and remedial measures: the State's duty to protect because it lies at the very core of the international human rights regime; the corporate responsibility to respect because it is the basic expectation society has of business in relation to human rights; and access to remedy because even the most concerted efforts cannot prevent all abuse. Within the three pillars, there are 31 principles aimed to prevent and address the risk of adverse impacts on human rights related to business activity.

The structure of the UN Guiding Principles is provided in Table 3.

Table 3 The UN Guiding Principles on Business and Human Rights

The UN Guiding Principles on Business and Human Rights
1. The State’s duty to protect human rights
2. The corporate’s responsibility to respect human rights
3. Access to remedy
Authors’ elaboration

3.4 *The Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises*

The OECD Guidelines for Multinational Enterprises (OECD Guidelines) are a set of voluntary principles and standards providing recommendations to multinational enterprises for responsible business conduct, issued by the Organisation for Economic Co-operation and Development and issued for the first time in 1976 (OECD, 2011). These principles are addressed to multinational enterprises because, through international trade and investment, they are able to deepen the ties among countries, bringing sustainable benefits and contributing to the efficient use of human and natural resources. The OECD Guidelines provide non-binding standards, which cannot be considered as a substitute of domestic laws. Applying the OECD Guidelines ensures the coherence between economic, environmental, and social objectives.

The OECD Guidelines are structured in eight chapters: (i) human rights; (ii) employment and industrial relations; (iii) environment; (iv) combating bribery, bribe solicitation, and extortion; (v) consumer interests; (vi) science and technology; (vii) competition; and (viii) taxation.

The first chapter deals with human rights, recognising not only that States have the duty to protect human rights but also that enterprises should respect human rights, avoid causing or contributing to adverse human rights, seek ways to prevent adverse human rights, have a policy commitment to respect human rights, carry out human rights due diligence, and provide processes in the remediation of adverse human rights impacts.

The second chapter is related to employment and industrial relations. The principles of this area state that enterprises should respect the right of workers to join trade unions, contribute to the abolition of child labour, and not discriminate against their workers in terms of race, colour, sex, religion, and political opinion. This chapter echoes the three main principles of the 1998 Declaration on Fundamental Principles and Rights at Work, issued by the International Labour Organization (ILO Declaration).

In the third chapter, the OECD Guidelines offers an overview of all the policies enterprises should implement to protect the environment. Specifically, enterprises should collect and evaluate information about the impact of their activities on the environment, pay attention to environmental issues in their business strategies, and improve environmental performance, instituting an environmental management system.

Table 4 The OECD Guidelines for Multinational Enterprises

The OECD Guidelines for Multinational Enterprises
1. Human rights
2. Employment and industrial relations
3. Environment
4. Combating bribery, bribe solicitation, and extortion
5. Consumer interests
6. Science and technology
7. Competition
8. Taxation
Authors' elaboration

The following chapter of the OECD Guidelines is related to bribery and extortion. Enterprises should not offer or accept bribes or other undue advantages, but develop and adopt adequate internal controls for preventing bribery, enhancing the transparency of their activities.

In the fifth chapter, the OECD Guidelines address the issue of consumer interests. In dealing with customers, enterprises should apply fair business principles, providing products of high reliability, quality, and validity. In particular, enterprises should provide goods and services, meeting legally required standards for customers' health and safety and provide accurate and clear information that enables customers to make informed decisions. Moreover, the chapter points out the respect for consumer privacy and the cooperation with public authorities in preventing misleading marketing practices.

Chapter "Sustainability Reporting in Higher Education Institutions: Evidence from an Italian Case" of the OECD Guidelines deals with the topic of science and technology. According to this theme, enterprises should adopt practices transferring and rapidly spreading technologies and know-how. In doing so, enterprises would improve technological progress and job creation processes in the context of sustainable development.

In the eighth chapter of the OECD Guidelines, the argument of competition is encountered. Enterprises should comply with competition laws and regulations and avoid anti-competitive agreements among competitors.

The last chapter of the OECD Guidelines is related to taxation. Enterprises should provide timely tax payments, complying with the regulations of the countries in which they operate.

The structure of the OECD Guidelines is provided in Table 4.

3.5 The ISO 26000

The International Organization for Standardization (ISO) is a worldwide federation of national standard bodies whose main task is to prepare International Standards. ISO 26000 is a standard developed by a group of experts (from 6 different

stakeholder groups: consumers; government; industry; labour; non-governmental organisations (NGOs); and service, support, research, academics, and others) in several aspects of social responsibility, coming from more than 90 different countries (ISO, 2010).

ISO 26000 is an international standard providing guidance on social responsibility. It is intended to encourage every organisation, regardless of its size or location, to become more socially responsible in its stakeholders' relationship and to promote common understanding in the field of social responsibility. ISO 26000 provides seven core subjects of social responsibility, intended to serve as useful guidance on the relationship between an organisation, its stakeholders, and society. In practicing social responsibility, organisations should consider two fundamental practices: recognising its social responsibility within its sphere of influence and identifying and engaging with stakeholders (Clause 5).

The first principle states "an organization should be accountable for its impacts on society, the economy and the environment" (Clause 4.2). According to this principle, an organisation should accept legal authorities' controls on its business activities and provide appropriate responses to this scrutiny. Moreover, an organisation should also repair its illegal or dishonest behaviour.

According to the second principle, "an organization should be transparent in its decisions and activities that impact on society and the environment" (Clause 4.3). Transparency encompasses the disclosure of policies, decisions, and activities for which the organisation is responsible. This information should be made accessible to stakeholders, in order to make them able to evaluate the impact of organisation's behaviours on their area of interest.

The third principle asserts, "an organization should behave ethically" (Clause 4.4). The principle focuses the attention on values like honesty, equity, and integrity, stating that organisations should take care of people, animals, and the environment. Each enterprise should define its values and principles, develop a governance structure able to spread and promote ethical behaviours inside the organisation, and provide control mechanisms able to monitor that values are actually respected.

The next principle affirms, "an organization should respect, consider and respond to the interests of its stakeholders" (Clause 4.5). According to this principle, an organisation should not limit its objectives to the interests of only one group of people (like shareholders, owners, or customers), but they should be addressed to all its stakeholders.

According to principle number five, "an organization should accept that respect for the rule of law is mandatory" (Clause 4.6). In accordance with this principle, an organisation should comply with all laws and regulations, because they stand above each individual or organisation. For this reason, an organisation should keep itself informed of all legal obligations and periodically verify its compliance with laws and regulations.

The sixth principle states, "an organization should respect international norms of behaviour, while adhering to the principle of respect for the rule of law" (Clause 4.67). This principle is linked with the previous one and affirms that when laws do

not ensure environmental or social protection, an organisation should, at least, respect international norms of behaviour.

The last principle deals with human rights and affirms, “an organization should respect human rights and recognize both their importance and their universality” (Clause 4.8). The principle refers to the International Bill of Human Rights and states the importance of respecting the universality of these rights that should be applied in all countries, cultures, and situations.

Together with these seven principles, ISO 26000 defines also seven core subjects, useful for an organisation to become familiar with the issues of social responsibility: organisational governance, human rights, labour practices, the environment, fair operating practices, consumer issues, community involvement, and development. These core subjects are able to cover all the economic, environmental, and social areas that should be addressed by an organisation. In discussing each core subject, the standard includes an overview; the interactions of the core subject with social responsibility, principles, and considerations; several actions an organisation should implement; and expectations of the way in which it should act (ISO, 2010).

The first core subject is related to organisational governance, which represents the system by which an organisation makes decisions in reaching its targets. Organisational governance represents a means through which an organisation can behave in a socially responsible manner in its decision-making process, incorporating the principles of accountability, transparency, ethical behaviour, respect for stakeholder interests, respect for the rule of law, respect for international norms of behaviour, and respect for human rights.

The second core subject refers to human rights. The standard identifies two main categories of human rights: civil and political on one side and economic, social, and cultural on the other side. Human rights transcend laws or cultural traditions, and organisations should act in respect of them, which means providing due diligence and control to ensure they are respected.

The following core subject deals with labour practices of an organisation, including recruitment, disciplinary procedures, relocation, retirement, training, health, working conditions, and remuneration. Socially responsible labour practices are fundamental for social justice, and for this reason, workers should not be merely considered as a factor of production, but compliance with their equitable working conditions should be ensured.

The fourth core subject is related to the environment. Each organisational decision has an impact on the environment, in terms of natural resources depletion and pollution. For this reason, organisations should adopt an integrated approach, taking into consideration all the environmental consequences of their decisions.

Core subject number five refers to fair operating practices, concerning an organisation’s behaviours dealing with other organisations. Fair operating practices deal with the fight against corruption, responsible involvement in the public sphere, fair competition, socially responsible behaviour, and the respect of property rights.

The following core subject deals with consumer issues. Each organisation provides products and services to its customers, and it is responsible to those customers in terms of providing accurate information, using fair contractual processes and

Table 5 The ISO 26000 principles and core subjects of social responsibility

ISO 26000	
Principles	Core subjects
1. Accountability	1. Organisational governance
2. Transparency	2. Human rights
3. Ethical behaviour	3. Labour practices
4. Respect for stakeholder interests	4. The environment
5. Respect for the rule of law	5. Fair operating practices
6. Respect for international norm of behaviour	6. Consumer issues
7. Respect for human rights	7. Community involvement and development

Authors' elaboration

designing products and services that provide access to all. Social responsibility regarding consumer issues is related to fair marketing operations, privacy protection, the reduction of risks deriving from the use of products, and the dissemination of information.

The last core subject refers to community involvement and development. The relationship the organisation has with the community in which it operates should be based on community involvement in order to contribute to its development. In doing this, the organisation should support the values of the community and recognise itself as a stakeholder in the community.

The structure of the ISO 26000 is provided in Table 5.

3.6 The International Labour Organization's Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy

The International Labour Organization (ILO) is a tripartite UN agency whose main task is to set labour standards and develop programmes and policies promoting decent work. The ILO's Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy (MNE Declaration) was issued for the first time in 1977 by the Governing Body of the ILO and then further amended, with its latest version released in 2017. It is an instrument adopted by governments, employers, and workers from all around the world, providing guidance to multinational enterprises on social policy and inclusive, responsible, and sustainable workplace practices (ILO, 2017).

The principles contained in the MNE Declaration are built on international labour standards and provide social policy guidelines addressed to governments, employers, workers' organisations, and multinational enterprises, all who should observe them on a voluntary basis.

Table 6 The ILO’s Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy

The ILO’s Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy
1. Employment
2. Training
3. Condition of work and life
4. Industrial relations
Authors’ elaboration

The MNE Declaration sets out principles in four different fields. The first field is related to employment. Multinational organisations should meet employment requirements and overcome unemployment and underemployment, particularly in developing areas of the world where these problems are most serious. Furthermore, governments should enforce social protection floors, national policies to abolish child labour, and laws establishing the equality of treatment in employment.

The second field of the MNE Declaration deals with training. Governments should develop national policies ensuring relevant training, developing useful skills, and promoting career opportunities for all levels of workers.

The next field analysed in the MNE Declaration refers to conditions of work and life. Multinational enterprises should offer the best possible wages, benefits, and working conditions, considering the needs of workers and their families and several economic factors. In addition, multinational enterprises should provide adequate safety and health standards, facilitating the diffusion of a preventative safety and health culture.

The last field of the MNE Declaration is related to industrial relations. Multinational enterprises should respect the freedom of association of their workers and their rights to organise and bargain collectively, also supporting, where appropriate, representative employers’ organisations.

The structure of the ILO’s Tripartite Declaration is provided in Table 6.

3.7 Global Reporting Initiative (GRI)

Global Reporting Initiative (GRI) is an independent international organisation whose main objective is issuing standards leading to a more sustainable economy and world. The GRI Sustainability Reporting Standards (GRI Standards) are a set of 36 interrelated reporting standards intended for use by organisations to report on their impacts on the economy, the environment, and society (GRI, 2016). The set includes 3 universal standards that can be applied to all organisations and 33 topic-specific standards divided in three main areas: economic (GRI 200), environmental (GRI 300), and social (GRI 400). In using GRI Standards to prepare a sustainability report, organisations can use two different approaches: they can use all the standards

together as a set, or they can select some standards to be used individually to provide only specific information. Each standard includes three different sections: requirements, which are mandatory instructions presented in bold font; recommendations, which are cases where a particular case of action is encouraged but not required; and guidance, which is a section containing explanations and examples (GRI, 2016).

The first three standards (GRI 101, 102, and 103) are universal standards, useful as a guide for organisations preparing sustainability reports.

GRI 101 is composed of three sections. In the first one, Reporting Principles are presented, helping an organisation decide what information to include in a sustainability report; in the second section, containing also information about material topics, the basic process for using GRI Standards is explained; in the last section, the ways that GRI Standards can be used are provided.

GRI 102 reports contextual information about an organisation like its size, geographic location, strategy, ethics and integrity, governance, stakeholder engagement practices, and reporting process. All this information will be investigated more in details in next standards.

GRI 103 contains reporting requirements about the management approach an organisation uses to manage the economic, environmental, and social impacts related to material topics.

The 200 series of the GRI Standards contain specific standards related to the material economic impact of an organisation. The information reported in these standards is related to economic performance, market presence, indirect economic impacts, procurement practices, anti-corruption, and anti-competitive behaviour.

The 300 series of the GRI Standards contain specific standards related to the material environmental impact of an organisation. The information reported in these standards is related to materials, energy, water and effluents, biodiversity, emissions, effluents and waste, environmental compliance, and supplier environmental assessment.

The 400 series of the GRI Standards contain specific standards related to the material social impact of an organisation. The information reported in these standards is related to employment, labour/management relations, occupation health and safety, training and education, diversity and equal opportunity, non-discrimination, freedom of association and collective bargaining, child labour, forced and compulsory labour, security practices, rights of indigenous people, human rights assessment, local communities, supplier social assessment, public policy, customer health and safety, marketing and labelling, customer privacy, and socioeconomic compliance.

The structure of the GRI Standards is provided in Table 7.

Table 7 The GRI Standards

The GRI Standards		
GRI 101: Foundation 2016 (containing Standard Interpretation 1)		
GRI 102: General Disclosures 2016		
GRI 103: Management Approach 2016		
Economic	Environmental	Social
GRI 201: Economic Performance	GRI 301: Materials	GRI 401: Employment
GRI 202: Market Presence	GRI 302: Energy	GRI 402: Labour/Management Relations
GRI 203: Indirect Economic Impacts	GRI 303: Water and Effluents	GRI 403: Occupational Health and Safety
GRI 204: Procurement Practices	GRI 304: Biodiversity	GRI 404: Training and Education
GRI 205: Anti-corruption	GRI 305: Emissions	GRI 405: Diversity and Equal Opportunity
GRI 206: Anti-competitive Behaviour	GRI 306: Effluents and Waste	GRI 406: Non-discrimination
GRI 207: Tax	GRI 307: Environmental Compliance	GRI 407: Freedom of Association and Collective Bargaining
	GRI 308: Supplier Environmental Assessment	GRI 408: Child Labour
		GRI 409: Forced or Compulsory Labour
		GRI 410: Security Practices
		GRI 411: Rights of Indigenous Peoples
		GRI 412: Human Rights Assessment
		GRI 413: Local Communities
		GRI 414: Supplier Social Assessment
		GRI 415: Public Policy
		GRI 416: Customer Health and Safety
		GRI 417: Marketing and Labelling
		GRI 418: Customer Privacy
		GRI 419: Socioeconomic Compliance

Authors' elaboration

4 A Comparative Analysis of NFR Frameworks and Guidelines and NFRD Requirements

The purpose of the NFRD is to harmonise the law of European Member States by establishing some minimum requirements for the NFI disclosure of larger companies and public-interest entities (EU, 2014). It is worth underlining that the EU's choice to use the directive that is commonly used to achieve harmonisation, as an instrument to introduce new requirements to disclose NFI, highlights the political will to

pursue the harmonisation rather than the standardisation of NFR (Testarmata et al., 2020).

Compared to standardisation, harmonisation is a weaker international force for aligning national practices (La Torre et al., 2018). While standardisation involves imposing predefined rules that are adopted as a single supra-national model (i.e. the same accounting standards) in different countries, the main aim of harmonisation is to achieve a certain degree of comparability of accounting and reporting rules, minimising the variability of accounting and reporting choices for countries. Therefore, although some international institutions, such as CSR Europe and GRI, recognise that the NFRD is an important step towards the standardisation of NFR, it seems that the NFRD represents a harmonisation process that extends the past accounting harmonisation policies within the EU.

The NFRD is flexible in terms of how it can be transposed by Member States (EU, 2014). In addition, the NFRD does not define specific guidance regarding which frameworks and guidelines should be adopted for NFR. Thus, despite the NFRD promises to harmonise NFI in practice, companies can choose from a multitude of international and national frameworks to comply with the law, which is unlikely to improve the comparability of information (Testarmata et al., 2020).

A comparison of the seven frameworks and guidelines for NFR explicitly suggested by the NFRD, in terms of their compliance to the minimum content required by the NFRD, is offered in Table 8.

The upper part of the table contains a comparison among all the frameworks and guidelines suggested in the NFRD and the minimum content (divided in matters and tools) that should be disclosed by companies according to the same Directive, where “✓” means the topic of the NFRD is discussed in the related framework and “✗” means it is not. The lower part of the table contains evidence about additional information contained in the frameworks and guidelines.

From the comparison, several interesting evidences emerge. First, some frameworks and guidelines deal with only one matter. In particular, EMAS Regulation only focuses on environmental issues, and the UN Guiding Principle only focuses on human rights. These frameworks can be considered as specific topic-related standards, treating one single argument in depth and also providing some additional information able to help standard's users to deepen the topic. Second, there is one standard, the ILO's Tripartite Declaration, dealing with two matters: social rights and human rights. Also, this framework provides additional information regarding condition of life and industrial relations. The remaining four frameworks, in particular the UN Global Compact, OECD Guidelines, ISO 26000, and the GRI Standards, are all compliant with the NFRD in terms of matters. Nevertheless, only GRI Standards are compliant to the NFRD also in terms of tools. Furthermore, in 2017, GRI published a linkage document showing how the GRI Standards are compliant with all aspects of the NFRD (GRI, 2017). This document represents a useful guide because it provides a linkage table where each statement of the NFRD is connected to a specific GRI standard.

As a result, the comparative analysis highlights that there is one international framework, namely, the GRI Standards, that has full coverage of the minimum

Table 8 Comparison of NFR frameworks and guidelines and NFRD requirements

	NFR frameworks and guidelines					
	EMAS	UN Global Compact	UN Guiding Principle	OECD Guidelines	ISO 26000	ILO's Tripartite Declaration
<i>Matters</i>						
– Environmental	✓	✓	✗	✓	✓	✗
– Social and employees	✗	✓	✗	✓	✓	✓
– Human rights	✗	✓	✓	✓	✓	✓
– Anti-corruption and bribery	✗	✓	✗	✓	✓	✗
<i>Tools</i>						
– Business model	✗	✗	✗	✗	✗	✗
– Policies and due diligence	✗	✗	✓	✓	✓	✓
– Outcomes	✓	✗	✓	✓	✓	✗
– Risks	✓	✗	✓	✓	✓	✓
– KPI	✓	✗	✓	✓	✓	✓
Additional information contained in the framework	Environmental review		Access to remedy	Consumer interests	Organisational governance	Conditions of life
	Environmental management system			Science and technology	Fair operating practices	Industrial relations
	Environmental statement			Competition	Consumer issues	
Authors' elaboration				Taxation		

content specified by the NFRD and that would be the most compliant and suitable with the NFRD requirements. However, two other international frameworks, the OECD Guidelines and ISO 26000, offer good coverage of the NFRD requirements.

Nevertheless, the differences across the international frameworks and guidelines raise the questions about the NFRD's aim of harmonising NFI in practice (La Torre et al., 2018). Existing NFR frameworks target various stakeholder groups and focus on different aspects and concepts (FEE, 2016). Although companies are required to disclose the framework(s) used and the reasons for using it, it seems to be difficult to adopt competing frameworks in a coherent manner across Member States, and comparability is far from a realistic achievement in such a competitive institutional environment. In addition, as noted by Brown et al. (2009), in practice, NFR frameworks and guidelines have contributed more to a common language than to comparable information; thus, it seems the expectation that these frameworks help companies in providing comparable non-financial reports fails, and the NFRD falls well short of achieving comparable information in NFI reporting across the EU.

The standardisation of NFR requires coercive adoption of the same accounting and reporting standards (La Torre et al., 2018). Therefore, regulation is required to take a step forward to achieve comparable NFI accounting and reporting in the EU as well as globally. This consideration is confirmed by the recent proposal—adopted by the European Commission on April 21, 2021—for a Corporate Sustainability Reporting Directive (CSRD), which would amend the existing reporting requirements of the NFRD (EC, 2021) and the proposal for a roadmap for the development of a comprehensive set of EU sustainability reporting standards (EFRAG, 2021).

Finally, it is worth underlining that the international debate on the standardisation of NFR is still open. The ability of GRI Standards to become a generally accepted standard for NFR is well recognised by the international community (e.g. Adams & Cho, 2020) as well as in practice (KPMG, 2020). However, recently, the dominance of GRI has been challenged by the IFRS Foundation (2020) initiative to provide a new set of global sustainability standards to improve the consistency and comparability in sustainability reporting and, more recently, by the proposal of the European Commission for the development of an EU sustainability reporting standard setter (EFRAG, 2021).

5 Conclusion

NFR is continuing to increase in importance and relevance for its stakeholders, such as regulators, central banks, investors, wider society, market regulators, and the corporate sector. All these stakeholders call for greater consistency and comparability in NFI accounting and reporting, especially for climate-related disclosures, which will speed up the transformation to a low-carbon worldwide economy. Since there are not yet universally accepted and adopted standards for companies to report their NFI, there is an urgent need to improve the consistency and comparability in sustainability reporting (Barker & Eccles, 2018; La Torre et al., 2018).

Although the NFRD has the purpose of enhancing the consistency and comparability of NFI released by companies belonging to the EU (2014), the high flexibility of action granted to companies in providing NFI seems to go against the main aim of comparability because companies can rely on a range of different reporting frameworks and guidelines to comply with the NFRD requirements. Therefore, this study frames and analyses the compliance of voluntary reporting frameworks and guidelines with the NFRD, through a comparative analysis, for providing insights into the relation between the voluntary and mandatory disclosure of NFI.

As a result, this study enriches the emerging debate on the Directive 2014/95, sheds light on the harmonisation and standardisation challenges posed by the NFRD regarding NFR frameworks, and highlights the most suitable frameworks with the NFRD. Specifically, this research investigates what and how NFI is reported and identifies, among the range of different frameworks and guidelines, the GRI Standards as the most compliant framework with the NFRD requirements.

However, because of the interpretative nature of this study, other researchers may not draw the same conclusions from the evidence provided. The analysis leaves some open questions for a wide research agenda about standardisation of NFI accounting and reporting. In addition, this study limits the analysis to the seven frameworks explicitly suggested by the NFRD. Further research can extend the range of the study, adding to the analysis other frameworks, such as Integrated Reporting, Sustainability Accounting Standard Board (SASB) standards, and Account Ability standards, acknowledged as appropriate for complying with the NFRD (FEE, 2016).

The research has also practical implications. Focusing on the frameworks and guidelines that comply with the NFRD, the research results of this study can be used to improve future policies and practices on the implementation of the NFRD, specifically with regard to the adoption of NFR frameworks.

In the end, this study deals with the role of NFRD in enhancing the consistency and comparability of NFI accounting and reporting and supports what the NFRD seeks to achieve; however, it highlights that there are substantial issues in the implementation of the NFRD, at least, as it relates to NFR standardisation.

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Evolutionary Trends of Intangibles Disclosure Within Non-financial Reporting



Francesco Badia, Grazia Dicuonzo, Graziana Galeone,
and Vittorio Dell'Atti

1 Introduction

The constant evolution of socioeconomic scenarios, global competition, and internationalization processes has led business scholars to recognize the importance of intangible resources. Knowledge, innovation capacity, intellectual property, human resources, and organizational competencies represent intangible value drivers that bring about future benefits (Abeysekera, 2006). These are essential resources to compete in the market, and their effective management is a prerequisite for companies to obtain or preserve their long-term competitive edge. In fact, a successful business strategy is increasingly dependent upon the management's ability to focus on new factors, such as relationships with customers/users, staff, and partners, and the ability to learn and innovate. These variables can be traced back to the concept of intellectual capital (IC), which "is the sum of everything everybody in a company knows that gives it a competitive edge" (Stewart, 1997, p. IX). The resource-based view (RBV) theory considers the company's "intangible" resources a fundamental distinctive feature and the basis for creating a competitive advantage (Hamel & Prahalad, 1990). Thus, the terms IC, intangibles, and intangible resources are often used interchangeably in business and management literature (Petty & Guthrie, 2000).

IC is knowledge-based capital that supports a company's knowledge-based activities and, therefore, cannot be reported by traditional financial accounts. The inadequacy of traditional reporting systems in identifying the elements that explain a company's overall performance has motivated academic studies on the possibility of

F. Badia (✉) · G. Dicuonzo · G. Galeone · V. Dell'Atti
Department of Economics, Management and Business Law, University of Bari Aldo Moro,
Bari, Italy
e-mail: francesco.badia@uniba.it; grazia.dicuonzo@uniba.it; graziana.galeone@uniba.it;
vittorio.dellatti@uniba.it

identifying, representing, and measuring the IC dimension by using specific reports (Mouritsen, 1998; Edvinsson et al., 2000). These assets contribute to the success of firms through value-creation processes that improve corporate routines and practices (Stivers et al., 1997). In this context, IC theory stands alongside value-creation theories in considering intangibles key tools in the value-creation process (Rappaort, 1986).

Edvinsson and Malone (1997) proposed a scheme to identify the single component of a firm's market value, focusing on the concept of IC in its main declinations of human capital and structural capital. These considerations show the importance of intellectual capital disclosure (ICD) to provide accounting information regarding companies' value-creation processes realized by intangible assets (Petty & Guthrie, 2000). Increasing attention has been paid to improving the methods and instruments used to represent a company's intangible assets, both in the context of mandatory and voluntary disclosure. Reporting models have been proposed whereby, through physical-technical indicators and economic-financial indicators, it is possible to offer investors and lenders a complete view of the company's knowledge, capabilities, and relationships to reduce the existing information asymmetry.

Initially, numerous scholars and analysts promoted an "Intellectual Capital Model." A Swedish financial services company, Skandia AFS, developed the first such model (Edvinsson, 1997). Many scholars have subsequently proposed several tools to facilitate the measuring of each category of intangibles (human, customer, and structural/organizational capitals; Abhayawansa, 2014; Choong, 2008; Mouritsen et al., 2001). To date, the most well-known methods are probably the Intangible Assets Monitor (Sveiby, 1997), the Balanced Scorecard (Kaplan & Norton, 1992), the Value Chain Scoreboard (Lev, 2001), the Strategic Resources and Consequences Report (Lev & Gu, 2016), and the Value-Added Intellectual Capital Coefficient (Pulic, 2000). Despite the numerous proposals for the management and visualization of IC, some of these methods have met with considerable popularity, yet no successful experiences have emerged in the field of disclosure; on the contrary, the proposals for IC reporting that have developed in the literature and in practice have been progressively abandoned (Dumay, 2016).

The emerging trend in recent years has been to evaluate the most appropriate ways to incorporate non-financial information within the annual report, through forms of sustainability reporting (as proposed by the Global Reporting Initiative [GRI]) or integrated reporting (as issued by the International Integrated Reporting Council [IIRC]). The topic of IC disclosure, in particular, has also returned to the agenda because the IIRC has included the concept of "intellectual capital" in its framework, although with a different denomination than the traditional one.

This chapter intends to review the role of ICD in reducing information asymmetry, increasing the level of transparency and accountability toward stakeholders, and positively influencing corporate performance. Furthermore, this chapter provides an overview of how the IIRC and the GRI deal with the topic of intangibles disclosure within non-financial reporting. Therefore, the research method is based on a document analysis through reading, synthesizing, and interpreting data contained in the frameworks/standards (Bowen, 2009). This qualitative approach, combined with the

literature review, makes it possible to assess whether the disclosure of intangibles in the two frameworks/standards is treated uniformly or unevenly.

Despite the centrality of issues related to the development of intangible resources, the existing literature does not present specific studies that analyze from a critical perspective how the IIRC and the GRI deal with the growing and central role of intangible resources in the current business context. This work aims to fill this gap, producing new insights that could prove prolific in generating innovative research in the field of intangible asset management and reporting.

The chapter is structured as follows: Sect. 2 focuses on the debate in the literature concerning intangibles; Sect. 3 analyzes their role in the value-creation process according to the IIRC framework and the GRI standards. Finally, Sect. 4 contains the work's discussion and conclusions.

2 The Growing Relevance of Intangible Assets

Over the past decade, the constantly changing economic scenarios have shifted competition from businesses linked to traditional tangible assets (physical and financial resources) to those with intangible assets (knowledge, expertise, innovative capacity, and human capital) (Edvinsson & Malone, 1997; Wang et al., 2016). These are essential elements to develop and effectively implement a business strategy (Dumay, 2009; Chen et al., 2014) and to increase a firm's probability of achieving success (Wang et al., 2021). In this context, the ability to manage the flow of available knowledge has become a decisive element for differentiating companies and for achieving sustainable competitive advantages (Nonaka & Takeuchi, 1995; Bontis et al., 2018). This is also demonstrated by the considerable investments that many leading companies have made in developing and maintaining IC, showing particular attention to human resources (Olander et al., 2015).

The term "intellectual capital" (IC) has its origins in the 1990s and the seminal work of Thomas Stewart, who identified it as the "brainpower" of a company (Stewart, 1991). IC can be defined as the "sum of all the intangible and knowledge-related resources that an organization is able to use in its productive process in the attempt to create value" (Kianto et al., 2014, p. 364). IC is generally divided into three components: human capital, relational capital, and structural/organizational capital (Choong, 2008).

Human capital is defined as the "combined knowledge, skill, innovativeness, and ability of the company's individual employees to meet the task at hand. It also includes the company's values, culture, and philosophy" (Edvinsson & Malone, 1997). Human capital also covers knowledge, skills, experience, creativity, and problem-solving ability (Inkinen, 2015; Kianto et al., 2017). Structural/organizational capital is composed of the hardware, software, databases, organizational structure, information systems, processes, and routines that support employees' productivity (Inkinen, 2015; Khalique et al., 2018). Relational capital includes the

system of relationships established with the external stakeholders of the company, particularly the customers (Sánchez et al., 2000).

Regarding the development and proposal of models and tools related to intangibles, in recent decades, there have been different strands of research on IC in the management field. Sveiby (1997) made an early proposal for measuring intangible assets that later developed into the well-known model of the Intangible Asset Monitor. According to the Intangible Asset Monitor, people in organizations create external and internal structures to express themselves. Therefore, it is necessary to identify indicators that monitor external structure (customers and suppliers), internal structure (organization), and people's competencies (Sveiby, 1997).

The need for useful information regarding responsible management and enhancing the company's value-creation process has supported developing reports that are complementary to annual financial statements. Over time, IC measurement and reporting systems have become increasingly popular to better define communication with external stakeholders and to improve control and management systems with information that allows managers to focus their attention on intangible assets.

Skandia AFS, an insurance and financial services company in Sweden, published the first IC statement in 1995 (Edvinsson, 1997). This statement was developed through using another tool for managing and visualizing intangibles, the Skandia Navigator (SN). SN aims to enable a holistic understanding of how a company creates value. This model identifies and quantifies critical success factors in five key business dimensions: financial, customer, process, turnaround, and development and human capital. This new classification tries to identify the roots of a company's value by measuring the hidden dynamic factors that underlie the "visible company of buildings and products" (Edvinsson & Malone, 1997).

Since the late 1990s, a growing number of studies aimed at identifying and measuring intangible resources have emerged, including projects proposed by public and government bodies (Bañegil Palacios & Sanguino Galván, 2007). Fundamentally, these guidelines emphasize the importance of understanding how IC contributes to the creation of value in a business. However, these initiatives were a complete failure in their concrete application, considering firms' limited implementation of ICD-specific reports (Dumay, 2016).

One of the most interesting aspects that emerges from this evolution is the essential link between IC and a firm's value. In this context, IC theories stand alongside value-creation theories (Rappaport, 1986), proposing intangibles as key tools related to the process of acquiring and maintaining a long-lasting competitive advantage (Youndt et al., 2004).

At the same time, intangibles are viewed as an important resource to be developed to effectively implement corporate strategy (Marr & Chatzkel, 2004), improve corporate performance (Kim, 2012), and enhance financial returns (Chu et al., 2006).

The need to increase the level of transparency and accountability toward stakeholders has prompted a process of non-financial disclosure in which the role assumed by intangible resources represents a relevant issue for the academic community. Therefore, it is necessary to determine what information the main frameworks and standards recommend concerning intangible assets to appreciate the

relative relevance of these resources. In line with these considerations, we intend to answer the following research question:

RQ *How do the main international frameworks/standards on non-financial reporting, specifically the IIRC and the GRI, deal with intangible assets as a central factor for the success of an organization?*

3 Guidelines for External Reporting of Intangible Resources

The disclosure of intangible assets has introduced several accounting changes to promote greater disclosure of corporate IC in mandatory and voluntary statements, making information more accessible to external stakeholders, primarily investors (Kaufmann & Schneider, 2004; Marr & Chatzkel, 2004). Since 2001, in Europe and elsewhere in the world, many researchers have been interested in understanding “how” IC works within organizations (Chiucchi et al., 2017) rather than conducting research that is useful in applying IC as “a pre-established idea” (Mouritsen, 2006). This necessity influences the managerial and organizational approach to sustainability, which is supported in several cases by specific sustainability standards (SASB; GRI), stand-alone reporting and assurance (Michelon et al., 2015; GRI, 2019), or the choice to adopt IR (Eccles & Krzus, 2010).

3.1 *Intangible Resources and IIRC*

In August 2010, the International Integrated Reporting Council (IIRC) was established to integrate financial reporting with non-financial information to communicate to providers of financial capital the determinants of the value-creation process over the short, medium, and long terms (Abeysekera, 2006; Atkins & Maroun, 2015). IIRC has promoted the idea that integrated reporting can provide an alternative to traditional financial reporting and represent the various capitals that an organization uses to influence its business model and value creation over time. According to the international framework on IR published by the IIRC (2013), the purpose of IR is to illustrate, in a concise form and primarily to funders, how an organization creates value over time.

In January 2021, the IIRC published revisions to the International IR Framework to enable more quality and integrity of decision-useful reporting and to help businesses deliver more robust and balanced reporting. IR is based on recognizing six capitals—financial, manufactured, intellectual, human, social and relationship, and natural—defined as the “stocks of value on which all organizations depend for their success as inputs to their business model, and which are increased, decreased or transformed through the organization’s business activities and outputs” (IIRC, 2021,

p. 53). Thus, the success of a business depends not only on the “3 Ps” (i.e., people [human capital], planet [natural capital], and profit [financial capital]) but also on other non-financial value factors, such as brand; reputation and know-how (intellectual capital); property, plants, equipment, and infrastructure (manufactured capital); and relationships, such as relationships with suppliers and customers (social and relationship capital), to manage and report multiple dimensions of value. The need to identify the six capitals, as defined by the IIRC framework, is an element that favors the awareness of IC’s centrality in the value-creation process (Badia et al., 2019).

The three “intangible” capitals seem to align with the three historical constituents of IC in the literature: structural/organizational, human, and relational (Abhayawansa, 2014; Dumay, 2016; Ferenhof et al., 2015). In particular, these analogies are emerging: human capital with human capital, social and relational capital with relational capital, and intellectual capital with structural/organizational capital (Dumay, 2016). However, the different use of the term “intellectual capital” in the two contexts (the IIRC framework and the traditional literature about intangibles) appears quite confusing. In the IIRC framework, intellectual capital is defined as “organizational, knowledge-based intangibles, including: i) Intellectual property, such as patents, copyrights, software, rights and licenses; ii) Organizational capital such as tacit knowledge, systems, procedures and protocols” (IIRC, 2021). Thus, there is a clear relationship with the concept of structural/organizational capital in the IC literature, and there are no references to the wider concept of IC, which tends to comprise all the intangible resources that can influence business success.

Despite this different configuration, the IIRC framework seems to be able to adapt to ICD studies, and the trend of current studies seems to be consistent with the following remark: “Thus, in the era of IR, IC accounting is being reborn” (Abhayawansa et al., 2019b).

More specifically, there is some evidence (Dumay et al., 2019) that the six-capital model can adapt well to the principles of EU Directive 2014/95, which has introduced a compulsory form of non-financial reporting for some types of companies—in principle, the largest ones—in the European Union in response to the growing demand for transparency from civil society on issues that are not strictly economic-financial. In fact, EU Directive 2014/95, also called the non-financial reporting directive (NFRD), introduced new mandatory disclosure practices for non-financial and diversity information by large companies.

In the IR context, intangible resources have an important value-creating role in the future of an organization (de Villiers & Sharma, 2020). In this regard, the IIRC framework also suggests using specific performance indicators (KPIs) to achieve an accountable and transparent representation of their contribution to value creation (IIRC, 2021).

The IIRC framework provides discretion and flexibility on the disclosure of IC concepts, classifications, and values. In particular, some scholars have highlighted the opportunities of a reporting system referring simultaneously to intangible resources, value creation, and the business model (Beattie & Smith, 2013), thus favoring ICD (Abhayawansa et al., 2019b). Some scholars are unsure about the true ability of IR to operate as an effective ICD tool, in light of previous negative

experiences related to ICD (Roslender & Nielsen, 2017); however, current studies seem to support the importance of IC disclosure (Abhayawansa et al., 2019a).

3.2 Intangible Resources and GRI

The GRI, founded in 1997, is an independent, international organization that promotes sustainability reporting as a tool to mobilize more responsible behavior by companies. The aim of the GRI is to offer guidelines for the disclosure of how organizations impact natural and social environments. The guidelines organize specific standard of disclosure into three categories: economic, environmental, and social. The social category is further split into four subcategories, which are labor practices and decent work, human rights, society, and product responsibility.

The GRI has introduced guidelines that organizations can use voluntarily to provide a balanced and reasonable representation of the company's sustainability performance and communicate their impact on critical sustainability issues, such as climate change, human rights, governance, and social well-being (Abeydeera et al., 2016). Thus, non-financial information on intangibles associated with the company's internal processes and social, environmental, and human resources seems to be suitable for promoting key objectives, such as ethical corporate social responsibility (CSR) strategies and improving a firm's image (Leung & Gray, 2016).

The GRI guidelines identify several qualitative and quantitative indicators that provide an overview of corporate responsibility issues. The indicators most frequently utilized are allocated to five items of corporate responsibility (employment, labor management relations, health and safety, training and education, and diversity and opportunity) that compose the section entitled "Labor practices and decent work" in the GRI guidelines. This demonstrates the different kinds of attention paid to issues relating to human capital (Pedrini, 2007), as well as the other elements (structural capital and relational capital) of IC reporting (de Villiers & Sharma, 2020).

GRI guidelines improve companies' effective communication of social information because they not only cover social information but also give such information a competitive meaning within the chain of corporate value creation (Castilla Polo & Gallardo Vázquez, 2008). In particular, social indicators related to the composition and status of the workforce may be used to highlight opportunities for expanding the firm's IC (GRI, 2002).

Despite the GRI guidelines' numerous references to aspects that can be referred to as the central elements of IC, particularly human capital, a holistic and unitary approach to the concepts underlying the definition of IC seems to be absent. Therefore, an overall view of the role of intangible assets in companies that use this standard for non-financial reporting is also missing.

4 Discussion and Conclusion

This chapter aims to analyze the role of intangible resource disclosure in non-financial reporting, combining a literature review with an overview of how the IIRC and the GRI address this issue. Two main aspects emerged from the literature analysis:

- Managing the available “knowledge” flow has become a decisive element for differentiating companies, achieving sustainable competitive advantages, and representing an important resource that needs to be developed to effectively implement corporate strategy;
- The growing interest in intangible assets is influencing managerial and organizational approaches, favoring greater integration between financial and non-financial information.

With reference to the first point, since the 1990s, the success of companies is no longer attributable solely to access to material resources but rather to intangible assets (Hamel & Prahalad, 1990; Bontis et al., 2018). Information on structural/organizational, human, and relational capital allows companies to ensure greater transparency to their stakeholders. Stakeholders, however, benefit from a greater quantity and quality of information that allows a better understanding of the real value of companies from a medium-long term growth perspective. Companies’ motivation to disclose non-financial information confirms the role that IC disclosure has in improving business performance. In addition, the disclosure of intangible assets is fundamental to appreciating the value created by companies (Abhayawansa & Guthrie, 2012).

Regarding the second point, the growing demand for non-financial information implicates companies’ increased awareness of the link between intangibles and the value-creation process (Badia et al., 2019). The increasing emphasis on IC has highlighted the limitations of traditional financial reporting systems that are unable to represent the value of all intangible assets. To overcome this limit, different international organizations, such as the IIRC and the GRI, have proposed specific guidelines to disclose information about IC.

IR is a relatively new form of reporting compared to the GRI’s sustainability guidelines, and it is mainly addressed to providers of financial capital and incorporates the elements of sustainability that are aligned with the core principles of capitalism (Thomson, 2015). The GRI helps companies communicate their impacts on sustainability issues. Both these forms of reporting disclose intangible resources, even if the IIRC places more emphasis on these aspects than the GRI.

Some critical aspects have emerged from the analysis of how the IIRC and the GRI approach the issue of disclosing intangible assets.

The IIRC framework has decided to adopt a denomination of the six capitals that is inconsistent with that which has already been widespread for many years in managerial literature and is widely known by business professionals. Once it has been clarified that the “intellectual capital” IC in the IIRC framework is the same as

the structural/organizational capital in managerial literature, there should be no further problems; however, the fact remains that this different denomination may still create some misalignment in the use of the terms for at least a few years.

The GRI standards, while considering almost all the aspects involved in recognizing intangible assets as the driving force for growing companies' value, do not provide a holistic approach to the issue and fail to support a unitary vision of this phenomenon.

However, what truly matters is how the companies that adopt guidelines for non-financial reporting are able to provide transparent—and at the same time effective—disclosure, both with a view to informing outside the company and to guiding management toward value-creation paths.

In this scenario, the necessity to increase and improve the quantity and quality of non-financial disclosure (Unerman & Chapman, 2014) is influencing the managerial and organizational approach to sustainability (Comyns et al., 2013), which standard-setting organizations have supported in several cases. Recently, the IIRC, together with other leading global ESG reporting organizations, namely, the GRI, the Sustainability Accounting Standards Board (SASB), the Climate Disclosure Standards Board (CDSB), and the Climate Disclosure Project (CDP), has addressed an open letter to the IOSCO, inviting it to promote accelerated change in the reporting system with regard to sustainability aspects, reaffirming their vision of comprehensive corporate reporting and a progressive approach (“building blocks”) for its implementation. This intention had already been expressed in the “Statement of Intent to Work Together Towards Comprehensive Corporate Reporting” issued by the same organizations in September 2020. Furthermore, the IIRC and the SASB expressed the intention to merge into a unified organization (“The Value Reporting Foundation”), whereas the GRI and the SASB drafted a collaborative work plan between them.

Future research in this field could investigate the evolution of the frameworks and standards on non-financial reporting, analyzing their profiles related to intangible assets; however, future research could involve those who are engaged, as preparers, with non-financial reporting statements to determine their points of view on the centrality and essentiality of the information concerning intangibles and to identify which reporting standards are best suited to grasp and disclose their potential.

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Limited or Reasonable Assurance for NFI?: Effectiveness and Criticalities



Patrizia Riva and Francesco Bavagnoli

1 An Overview of How Member States Have Implemented the EU Directive on Non-financial Information Regarding the Auditor's Involvement

The Directive 2014/95/EU (NFRD) represents a milestone in the process of promoting firms' reporting of NFI, which is increasingly observed by investors and governments to allocate capital and grant legitimacy and licence to operate to businesses.

As far as assurance is concerned, the Directive has just obliged Member States to ensure that the statutory auditor or audit firm check whether the NFI has been provided by the entity and left to Member States to decide whether NFI should be verified by an independent assurance services provider (art. 19a, par. 5–6, of the Directive 2013/34/EU as amended by Directive 2014/95/EU).

As shown in Table 1, the large majority of countries which transposed the NFRD into their legal system (19 out of 30) have exactly replicated the requirements of the NFRD providing for the simple check by the auditors of the presence of the NFI statement in the reporting package.

Zooming in on some of the most relevant economies of the Union, it is possible to appreciate more in detail how the auditor's activity has been regulated where the independent verification of NFI has been made mandatory (Table 2).

P. Riva (✉) · F. Bavagnoli

Department of Economics and Business Studies, Università del Piemonte Orientale, Novara, Italy

e-mail: patrizia.riva@uniupo.it; francesco.bavagnoli@uniupo.it

Table 1 Auditor's involvement in countries that adopted the NFRD

Country	Comparison vs NFRD	Object of auditor's verification
Austria	=	
Belgium	O	Presence of statement and consistency check of disclosures as part of the review of the management report
Bulgaria	O	Presence of statement and consistency check of disclosures as part of the review of the management report
Croatia	=	
Cyprus	=	
Czech Republic	=	
Denmark	O	Presence of statement and consistency check of disclosures as part of the review of the management report
Estonia	=	
Finland	=	
France	O	Presence of statement and content is required if company has 500+ employees and has a turnover over EUR 100 million or balance sheet over EUR 100 million
Germany	=	
Greece	=	
Hungary	=	
Iceland	O	Presence of statement and consistency check of disclosures as part of the review of the management report
Ireland	=	
Italy	O	Presence and content of statement
Latvia	O	Presence of statement and consistency check of disclosures as part of the review of the management report
Lithuania	=	
Luxembourg	=	
Malta	=	
The Netherlands	O	Presence of statement and consistency check of disclosures and identification of material misstatements are part of the review of the management report
Norway	=	
Poland	=	
Portugal	=	
Romania	O	Presence of statement and consistency check of disclosures as part of the review of the management report
Slovakia	=	
Slovenia	=	
Spain	O	Presence and content of statement
Sweden	=	
United Kingdom	O	Presence of statement and consistency check of disclosures as part of the review of the management report

= Requirements are the same as in the Directive

X Requirements have been omitted

O Requirements have been adapted

Source: Adapted from CSR Europe and GRI (2017)

Table 2 Verification of NFI in France, Italy, Spain and the United Kingdom

France	Information must be verified for those companies with 500 employees or more and a turnover of 100 million Euros or more. The audit must confirm that the non-financial information statement complies with the requirements of the legislation and must state what due diligence was carried out as part of its audit. The report must be circulated to shareholders.
Italy	Must be audited for compliance with the relevant requirements, and the report must be attached to the non-financial information statement and jointly published with it. An internal audit of the non-financial information statement must also be carried out and must be reported on to the general shareholders' meeting and in the company's annual report.
Spain	The NFI must be verified by an independent provider of assurance services.
United Kingdom	Must be audited for compliance with legal requirements and any material misstatements.

2 Limited or Reasonable Assurance

Even if there is not yet an officially recognised standard covering the verification of NFI, the IAASB's ISAE 3000 (revised 2013), Assurance Engagements Other than Audits or Reviews of Historical Financial Information, is the principle most widely used by professionals engaged to audit NFI. ISAE 3400 sets out two different levels of assurance: reasonable and limited. The two types of assurance share some key elements: in both cases, the assurance providers must clearly define the criteria against which the subject matter will be evaluated, including levels of materiality to use in assessing the outcome of tests; they will adopt the same risk basis for planning their work and deliver a written opinion (Riva and Dallai 2020). However, there are some significant differences as illustrated in Table 3.

It is widely recognized that the main purpose of assurance is to enhance the credibility of the NFI delivered to the stakeholders (Reimsbach et al., 2018) and that assurance of better quality, other things being equal, grants actual benefits to the entities under verification. For example, García-Sánchez et al. (2019) found evidence that the presence and the quality of external assurance of CSR disclosure (one proxy of better quality of assurance being the reasonable and not limited level of it) strengthen the positive relationship between CSR disclosure quality and access to finance.

Despite this background that presumably promotes a complete verification procedure (which is standard practice required by EU regulation for financial statements) for NFI, even in those countries where the assurance of NFI is mandatory, it takes typically the form of limited assurance. As documented by the European Commission in a survey conducted in 2020 to gather evidence to review the NFRD, a large proportion of respondents' non-financial reports that are assured undergo a limited assurance procedure (74%), compared to 14% reasonable assurance, and 11% a mix of limited and reasonable assurance procedures. Regarding the type of information that is verified, it is most common to assure the complete

Table 3 Main differences between reasonable assurance and limited assurance

	Reasonable assurance	Limited assurance
Type of assurance obtained	This type of assurance is achieved when the risk of a material misstatement of the subject matter has been reduced to a low level To achieve this, the assurance provider must conduct extensive procedures The assurance provider obtains sufficient evidence to confirm whether the subject conforms to the criteria This is essentially the same type of assurance as is required in an audit of financial statements where the auditor confirms if the financial statements are fairly presented	This type of assurance is achieved when the risk of a material misstatement of the subject matter has been reduced through the collection of evidence, but not to the low level required by reasonable assurance To achieve this, the assurance provider performs different or fewer tests than those required for reasonable assurance or uses smaller sample sizes for the tests performed. The assurance provider's conclusion provides comfort over whether the subject is plausible against the criteria. The opinion provided on a half-year review of financial statements is an example of a limited assurance conclusion albeit over financial information and under a specific assurance standard for reviews over financial information
Conclusion	Reasonable assurance conclusions are framed in a positive manner For example, 'based on the procedures performed, in our opinion, the management assertion on [subject matter] is properly prepared'	Limited assurance conclusions are framed in a negative manner For example, 'based on the testing performed, nothing has come to our attention to indicate that the management assertion on [subject matter] was not properly prepared' This form of reporting requires a double negative which is intended to alert the reader to the lower level of assurance being provided

Source: Adapted from WBCSD and ICAEW (2019)

non-financial reports (i.e. sustainability reports, non-financial information consolidated statement or disclosure, published non-financial information etc.) and some KPIs, especially around GHG emissions, energy and waste, employee matters and the materiality process.

The reasons why reasonable assurance is still seldom performed are the same that explain why it was not possible in the first place to make the assurance of NFI mandatory all over Europe.

First, there is not a common sustainability accounting standard. NFI preparers saw a proliferation of different sets of rules, 'a soup' of 360 standards (*The Economist*, 2020), even if there are some signs of consolidation, and the principles endorsed by the following institutions are gaining wider acceptance: the Global Reporting Initiative (GRI), which focuses on metrics that show the impact of firms on society and the planet; the Sustainability Accounting Standards Board (SASB), which includes only ESG factors that have a material effect on a firm's performance;

the International Integrated Reporting Council (IIRC), which promotes integrated communication about value creation covering economic, social and environmental aspects as the next step in the evolution of corporate reporting; the Task Force on Climate-Related Financial Disclosures (TCFD); and the Carbon Disclosure Project (CDP), which is chiefly concerned with climate change—specifically companies' exposure to its physical effects and to potential regulations to curb carbon emissions.

Second, undergoing a thorough verification of NFI costs more than a limited check. According to the responses to the public consultation of the EC (2020), the median cost for the respondents undergoing any kind of assurance (limited, reasonable or a mix) is of EUR 50.000. The median costs of reasonable assurance are of EUR 60.000, EUR 50.000 for limited assurance and EUR 40.000 for a mix of reasonable and limited assurance.

Third, the nature of NFI is complex, including among others forward-looking and narrative-qualitative information, physical measures and highly judgemental statements involving human rights. These pieces of information may be hard and costly to collect and elaborate for the firms (Riva et al., 2015) and in some cases not verifiable in the same sense that is understood for financial information.

3 A Possible Way Forward Through Mixed Assurance

The EC survey (2020) on the review of the NFRD gives interesting insights about the possible future trends in NFI assurance.

First, there is an increasing demand for assurance of NFI, and most respondents (56%) think that the differences between the assurance requirements for NFI and financial information are not at all justifiable or only to a small extent (Fig. 1).

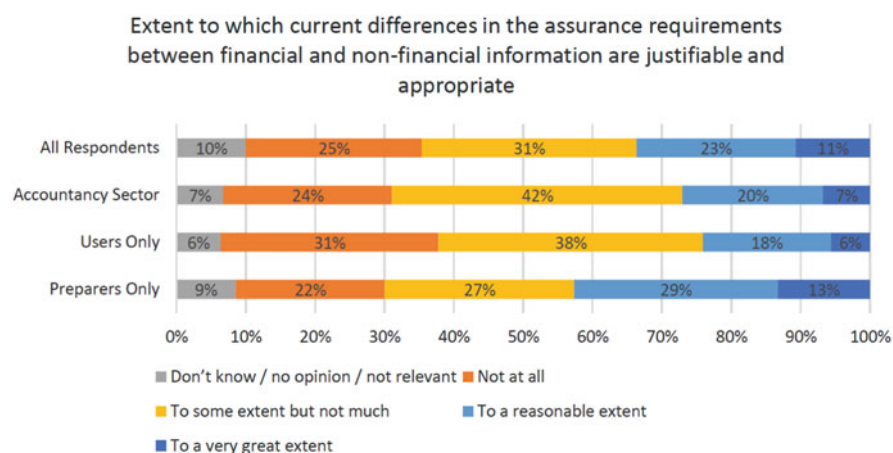


Fig. 1 Question from EC (2020) regarding different assurance requirements for NFI and financial information

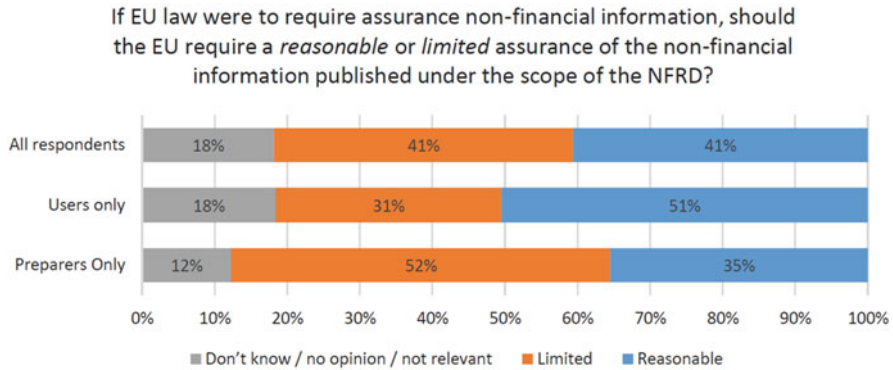


Fig. 2 Question from EC (2020) regarding different levels of assurance

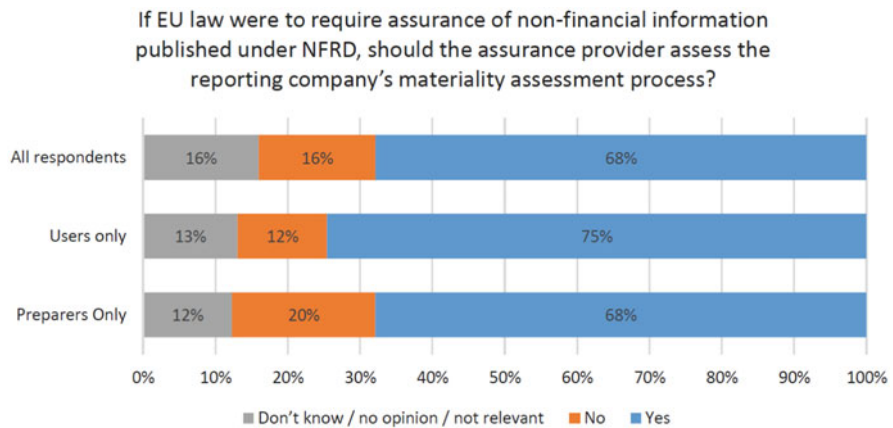


Fig. 3 Question from EC (2020) regarding the assurance of the materiality assessment process

Second, regarding the level of verification, the consultation asked whether it should require reasonable or limited assurance of NFI if EU law were to make it mandatory. Understandably, users who collect the benefits prefer reasonable (51% compared to 31% for limited), while preparers who bear the costs prefer limited (52% compared to 35% for reasonable) (Fig. 2).

Third, to a specific question concerning the assurance of the materiality process of NFI (Gelmini et al., 2015), 68% of respondents agree that it should be included as part of the auditors' verification (Fig. 3).

In the comments of the respondents, we find some interesting remarks: first, a widespread perception that it may be too early or not feasible to impose a mandatory reasonable assurance on NFI; second, a common understanding that in the medium term the differences between the assurance requirements on financial and

non-financial information will probably vanish; third, a shared expectation that in the coming years the transition will take place with firms submitting to a full review the most sensitive—especially environmental and climate change related—KPIs to enhance their legitimacy, credibility and trust granted by the public.

In the near future, while we wait for a common sustainability accounting and auditing standard, we may expect:

(i) On one hand, that the materiality process will maintain its relevance, with the additional double—financial and environmental and social—materiality concept gaining momentum after the publication of the supplement guidelines of the EC on NFI (2019)

(ii) On the other hand, that the most conscious—and marketing oriented—companies will enlarge the scope of the reasonable assurance to sensible items, such as GHG emissions, energy and water consumption or the materiality process itself (here it could be interesting to perform as a substantive test independent interviews of the stakeholders by the auditors).

In other terms, expect in the coming years to see more mixed (than reasonable) assurance.

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Assurance of Nonfinancial Information: A Comprehensive Literature Review



Lara Tarquinio

1 Introduction

Recent years have shown a global increase in the demand for assurance services of nonfinancial information (NFI). Despite the current popularity of the terms “NFI” and “NFI reporting”, there is not a commonly accepted definition (Erkens et al., 2015; Haller et al., 2017; Tarquinio & Posadas, 2020). The EU Commission staff states that “NFI is generally seen as environmental, social and governance (ESG) information” (EU, 2013, p. 2), thus identifying some “‘ingredients’ that are generally combined to shape the meaning of NFI” (Tarquinio & Posadas, 2020, p. 728). Following this approach, in this chapter, we consider a wide range of variously denominated reports (e.g. corporate social responsibility reports, sustainability reports, carbon reports, integrated reports) aimed at disclosing the non-strictly financial dimensions of the company activities. The term “assurance” has been defined as “an engagement in which a practitioner aims to obtain sufficient appropriate evidence in order to express a conclusion designed to enhance the degree of confidence of the intended users other than the responsible party about the subject matter information” (IAASB, 2013, p. 7). At a narrower level, assurance engagement is related to services performed on subject matters other than financial audits.

The main objective of NFI assurance is to improve credibility, reducing the self-referentiality of NFI reports (NFIRs) (Adams & Evans, 2004; De Beelde & Tuybens, 2015). Moreover, assurance can support the identification and understanding of weaknesses and opportunities for the improvement of NFIRs, sustain internal decision-making, improve a company’s reputation by facilitating the possibility of obtaining financial resources, and reduce the cost of capital (O’Dwyer et al., 2011;

L. Tarquinio (✉)

Department of Economic Studies, “G. d’Annunzio” University of Chieti-Pescara, Pescara, Italy
e-mail: lara.tarquinio@unich.it

Gillet, 2012; Casey & Grenier, 2015; Birkey et al., 2016; Safari & Areeb, 2020). However, assurance of NFIRs is voluntary in most countries, and Directive 2014/95/EU does not stipulate that NFI should be audited. The only requirement of the directive is that member states of the European Union ensure that statutory auditors check for the presence of the required information, and their responsibilities depend on jurisdiction-specific rules.

A growing body of literature has analysed the assurance of NFI from different perspectives. However, developments in the corporate reporting sphere in the last three decades have significantly shaped corporate reporting boundaries. The integration of sustainability into mainstream financial reporting, the diffusion of integrated reports, the consideration of forward-looking information, the emerging principles of connectivity, and integrated thinking are likely to challenge the conventional approach to assurance. There is a need to redefine the boundaries and characteristics of the assurance concept and the assurance process.

The most recent review by Farooq and de Villiers (2017) provides a useful overview of the market for sustainability assurance services and sustainability assurance practices. Velte and Stawinoga (2017) document the current research on corporate social responsibility assurance at three levels: market, organizational, and individual/group decision-making. Both studies underline that the research landscape remains fragmented and that there is a need for more conceptual and empirical research on the topic. Therefore, the objective of this chapter is to review the more recent literature on assurance of nonfinancial information to understand the ground covered, identify gaps to be filled, and identify areas for future research. These research objectives are addressed through a systematic literature review of 72 academic journal articles identified using the Scopus database for the time frame between 2017 and 2021 (January).

This review makes at least two contributions. From a research perspective, it offers a comprehensive foundation for future empirical and conceptual research to assess how assurance can be performed. From a practical perspective, it provides a summary of issues and topics requiring particular consideration during an assurance process, in particular the assurance of an integrated report.

The remainder of the chapter is structured as follows. Section 2 focuses on the methodology used to conduct the literature review. In Sects. 3 and 4 are presented the results of the descriptive and thematic analysis, respectively. Section 5 identifies avenues for future research, and Sect. 6 closes the paper with discussion and conclusion.

2 Methodology

As stated above, we conducted a systematic literature review (SLR), which is a useful research approach for collecting, synthesizing, and appraising the findings of published research in a reproducible and verifiable way (Tranfield et al., 2003). We followed the nine phases of an SLR, organized into three stages (i.e. planning,

conducting, and reporting and disseminating the review), as proposed by Tranfield et al. (2003). In Stage I, we outlined the scope of the systematic review through a review protocol with “information on the specific questions addressed by the study” (Tranfield et al., 2003, p. 215) and developed the research questions as follows:

RQ1 What is the current state of the literature on assurance of nonfinancial information?

RQ2 How should the NFI assurance-related literature be developed in the future?

In conducting the review (Stage II), we identified the search keywords for the review. We searched for “assurance” and “nonfinancial information” or “corporate social responsibility report”, “sustainability report”, and “integrated report” in the article title, abstract, and keywords. For the inclusion criteria, we set academic journals as the source, “Business, management and accounting” as the subject area, English as the publication language, and 2017–2021 as the publication period. We selected this period to include research studies on assurance of NFIRs related to the adoption of Directive 95/2014 (which requests the inclusion of NFI statements in companies’ annual reports from 2018 onwards), considering that the last two relevant literature reviews on sustainability assurance were published in 2017.

We used the Scopus database to carry out this research, and through the initial search process, 81 articles were identified. We read all the abstracts and texts to exclude irrelevant articles that did not discuss both assurance and nonfinancial information. A total of 72 articles were considered for the literature review.

Each article was carefully read to identify the following information and include it in a chart: author, title, year of publication, journal, document type, research objectives, research method, theoretical framework, research context, and summary of the findings. In this way, we obtained a clear picture of the state of the literature on the investigated topic to address the research objectives.

According to Tranfield et al. (2003), in the final stage (Stage III), a “two-stage report might be produced” (p. 218). The first stage is a descriptive analysis, which allows classification of the papers to provide first insights into the topic. We identified four descriptive dimensions: the journals in which the contributions were published, the research context, the research methods applied, and the theoretical lens used to guide the analysis. The second stage is a thematic analysis, which aims to identify key emerging research areas in the NFI literature. At this stage, the contents of the articles were aggregated into common categories using both deductive and inductive approaches (Fereday & Muir-Cochrane, 2006). In the deductive content analysis, we adopted three analytical categories (the meaning and features of assurance; factors driving the demand for assurance; and the assurance process and content of assurance statements issued by different assurance providers) identified in former research (Tarquinio, 2018). In the inductive content analysis, the pre-selected main categories were enriched based on key emerging themes, and future avenues of research were identified. A summary of our systematic literature review procedure is shown in Fig. 1.

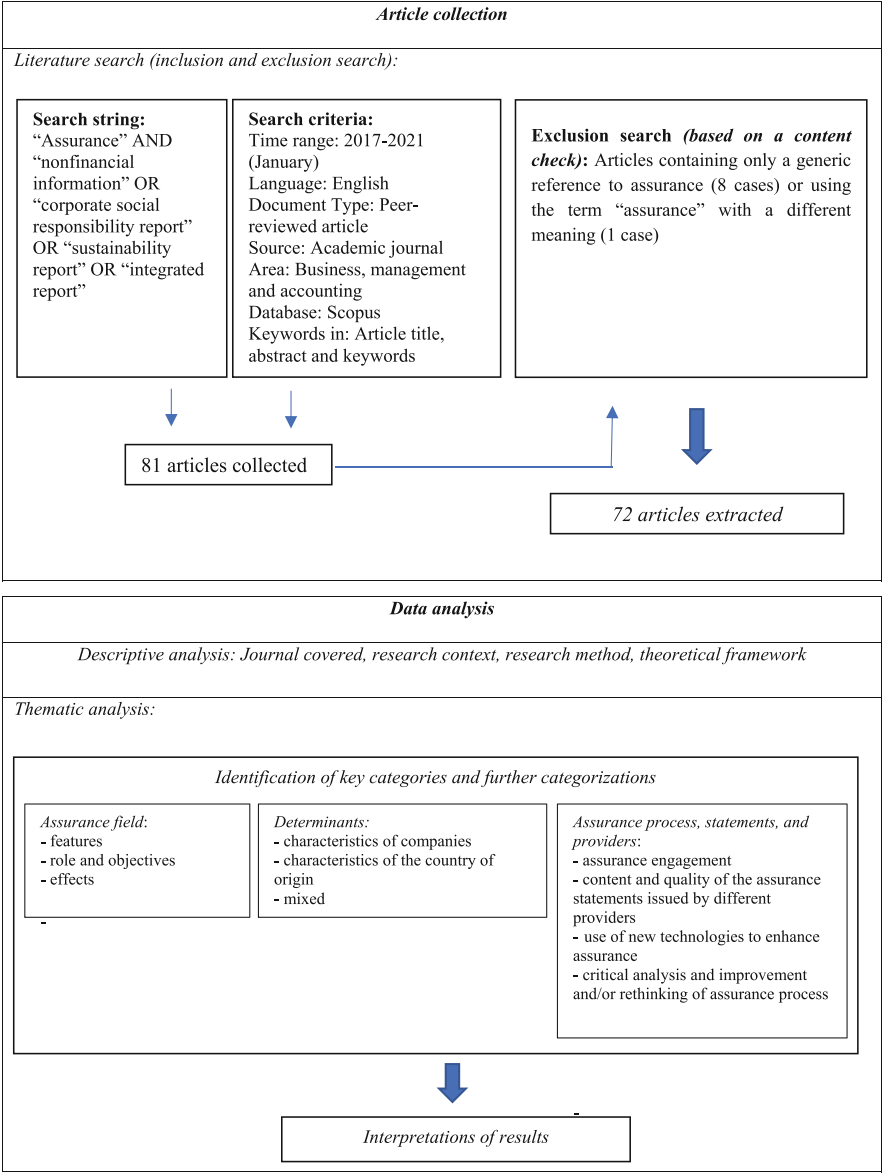


Fig. 1 Summary of the literature review process

3 Results of the Descriptive Analysis

For the descriptive analysis, we selected categories that described the papers in terms of journal coverage, research context, research method, and theoretical framework.

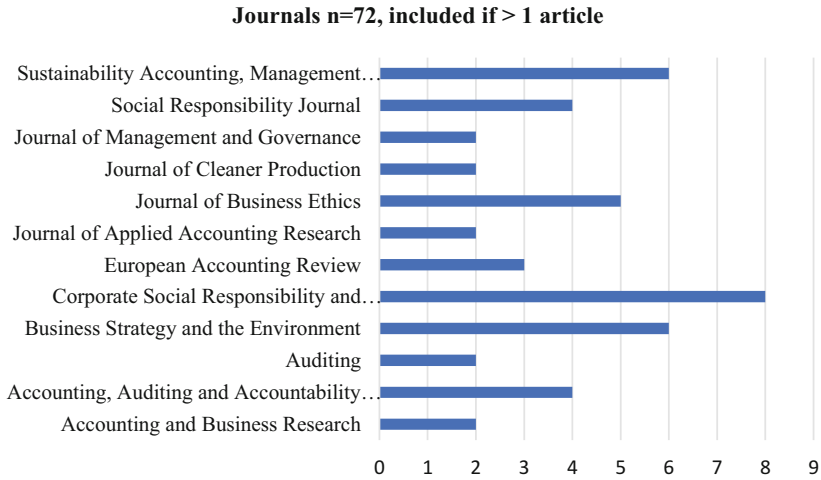


Fig. 2 Journals

The descriptive analysis results show that during the period 2017–2021, the *journal* in which the largest number of articles on assurance of nonfinancial information were published is one focusing on sustainability and environmental aspects (Fig. 2).

With reference to the *research context*, the studies focus on diverse countries, with 28 studies displaying a cross-country focus (of these, 3 studies refer to a comparison between two countries only; the others consider more than 2 countries). With respect to individual countries, South Africa, the UK, and Spain are the most frequently considered (Fig. 3). All the studies focused on South Africa refer to assurance of integrated reports; the others generally refer to sustainability reports and, to a lesser extent, to carbon reporting (three cases only).

The researchers usually employ qualitative and quantitative *research methods* to conduct the analysis and draw conclusions. In this chapter, we categorize a study as quantitative or qualitative based on whether the study uses quantitative research methods (i.e. numerical data analysed using statistical methods) or qualitative research methods (i.e. data collected through interviews, documentary evidence, or case studies, analysed using qualitative data analysis methods) (Corbetta, 2003a, 2003b). The most frequent research methods used in the analysed studies are quantitative, an approach used by 61% of the researchers. Qualitative approaches are used in 26% of the studies, and only 3% adopted a mixed approach.

Most of the studies on assurance of nonfinancial information apply a *theoretical framework* to direct their research questions or explain their findings. One or more theoretical lenses were identified in 44 articles, while in 23 articles, there is no reference to a theoretical framework. Studies on assurance of NFIRs adopt different theoretical perspectives: the use of institutional theory (i.e. Kılıç et al., 2019, 2021a; Ruiz-Barbadillo & Martínez-Ferrero, 2020; Fernandez-Feijoo et al., 2019; Martínez-Ferrero and García-Sánchez, 2017a), legitimacy theory (i.e. Oware and

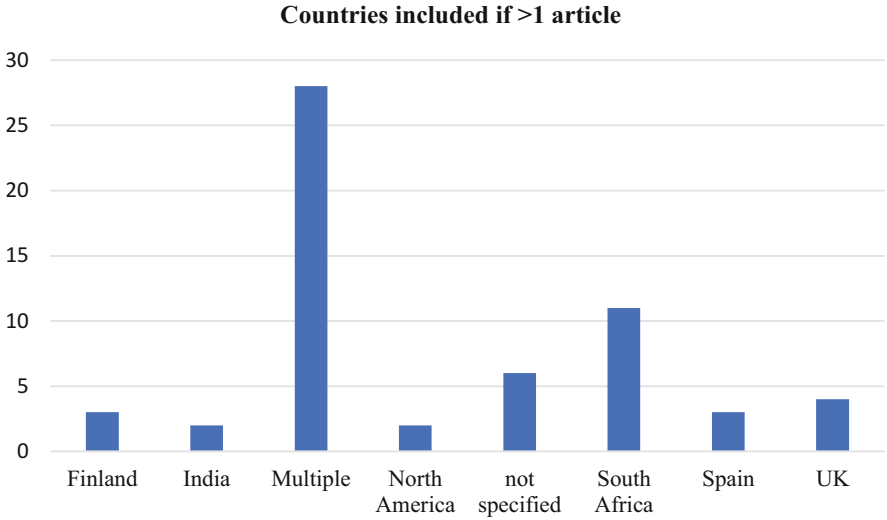


Fig. 3 Research contexts

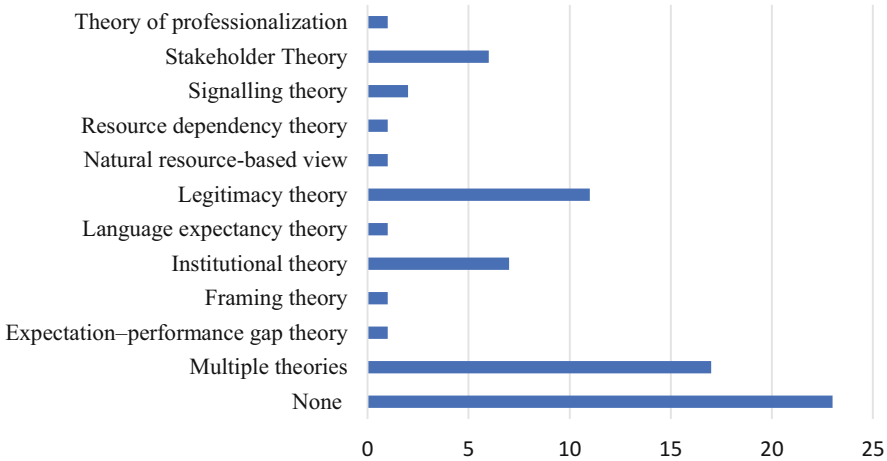


Fig. 4 Theoretical frameworks

Mallikarjunappa, 2021; Boiral et al., 2019a, 2019b; Rossi and Tarquinio, 2017), and traditional stakeholder theory (i.e. Córdova Román et al., 2021; Akisik and Gal, 2020; García-Sánchez et al., 2019b; Odriozola and Baraibar-Diez, 2017) is widespread, while other articles adopt multiple theories to inform their argument (e.g. agency and stakeholder theories; legitimacy and signalling theories; and legitimacy, neoinstitutional, and agency theories). Some theories are used in individual articles only (e.g. framing theory; theory of professionalization; resource dependency theory) (Fig. 4).

4 Results of the Thematic Analysis

The thematic analysis aims to categorize the contents of the 72 articles extracted systematically. At this stage, the contents of the articles were aggregated into common categories based on their similarities in meaning. We synthesized the data using both deductive and inductive approaches. In the deductive content analysis, we used three broad areas of research in the assurance of nonfinancial information literature, identified in former research (Tarquinio, 2018): the meaning and features of assurance; factors driving the demand for assurance; and the assurance process and content of assurance statements issued by different assurance providers. Next, in the inductive content analysis process, the pre-selected research area was re-tested, to evaluate if data fits into this main research area (Braun & Clarke, 2006). The analysis has not revealed inadequacies in the themes already identified. However, during the data analysis, new relevant aspects were identified and added to the pre-selected themes. Therefore, those themes and subthemes “appear to be significant concepts that link substantial portions of the data together” (Nowell et al., 2017, p. 8).

(a) *Assurance of nonfinancial information field*

The analysis of assurance of NFIRs in general terms was proposed by 31 articles (Table 1). Based on an analysis of their content, the articles were classified into three sub-areas of research analysis: principal features of assurance of NFIRs, the role and objectives of assurance, and the effects of assurance.

Referring to the first research sub-area, seven articles focus on an overview of assurance practices, assurance providers, standards used for assuring nonfinancial information reports, and related assurance levels (Krasodomaska et al., 2021; Richard & Odendaal, 2020, 2021; Jones et al., 2018; Rashidfarokhi et al., 2018). The market structure for assurance of NFIRs is explicitly investigated by Fernandez-Feijoo et al. (2019). Canning et al. (2019) focus in particular on the assurance process. They highlight that most of the data in sustainability reports are not underpinned by double-entry bookkeeping rigor and that financial audit concepts can be translated in the sustainability assurance arena. The process of constructing materiality is one in which nonaccounting and accounting assurance providers can collaborate.

The role and main objectives of the assurance process (the second sub-area of research) are analysed in 14 studies. External assurance can be used to enhance the reliability and transparency of nonfinancial reports (Safari & Areeb, 2020; Almeida Machado et al., 2020; Pitrakos & Maroun, 2020; Briem & Wald, 2018), promote high-quality reporting (Maroun, 2019a, 2019b; García-Sánchez et al., 2019b; Gerwanski et al., 2019; Odriozola & Baraibar-Diez, 2017), and add value to the company's planning, structure, and accountability (Handoko and Lindawati, 2020). Moreover, assurance of nonfinancial reports supports collaborative work and a co-created system of knowledge between assurance providers and reporting organizations (Channuntapipat, 2021). Companies that invest in assurance are more likely

Table 1 Areas of research in the assurance of nonfinancial information

Area	Sub-area	N.	Papers
Assurance of nonfinancial information field	Features	7	Krasodomska et al. (2021), Richard and Odendaal (2020, 2021), Fernandez-Feijoo et al. (2019), Canning et al. (2019), Jones et al. (2018) and Rashidfarokhi et al. (2018)
	Role and objectives	14	Safari and Areeb (2020), Almeida Handoko and Lindawati (2020), Machado et al. (2020), Pitrakkos and Maroun (2020), Channuntapipat (2021), Harymawan et al. (2020), Maroun (2019a, 2019b), Al-Shaer and Zaman (2019), Gal and Akisik (2020), García-Sánchez et al. (2019b), Gerwanski et al. (2019), Briem and Wald (2018) and Odriozola and Baraibar-Diez (2017)
	Effects	10	Román et al. (2021), Dutta and Dutta (2020), Oware and Mallikarjunappa (2021), Akisik and Gal (2020), Landau et al. (2020), Rosati and Faria (2019), Marín-Andreu and Ortiz-Martínez (2018), Al Farooque and Ahulu (2017) and Rivera-Arrubla et al. (2017)
Determinants of assurance of nonfinancial information	Factors influencing assurance	21	Kılıç et al. (2019, 2021a, 2021b), Miralles-Quirós et al. (2021), Baboukardos et al. (2021), Maroun and Prinsloo (2020), Ruiz-Barbadillo and Martínez-Ferrero (2020), Wang et al. (2020), Simoni et al. (2020), Hassan et al. (2020), Dutta (2019), García-Sánchez et al. (2019a), Sellami et al. (2019), Al-Shaer and Zaman (2018), Braam and Peeters (2018), del Mar Miras-Rodríguez and Di Pietra (2018), Vaz Ogando et al. (2018), Martínez-Ferrero and García-Sánchez (2017a, 2017b), Kuzey and Uyar (2017); Martinez-Ferrero et al. (2017), Fuhrmann et al. (2017)
Assurance process, assurance statements, and assurance providers	Characteristics of assurance statements and assurance providers	9	Boiral et al. (2020, 2019a, 2019b), Hassan (2019), Michelon et al. (2019), Martínez-Ferrero and García-Sánchez (2018), Fernandez-Feijoo et al. (2018), Achmad et al. (2017) and Rossi and Tarquinio (2017)

(continued)

Table 1 (continued)

Area	Sub-area	N.	Papers
	Assurance and new technologies	1	Bakarich et al. (2020)
	Critical analysis and new approaches to assurance	10	Maroun and Prinsloo (2020), Boiral and Heras-Saizarbitoria (2020), Prinsloo and Maroun (2020), Hoang and Phang (2020), Vera-Muñoz et al. (2020), Zhou et al. (2019), Talbot and Boiral (2018), Maroun (2018), Junior and Best (2017) and Maroun (2017)

to monitor management behaviour and be concerned about the achievement of sustainability goals (Al-Shaer & Zaman, 2019). External assurance decreases information asymmetry in voluntary disclosure reports, and an assured sustainability report is valued more highly by investors (Harymawan et al., 2020). While not disavowing the value of assurance, some authors underline that effective internal controls over financial reporting can provide assurance of integrated reports (IRs) that is similar to IR assurance provided by external parties (Gal & Akisik, 2020).

In the third sub-area of research, there are ten articles considering assurance as a variable that can, for example, influence the quality and level of disclosure (Román et al., 2021; Dutta & Dutta, 2020; Al Farooque & Ahulu, 2017, Rivera-Arrubla et al., 2017) or improve the practice of employee volunteerism (Oware & Mallikarjunappa, 2021). The effect of assurance of nonfinancial reports on company financial performance is investigated in three studies. Negative effects of assurance of nonfinancial reports on financial performance are documented by Oware and Mallikarjunappa (2021). In contrast, Akisik and Gal (2020) detect a significant positive association between provision of assurance of integrated reports by accounting firms and multiple financial performance measures. A positive influence of internal assurance on dividends per share is detected by Marín-Andreu and Ortiz-Martínez (2018). Moreover, assurance was considered as one of the variables capable of influencing the integrated report value relevance (Landau et al., 2020) and the addressing of SDGs in sustainability reports (Rosati & Faria, 2019).

(b) Determinants of assurance of nonfinancial information

Research on assurance of nonfinancial information has documented that various factors can influence external assurance of NFIRs and the quality of the assurance process itself. Among our selected articles, three sub-areas of research can be identified. The first concerns factors more strictly related to company characteristics (e.g. size, industry membership, stock exchange listing, financial indicators); the second is related to research focused more on country of origin characteristics (e.g. the legal system, business culture); and the last can be considered a combination of these two categories of factors (e.g. corporate governance mechanisms). In our

sample, there are a total of 21 articles examining factors driving assurance of NFIRs (Table 1).

Among the variables whose effect on assurance is investigated most often are the size and sector of companies that decide to assure their nonfinancial reports (NFRs). It is widely demonstrated that company size positively affects assurance of NFRs (Maroun and Prinsloo, 2020; Simoni et al., 2020). It is also observed that companies operating in sectors with a significant social and environmental impact are more likely to use assurance (Hassan et al., 2020; Vaz-Ogando et al., 2018; Martínez-Ferrero and García-Sánchez, 2017b). Enterprises in these sectors (often qualified as “sensitive”) are subject to concentrated and, in general, greater pressure from various stakeholders, local and international. Therefore, assurance constitutes a tool that companies can adopt to strengthen the reliability and, therefore, the credibility of the data and information reported in NFRs in the eyes of stakeholders.

Several studies based on samples of companies from different countries highlight the role that countries’ legal system (civil or code law) and business culture (stakeholder- or shareholder-oriented) can play in the use of assurance of NFRs. The results obtained by these studies are not uniform. Some research highlights that companies operating in stakeholder-oriented countries (typically with civil law systems) and characterized by stronger legal systems are more likely to assure their NFRs (Ruiz-Barbadillo and Martínez-Ferrero, 2020). However, other research documents that companies operating in countries with weaker institutional environments (Kılıç et al., 2021a) or weak sustainability policies (Simoni et al., 2020) are more likely to have their reports assured; in this case, assurance performs a replacement function.

Some studies show that the presence in a company of a sustainability or corporate social responsibility committee can be the expression of a concrete commitment towards sustainability, which translates, as documented in some works, into a positive relationship between this presence and the decision to assure NFRs. In particular, companies with a sustainability committee are more likely to seek external assurance for their sustainability reports because they are aware of the incremental value generated by independent assurance of sustainability report content (Kılıç et al., 2021b; García-Sánchez et al., 2019a; Sellami et al., 2019). The very presence and characteristics of an audit committee can impact sustainability assurance. In particular, audit committees add credibility and help improve sustainability reporting through their independence, expertise, and oversight (Wang et al., 2020; Al-Shaer and Zaman, 2018). Concentrated ownership and board independence increase the probability of assuring a nonfinancial report (del Mar Miras-Rodríguez and Di Pietra, 2018; Martínez-Ferrero et al., 2017; Martínez-Ferrero and García-Sánchez, 2017a).

(c) Assurance process, assurance statements, and assurance providers

We identified nine articles focused on the characteristics of assurance statements and assurance providers (Table 1). Literature on assurance of NFRs documents the presence in the assurance services market of both accounting and nonaccounting firms. The first category includes auditing companies (especially the Big 4) and

individual auditors. The second comprises certification companies, professionals, and corporate social responsibility (CSR) consultancy and assurance companies, opinion leaders, academic institutions, stakeholder panels, and civil society organizations. The insurance market is dominated by accounting firms. Regarding the role of accounting firms, Fernandez-Feijoo et al. (2018) document that companies audited by a Big 4 firm are more likely to assure their sustainability reports than those audited by a non-Big 4 firm. The research results confirm the connection between financial auditors and assurance providers and underline that the choice of a Big 4 firm as a financial auditor can be considered a driver for the choice of a Big 4 firm as an assurer provider, suggesting, in this way, a potential competitive advantage.

The literature shows differences in the assurance process as conducted by accounting and nonaccounting providers that can be considered expressions of these two different types of providers' DNA. Accounting assurance providers are generally perceived as more independent; their approach to assurance is accountancy-based, and typically, the judgement formulated is on the accuracy of the data and systems that generate the information found in NFRs. In contrast, nonaccounting assurance providers have a more stakeholder-centred approach and tend to focus on building trust and credibility regarding the reliability and quality of NFRs. The standards generally used to perform an NFR assurance engagement are the ISAE3000 (International Standard on Assurance Engagements) developed by the International Auditing and Assurance Standards Board (IAASB) and the AA1000 assurance standard (AA1000ASv3) developed by AccountAbility (Boiral et al., 2020, 2019b). These standards identify the following two types of assurance engagements: reasonable and limited (ISAE3000) and high and moderate (AA1000ASv3). However, the standards allow assurance providers to provide different levels of assurance for different sections of assured NFRs.

Several studies focus on the content and quality of assurance statements issued by different assurance providers and on the conclusions of the verifications carried out. Various studies also highlight differences in the different providers' assurance processes (Boiral et al., 2019a; Martínez-Ferrero and García-Sánchez, 2018; Achmad et al., 2017; Rossi and Tarquinio, 2017). Hassan (2019) investigates whether verbal tones in assurance of sustainability reporting are aimed at persuasion, analysing whether statements show reporting entities in a good light. The study finds that sustainability assurance providers use an optimistic tone and verbal certainty as possible persuasion tools in sustainability assurance reports. However, the results document limited use of an optimistic tone and more widespread use of verbal certainty to avoid criticism over a lack of professionalism.

In a recent work, Michelon et al. (2019) examine assurance providers' use of restatements to create legitimacy in the expansion of market share. Indeed, the lack of shared reporting standards and ambiguous sustainability reporting assurance guidelines on assurance of NFRs create a setting where providers can use restatements to demonstrate both a problem in sustainability reporting and support for assurance as the solution to that issue.

The content analysis of the extracted articles highlighted two new sub-areas of research related, respectively, to the use of technologies for assurance of NFRs (one article) and to critical analysis of the assurance process and proposals for its improvement and/or rethinking (ten articles) (Table 1).

Referring to the use of new technologies to enhance assurance of NFRs, Bakarich et al. (2020) examine the role that blockchain technology can play in improving sustainability reporting and assurance of these reports. The benefits for companies and assurance professionals in using the blockchain distributed ledger technology are related to increased trust, transparency, and traceability. In this way, companies can respond to stakeholder demands as they relate to NFRs. Indeed, the use of blockchain can provide reliable tracking and custodial support for nonfinancial information reported in multiple NFRs, allowing assurance professionals to verify a broader range of information.

Regarding the second emerging sub-area of research, a critical analysis of assurance statements' reliability, usefulness, and contributions to stakeholder accountability is proposed by Boiral and Heras-Saizarbitoria (2020). Based on a qualitative content analysis of 337 assured sustainability reports, the authors document that assurance statements do not demonstrate a substantial verification process and appear instead to be based on a procedural and perfunctory approach that is largely disconnected from sustainability issues. The irrelevance of assurance in ensuring the quality and representativeness of the data disclosed in 93 assured sustainability reports is also detected by Talbot and Boiral (2018).

To bolster the credibility of corporate reports, several authors propose the use of combined assurance (Maroun & Prinsloo, 2020; Prinsloo & Maroun, 2020; Hoang & Phang, 2020; Zhou et al., 2019). Combined assurance refers to more than just the purchase of assurance from independent experts to verify parts of an NFIR. It also deals with the use of different types of systems, processes, controls, and professional services that, "taken as a whole, enable an effective control environment; support the integrity of information used for internal decision-making by management, the governing body, and its committees; and support the integrity of the organisation's external reports" (Institute of Directors, 2016). Although the analysed studies coincide in considering combined assurance a means of enhancing reporting reliability, it is detected that combined assurance models are being designed conservatively. They focus on specific disclosures and are guided by a limited number of assurance methodologies instead of taking a more pluralistic approach to the verification of NFRs as a whole (Prinsloo & Maroun, 2020).

Modification of assurance practices has been proposed as an answer to the need for verification of integrated reports. To provide assurance for an integrated report, different systems of checks and balances could be used (Maroun, 2017). An interpretive assurance model focused on providing assurance on the interpretation and analysis of information included in an integrated report rather than on the underlying data. Adoption of these models involves examining the completeness of the explanation of the value creation process; the methods used to support management discussion and analysis; and the reasonability of the review process to ensure the

reliability of qualitative, forward-looking, and qualitative aspects of an integrated report (Maroun, 2018).

The use of a practitioner-customized procedure to communicate assurance has been proposed to address the growing market demand for assurance of a wide range of subject matters. However, Vera-Muñoz et al. (2020) document that this procedure's use does not significantly affect users' confidence judgements. Support for the improvement of stakeholder understanding of the scope of assurance processes can be obtained thanks to the updated GRI Content Index Model. This new GRI index changes stakeholders' expectation-performance gap in regard to assurance processes for GRI sustainability reports and improves the reports' credibility (Junior & Best, 2017).

5 Avenues for Future Research

One central aim of a literature review is to identify avenues for future research. Despite the increased attention of the literature on the assurance of nonfinancial reports, our study concludes that there is still ample space for research on this field. Further research could focus on five macro issues: integration between financial and nonfinancial verification processes; integration of internal and external control systems; development and use of a theoretical framework to guide analyses of the assurance topic; the impact of assurance on reporters and stakeholders; and the use of new technologies.

With reference to the first avenues for future research, previous studies have underlined that there are difficulties in transferring financial audit-based methodologies and concepts to assurance areas, especially considering that most of the data in sustainability reports are not underpinned by rigorous double-entry bookkeeping, with the possibility of material misstatement risk (Krasodomska et al., 2021; Canning et al., 2019; O'Dwyer, 2011). Therefore, researchers should investigate how financial audit concepts can be translated to the sustainability assurance arena.

Our review has documented the presence of both accounting and nonaccounting assurance providers in the assurance market arena, revealing notable differences in their expertise and practice approaches to the assurance of nonfinancial information (Boiral et al., 2020; Fernandez-Feijoo et al., 2018; Rossi and Tarquinio, 2017). Several studies have highlighted that the credibility of nonfinancial reports can come from services and inputs obtained from various providers (IAASB, 2021; Accountancy Europe, 2020; Briem & Wald, 2018). However, studies on how the collaboration between accounting and nonaccounting providers (multidisciplinary teams) and their competencies could strengthen the assurance process are still lacking.

Second, our analysis has shown that companies are making increasing use of a combined approach to assurance, which includes the concurrent use of conventional external assurance, internal audit, and other types of internal monitoring and review (Maroun & Prinsloo, 2020; Prinsloo & Maroun, 2020; Zhou et al., 2019). However, there is a need for additional research on the adoption and effects of combined

assurance practices that explain the link, if any, between external assurance of nonfinancial information (e.g. in sustainability and integrated reports), management control systems, and other internal control systems. In particular, the diffusion of integrated reporting practices requires the development and evolution of integrated reporting assurance to enhance the credibility of these reports. The IFAC and IIRC refer to a “new way of thinking” needed to achieve assurance of integrated reports (IFAC, 2021). Indeed, the IAASB and its Extended External Reporting (EER) assurance project offer a good start. Researchers should attempt to conduct studies examining how the assurance process of IR changes over time and how the combined assurance models can contribute to relevant and reliable IR.

Third, the analysis of the selected articles showed that approximately 38% of research does not refer to a theoretical framework to guide the analysis, and the other studies mainly refer to legitimacy, stakeholder, and institutional theory. Considering that assurance is an emerging accounting-related practice, there is a need for future research that uses different theoretical approaches or a combination of theoretical lenses not yet applied to assurance (Tyson & Adams, 2020). Among theoretical perspectives new to the assurance field, there is, for example, the gatekeeping theory. This theory presupposes that the gatekeepers establish a hierarchy of information and decide what information should move to a group or individual (e.g. information legally prescribed) and what information should not. It has been frequently used to explain the activities of accountants within an organization (Tushman & Katz, 1980), and more recently, it was also applied to sustainability reporting (Schaltegger & Zvezdov, 2015). The adoption of the gatekeeping theory to nonfinancial reports assurance decision could help explain the greater or lesser probability to adopt a voluntary NFR assurance depending on who oversee the sustainability activities or depending on the characteristics of the company’s key decision-maker.

There is also the transformational leadership theory among theoretical frameworks that have not been used in nonfinancial assurance research. This theory is associated with leader’s characteristics assuming that they can play a relevant role in diffusing the sustainability strategies across an organization and might support the decision to assure a nonfinancial report. The adoption of new theoretical frameworks could generate further research questions and new explanations of findings.

Fourth, several studies are based on content analyses of NFRs and/or assurance statements. Only a few studies investigate the assurance topic through interviews, case studies, or direct observation inside organizations (e.g. using action research). This methodological limit has already been highlighted in the literature (Manetti & Toccafondi, 2012; O’Dwyer et al., 2011, Boiral & Heras-Saizarbitoria, 2020). Therefore, researchers should attempt to conduct empirical studies of assurance providers, companies, and users of NFRs using these methodological approaches. For example, detailed interviews with organizations and their assurance providers to investigate the roles and influence of assurance on business operations will provide an interesting area of study for future researchers. The use of action research or interviews with organizations’ management can further our understanding of the value of assurance of nonfinancial reports, contributing to the development of nonfinancial reporting and monitoring.

Finally, considering that research on the use in assurance of new technologies, and in particular blockchain, is still in its infancy (Bakarich et al., 2020), there is a need to explore the benefits and costs of this technology. Adopting this technology can support companies' operational goals while improving the quality of their NFRs and enhancing the assurance process.

6 Discussion and Conclusion

In this chapter, we conducted a review of literature on assurance of NFRs to understand the ground covered and identify gaps to be filled and areas for future research. We found three main research lines on assurance of NFRs focused on the meaning and features of assurance, factors driving the demand for assurance, and the assurance process and content of assurance statements issued by different assurance providers. These three macro research areas were further divided into sub-areas in which research with the same objective has been grouped.

Our review, unlike the literature reviews proposed by Farooq and de Villiers (2017) and Velte and Stawinoga (2017), highlights in particular the greater attention of researchers to the issue of assurance of integrated reports, the development of critical literature on the assurance process as carried out by various assurance providers, and the redefinition of the process of verification of nonfinancial information. Unlike what was found in previous reviews, the research in our sample, in large part, specifies the theoretical lens used to guide the analysis.

Five different avenues for further research were proposed. The push towards the dissemination of assurance practices for nonfinancial information may derive from the progressive dissemination of various rules mandating disclosure of nonfinancial information. The development of assurance practices may also be supported by evidence confirming that best reporting practices generally characterize companies that use assurance.

Constant support for the development of assurance practices is also provided by organizations that, even if they do not require nonfinancial information verification, recognize its importance. This is the position of the GRI, which recommends but does not require assurance of sustainability reports. The same applies to the Sustainability Accounting Standards Board (SASB), which considers external assurance important and, therefore, is developing its own standards to allow companies that want to use the standards to submit reports prepared for verification. The International Integrated Reporting Council (IIRC), following feedback received in the debate over the trust and credibility of integrated reports, also emphasizes the role that independent external assurance can play in improving the trust and credibility of these documents.

An interest in assurance of nonfinancial reports is also increasingly being demonstrated by CSR rating agencies that are called upon to provide assessments of companies to be used to guide various stakeholders' decisions; investors are

undoubtedly interested first and foremost in the truthfulness of nonfinancial information communicated by companies.

The systematic literature review, like any other methodology, has strengths and weaknesses. First, the use of alternative databases and other types of publications (i.e. books, nonacademic journals) might lead to the extraction of other studies missed in our analysis. Second, the keyword-search approach influences which articles are found in database searches, although we openly reported our search strings. Finally, qualitative content analysis is subject to interpretation, and thus there is a risk of bias in the results.

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National Differences in Non-financial Disclosure: A Cross-Country Analysis



Francesca Magli and Mauro Martinelli

1 Introduction

Over the past decade, the EU has conducted and supported several initiatives to help the private sector become more sustainable and transparent, integrate business engagement into transformative strategies, and reshape business transparency to better align with sustainable financing needs (CSR Europe and GRI, 2017, p. 12). Between 2006 and 2011, the EU changed its regulatory approach in order to better regulate corporate social responsibility (CSR) and, in particular, the central issue of transparency and reporting (Ahern, 2016, p. 603, Monciardini, 2017, Krasodomska et al., 2019). The 2014/95/EU Directive on “non-financial disclosure” is a response to the European Commission’s concerns about CSR and sustainability (European Commission, 2011, Biondi et al., 2020, p. 894). The Directive constitutes a novel development in EU law (Szabó & Sørensen, 2015) and represents the first mandatory discipline that some types of companies have been subject to (Cleary Gottfried, 2017; CNDCEC, 2017; CSR Europe and GRI, 2017), unlike what happened in the past (Flostrand & Strom, 2006, Mion & Loza Adaui, 2019, Biondi et al., 2020). The EU Commission’s proposal is for a minimum level of harmonization; the Commission argues that this approach should be adopted to avoid a one-size-fits-all approach, thus maintaining flexibility for all companies and preventing non-financial reporting becoming a mere box-ticking exercise (Szabó & Sørensen, 2015, p. 318, Aureli et al., 2018, p. 50). The Commission declares that it has published these long-awaited and non-binding guidelines on non-financial reporting to give companies the opportunity to use them as a support tool in starting their new

F. Magli (✉) · M. Martinelli

Department of Business and Law, University of Milano-Bicocca, Milan, Italy

e-mail: francesca.magli@unimib.it; mauro.martinelli@unimib.it

reporting cycles and to help them comply with the requirements of the directive (CSR Europe and GRI, 2017, p. 12).

The purpose of this chapter is to understand what the main differences are and on what they depend. For this reason, the analysis focuses on the main definitions of “large organization” and “of public interest,” on the company scope and on the report framework and features, or what information the report must obligatorily contain and how this information should be presented.

This paper is organized as follows. The next section illustrates the research method. Secondly, the results or the main differences and similarities in 2014/95/EU Directive application are analyzed. The last section provides a discussion on critical issues and the conclusions.

2 Methodology

As regards the methodology adopted, we used a documentary analysis based on publications, articles, and laws. We started from the analysis of Directive 2014/95/EU and of the document “Member State Implementation of Directive 2014/95/EU,” drawn up by CSR Europe and GRI in 2017. We then analyzed the literature investigating the actual application in national contexts as well as articles comparing different European nations in the period 2018–2020, to which we added the main suggestions obtained from the 2020 public consultation for the revision of the directive.

3 Results: Main Differences and Similarities

The 2014/95/EU Directive should be applied in all countries, but observing what happens in practice in the various nations and because the guidelines are non-binding, there are some differences between the principles applied in different national regulations. We analyze differences between the laws of the different countries and Directive 2014/95/EU concerning the definition of a “large organization” (i.e., the characteristics used to identify a large company) and the definition of an “organization of public interest.”

In accordance with the definition prescribed by Directive 2013/34/EU, most EU countries (21 out of 30) identify large organizations as enterprises that exceed 2 out of 3 of the following criteria for 2 successive accounting periods:

- A balance sheet total of EUR 20 million
- Net turnover of EUR 40 million
- Over 500 employees

The main differences in the legislation of countries that do not use the definition prescribed by Directive 2013/34/EU are summarized in Table 1.

Table 1 Large organization features

Country	Balance sheet total	Net turnover	Number of employees
Belgium	Over EUR 17 million	Over EUR 34 million	Over 500
Czech Republic	Not a criterion	Over CZK 1 billion	Over 500
Greece ^a	Not a criterion Over EUR 350,000	Not a criterion Over EUR 700,000	Over 500 Over 10
Estonia	Not a criterion	Not a criterion	Over 500
Portugal	Not a criterion	Not a criterion	Over 500
Romania	Not a criterion	Not a criterion	Over 500
Sweden	Over SEK 175 million (EUR 18 million)	Over SEK 350 million (EUR 35 million)	Over 250
UK	Not a criterion	Not a criterion	Over 500

^aThese two lines are explained in the main text

As Table 1 shows, there are relatively few differences in the concept of a large organization. Apart from Belgium and Sweden, which use slightly lower the threshold values than Directive 2013/34/EU, most of the other nations that use “adapted requirements” simply consider only one (employees) or two (net turnover and employees) of Directive 2013/34/EU’s three identification criteria.

Greek policy makers have gone a step further in terms of regulation and, following the incorporation of the Directive, also require most small- and medium-sized enterprises to engage in reporting, as highlighted in Circular ΨΟΥΨ465XI8-BM4 2017. This circular applies to companies with over ten employees and with net turnover over EUR 700,000 or balance sheet total over EUR 350,000 (CSR Europe and GRI, 2017, p. 22, GRI, 2018).

By way of defining what is an “organization of public interest,” Directive 2014/95/EU includes only three types of organization, specifically:

- Listed companies
- Credit institutions
- Insurance companies

However, only 11 countries restrict their non-financial reporting regulations to only these types of organization: Estonia, Finland, Ireland, Italy (using banks instead of credit institutions), Latvia (using financial institutions instead of credit institutions), Luxembourg, Malta, the Netherlands (including banks as an additional category), Slovenia, Sweden, and the UK. Most nations (19 out of 30) have adopted a broader definition that includes other types of companies. There are several definitions of public interest, and for this reason it is difficult to consider this concept as unique and specific. Every nation has interpreted the meaning of public interest according to its particular culture and habits. Some nations have therefore included government and municipal companies (Slovakia and Greece); others have included specific national institutions such as nationally owned railways, electricity and natural gas suppliers, water and sewage companies (Bulgaria), or large entities

engaged in deforestation of primary forests (Greece). In other cases, some unspecified investment companies have been treated as public interest companies, such as pension funds, collective investment companies (Portugal and Spain and “undertakings for collective investment in transferable securities”—UCITS in Croatia), alternative investment companies (Bulgaria, the Czech Republic, Portugal, and Spain), ordinary financial institutions such as credit unions (Lithuania) or payment institutions (Poland and Romania), and even companies that offer specialized forms of loans such as leasing companies and factoring companies (Croatia).

Directive 2014/95/EU also allows individual countries to determine:

- Whether CSR reports must be checked by an external auditor
- What penalty, if any, is imposed on organizations that fail to communicate non-financial information adequately

Regarding the first point, the requirement to use an external auditor, most countries align themselves with the Directive and state that the only role of the auditor is to verify the presence of a statement. However, some countries (Belgium, Bulgaria, Denmark, the Netherlands, Romania, the UK) also require the auditor to perform a “consistency check of disclosures as part of the review of the management report.” In addition to checking the disclosures, the Netherlands also requires the “identification of material misstatements.” The nations that deviate the most from the Directive are France and Italy. Both require a check on the presence and contents of the statement; for France, this requirement applies only if the company has 500+ employees and either turnover of over EUR 100 million or a balance sheet of over EUR 100 million.

Regarding penalties, all countries have adapted the requirements of the Directive, and three countries have even omitted the information. The latter are Estonia, the Netherlands, and Spain.

There are, however, other important differences in the nations’ guidelines, as described below. In particular, these differences concern the “reporting framework” (international, EU-based, or national) and “report features,” such as:

- What the report focuses on
- What information the report must contain
- How the information should be presented (within the management report, as a separate report, etc.)

As regards the reporting framework, most countries use only an international, EU-based, or national reporting framework. Some of the nations that do not, such as Denmark and Spain, use other specific frameworks (such as EMAS, UNGC, COP, PRI, UNGP, OCDE, ISO 26000, the ILO Declaration, or GRI); other nations use a mixed reporting methodology based on one or more reporting standards (Italy and Poland) or, in the case of Bulgaria, a reporting framework based on the instructions of the Ministry of Finance.

Some states (Estonia, France, Greece, Hungary, Malta, the Netherlands, Slovakia, the UK) have chosen to use the management report to communicate non-financial information, whereas others (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech

Republic, Denmark, Germany, Italy, Latvia, Lithuania, Luxembourg, Poland, Portugal, Romania, Slovenia, Spain, Sweden) allow a free choice of whether to include the information in the management report or a separate report. As regards the consistency check, member states that require the information be provided in the management report may also apply Directive 2013/34/EU to the CSR information. According to this Directive, the statutory auditor or audit firm must also (a) express an opinion on whether the management report is consistent with the financial statements for the same period and whether it has been prepared in accordance with applicable legal requirements and (b) indicate whether the auditor has identified any material misstatements in the management report and provide an indication of the nature of those misstatements (CSR Europe and GRI, 2017, p. 9).

The report features are the same for almost all countries. Specifically, reports in all countries should address the following topics: environmental performance, social and employee matters, human rights performance, corruption, and anti-bribery matters. Moreover, the report should describe the scope and business model of the company, company policy related to non-financial matters, major risks related to non-financial matters and business activities, and any non-financial KPIs that are used (CSR Europe and GRI, 2017, Caputo et al., 2020, p. 3). Non-financial information can address various types of information, such as social dialogue with stakeholders, information and consultation rights, trade union rights, health and safety, gender equality, etc. Businesses should also specifically explain in this communication how they are preventing human rights violations and fighting corruption and bribery (Camilleri, 2015, p. 228).

Our analysis highlights, moreover, that only a small number of countries have omitted some requirements and in particular only requirements regarding:

- Non-compliance penalties (Estonia, the Netherlands, and Sweden).
- The safe harbor principle: Some countries do not apply this option because it would damage the company if disclosed (Denmark, Estonia, France, Norway, and Slovakia). The safe harbor principle involves a certain level of judgment, and therefore subjectivity, from the relevant administrative body in deciding whether information would be damaging (Aureli et al., 2018, p. 59).

Of the 28 countries of the EU, only 64% have been the subject of research regarding Directive 2014/95/EU. According to the scholars Korca and Costa (2020, p. 8), the countries in which the application of the Directive has been most analyzed are Italy and Poland. The scholars who have performed this work argue that it was necessary to evaluate the effects of the Directive in countries such as Italy and Poland because these countries had no previous legislation in this area (Matuszak & Rozanska, 2017; Mion & Loza Adauí, 2019; Caputo et al., 2020; Krasodomska et al., 2019). In terms of topics, Aureli et al. (2018) suggest that no country has gone beyond the minimum requirements set by the EU Directive; all have merely transposed the list of topics and items requiring disclosure as written in the EU Directive. In particular a comparison between Italy, the UK, and France suggests that in terms of national legislation, France regulates everything in the Directive using national

legislation, the UK adds nothing to the Directive, and Italy seems to sit in between, sharing most of its aspects with the French legislation (Aureli et al., 2018, p. 58).

4 Discussion and Conclusions

What are the critical points that emerge from this analysis? Surely the lack of detail in the Directive, and consequently in national laws, about what non-financial information must be communicated has led to an “increase in the quantity of information provided and not to an actual organizational change” (Caputo et al., 2020). The period of application analyzed is also very short (from 2017 to 2020), and therefore it is difficult to identify clear results, especially for qualitative outcomes. In terms of quality, in fact, it is difficult to determine whether the mandatory regulation of non-financial information has led to an improvement in such information. According to a quantitative analysis by Mion and Loza Adauí (2019, p. 19) using a sample of Italian and German companies, credibility and strategic anchorage have improved for the majority of companies. This finding is supported by another analysis of 24 OECD countries, which claims that mandatory reporting of non-financial disclosures leads to an increase in CSR activities and has a substantial impact on companies that previously had low levels of CSR activity (Avetisyan et al., 2017). Another criticism is that “the NFRD has failed to achieve its intended objective ‘to increase the relevance, consistency and comparability’ of information disclosed by large corporations across the European Union” (Monciardini et al., 2020, p. 18, see also Tsagas & Villiers, 2020). Tsagas and Villiers explain how compliance with reporting initiatives makes companies less, rather than more, transparent; such findings suggest that a clear understanding of the effects and effectiveness of the various reporting frameworks is needed. Another very important issue is the reliability of the information disclosed and its traceability. A study carried out by the Alliance for Corporate Transparency demonstrates the limited impact of non-financial disclosures and concludes that the quality and comparability of corporate non-financial information is largely insufficient to understand its impacts, risks, or even the plans (The Alliance for Corporate Transparency, 2020).

Additionally, in order to analyze the status of this Directive’s application, in 2020, CSR Europe launched a public consultation on revision of the Non-financial Disclosure Directive; in June the network’s collective responses identified some key elements that should be taken into account in the revision process, in particular:

- Reporting should integrate sustainability and attract sustainable investment;
- Flexibility and materiality should be prioritized above all;

- A smart mixed approach is needed to achieve better coupling of compliance and capacity building;
- Strong policy coherence is needed. (CSR Europe, 2020)¹

If these suggestions appear impractical or poorly defined, they nevertheless further support the critical issues we have highlighted and underline the need for a revision of the Directive.

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¹For a more precise overview, see <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12129-Revision-of-Non-Financial-Reporting-Directive/public-consultation>.

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The Role and Expectations of Stakeholders in the New Non-financial Disclosure Regulations



Cinzia Vallone

1 Introduction

Growing globalization is accompanied by social developments and socioeconomic changes, along with adding to the complexity of the corporate environment. The expanding attention to these issues has led to an increasing number of international regulations, certifications, commercial policies, and human rights initiatives. Society holds firms responsible for their social, environmental, and economic impacts on their community. Stakeholders wish to have a more in-depth view of these impacts through more relevant non-financial information. For example, two-thirds of global institutional investors want to take non-financial information into account in their investment decisions (WBCSD, 2014). It is clear that stakeholders are asking for transparency, accountability, and legitimacy of the organizations' activities. Many organizations are motivated by this growing pressure from stakeholders to focus on non-financial reporting.

Stakeholders such as consumers, investors, media, governments, and activists want to understand the way organizations deal with these ethical, environmental, and social issues. This means that traditional financial reporting is no longer sufficient for the need for information on the part of stakeholders. Consequently, during recent decades we have seen a rise in non-financial reporting. Stakeholders, including governments, have high expectations about the potential for the reporting process to lead to improved transparency and accountability, as well as to internal change (European Union in European Commission, 2014; European Commission, 2015).

C. Vallone (✉)

Department of Business and Law, University of Milano-Bicocca, Milan, Italy

Link Campus University, Rome, Italy

e-mail: c.vallone@unilink.it

In this period of substantial ferment aimed at change, stakeholders assume new roles and acquire new expectations. Stakeholders recognize the great potential non-financial reporting has to drive decisions that are more informed, not only for managing investment decisions but also for evaluating the ethical, moral, and social position of organizations and making judgments on the reputational factors that could impact financial performance. The chapter is organized in other three paragraphs. In the first paragraph, the methodology is explained, and the first studies and supporting literature are introduced. Later in the discussion, the results of the first interviews with stakeholders are shown and commented on and finally the conclusions.

2 Methodology and Literature Review

This study examines the international literature on the behavior, aspirations, and contributions of stakeholders with regard to non-financial disclosure, analyzing the first studies launched after issuance of Directive 2014/95/EU, Non-financial Reporting Directive, on the integration of non-financial reporting by European countries. Driving the analysis is stakeholder theory, which has two quite different branches of stakeholder theory, namely, managerial and normative (Gray et al., 1995).

According to the managerial branch, stakeholders can exert their influence to force organizations to meet their expectations. At the same time, organizations will be inclined to accept the expectations of the most powerful stakeholders in order to ensure better results (Gray et al., 1995). Stakeholders who are able to influence the choices of organizations are those recognized as controlling financial resources (La Torre et al. 2018, Neu et al., 1998). This means that organizations will pay more attention to stakeholders who can influence access to resources organizations need to be successful. Financial resource providers and banks are generally seen as powerful stakeholders that managers must satisfy (Neu et al., 1998).

In contrast, the normative branch suggests a more egalitarian approach, where all stakeholders have equal relevance. Therefore, organizations have a responsibility, not only towards investors but also towards all stakeholders, acting in a balanced way (Hasnas, 1998). It is assumed then that disclosures provide information for the benefit of all stakeholders, not just the powerful ones.

In recent years, the literature has provided clear indications regarding the need to increase stakeholder involvement and participation in sustainability reporting (SR) processes (Rhianon Edgley et al., 2010). Firstly, it has been noted that the quality of SR is closely linked to that of the commitment of stakeholders, both before and during drafting of the report (Thomson & Bebbington, 2005). Furthermore, scholars have supported the thesis according to which greater stakeholder involvement in the SR assurance processes can bring significant benefits to the businesses, due to increased confidence in the relationships (O'Dwyer & Owen, 2007; Hodge et al., 2009) and a greater ability to interact with the external environment and internal organizational structure during the decision-making processes (Gray, 2000; Owen et al., 2001).

Therefore, the European Commission calls for the disclosure of non-financial information in order to take into account the multidimensional nature of corporate social responsibility (CSR) and the diversity of CSR policies to meet the needs of investors and other stakeholders, as well as the need to provide consumers with easy access to information on the impact of businesses on society (European Union Directive, 2014/95).

Non-financial disclosure is considered essential, and the way in which companies communicate with their stakeholders has become the object of intense supervision, helping to stimulate continuous improvement of social action (Christensen et al., 2017). Communication becomes a performative means through which reality is described, disseminated, and witnessed (Ashcraft et al., 2009). The international literature on this topic has raised several questions about how stakeholders can be informed and involved in the construction and execution of non-financial disclosure (Morsing & Schultz, 2006). Morsing and Schultz proposed three strategies on how companies strategically engage the non-financial disclosure towards their stakeholders: *the stakeholder information strategy*, *the stakeholder response strategy*, and *the stakeholder involvement strategy*. In fact, the authors define the communication process with stakeholders as one way or two way, distinguishing between two strategic organizational behaviors: (a) substantial strategy, in which the company focuses on its image and good reputation in order to look like a citizen organization, and (b) symbolic strategy, which represents the congruence of the company's actions with the expectations of its stakeholders and the whole community. Research has highlighted the transition process. It seems that the traditional unidirectional communication tools of CSR are increasingly integrated by bidirectional and symmetrical "Web 2.0" communication channels, which gradually blur the boundaries between senders and recipients of CSR information and transform interactions between company and stakeholders (Capriotti, 2011).

3 Discussion

Many European governments have implemented the new directives on non-financial disclosure. Great Britain, for example, introduced additional obligations attributed to large public interest entities in non-financial reporting through its Companies Act 2006 of 2016. Very interesting, in fact, is the study commissioned by the UK Department of Business, Energy and Industrial Strategy (BEIS) at PricewaterhouseCoopers on the behavior of companies and stakeholders post-implementation of the new regulations, to explore their impacts (BEIS Research Paper Number 2019/027). In particular, in 2018, BEIS began observing the impacts of the post-implementation regulations in order to understand the perspectives and expectations of stakeholders. The study is based on qualitative interviews with stakeholder organizations (e.g., professional bodies, not-for-profit organizations, investor associations, business organizations, and sustainable development organizations) and companies subject to the legislation. The study shows that "stakeholders

recognized the increasing importance and relevance of non-financial reporting information but there were different views around the level of engagement and perceptions of value amongst some users of the information” (BEIS Research Paper Number, 2019/027, p. 15).

Stakeholders see non-financial reporting as having great potential to drive and influence the decisions of investors and other stakeholders.

Furthermore, non-financial reporting is considered important in different ways: not only for informing and guiding investment decisions but also for evaluating the ethical, moral, and social position of organizations and making judgments on any reputational factors that could impact financial performance.

Stakeholder criticism addresses a number of factors: a lack of materiality; a lack of confidence in the rigor and/or accuracy of non-financial content driven by a lack of certainty; a lack of familiarity, knowledge, or experience in analyzing and effectively using non-financial information; a lack of clear and cohesive correlation with the content of the financial information; and the inconsistency and/or incompatibility of non-financial content between companies and over the years.

Posed as a key issue for many stakeholders is the lack of materiality of information. It appears that for many stakeholders, particularly investors, information remains vague, verbose, and of little relevance. Many respondents pointed out that companies show information that often does not represent the true potential risk of their actions, focusing on irrelevant factors (Boiral & Heras-Saizarbitoria, 2020). Some stakeholders have commented that non-financial reporting is often inaccessible due to the huge volume of content that makes it difficult to quickly identify relevant information of interest to their decision-making process. To overcome this problem, some companies have reported using stakeholder groups, both internal and external, to set up a materiality matrix or to prepare surveys to prioritize social and environmental issues (BEIS Research Paper Number 2019/027, p. 18; Kaur & Lodhia 2018; Manetti & Toccafondi, 2012).

With regard to inconsistency and lack of comparability, over half of the respondents mentioned variations in reporting between companies and the consequent difficulties in comparing non-financial reports (Bepari & Mollik, 2016; Gürtürk & Hahn, 2016, Testarmata et al., 2020).

As for the quality and completeness of information, some of the interviewees report that the legislation has stimulated a sense of duty for companies, although in many cases, they see this task as simply one more obligation to comply with rather than a path to innovation. Many organizations produce “marketing brochures” rather than a strategy, risk, and opportunity report (Boiral, 2013; Cho & Patten, 2007; Cho et al., 2015).

Interesting is the opinion of the labor union that mentions a lack of information on the workforce employed, since the legislation requires information on employees. By taking the word “employees” literally, many companies leave out information on people hired through intermediaries or those with precarious contracts of a different nature. Data that may be relevant especially in the hospitality sector constitute a significant percentage (BEIS Research Paper Number 2019/027, p. 20).

The opinions of the online public consultation on the non-financial reporting directive are of the same content. The consultation document prepared by the European Commission confirms that the non-financial information currently disclosed by companies does not adequately meet the needs of stakeholders. (European Commission, consultation document review of the non-financial reporting directive, 2020). Several problems have been identified. Generally, the non-financial information available is considered inadequate in order to understand how companies affect society and the environment.

Stakeholders believe that the non-financial information reported is not sufficiently reliable, comparable, and relevant on the risks, opportunities, and impacts for sustainability. Finally, companies do not report all non-financial information that users deem necessary (Farneti et al., 2019; Wicks & Goodstein 2009).

4 Conclusion

Surely, legislation has accelerated companies' awareness of concrete cultural change on the part of stakeholders. It has also reinforced the notion that non-financial information has really become as relevant as financial information and furthermore that such data influence the choices of investors. The expectations of stakeholders push for continuous improvement in the quality of non-financial reports by adding another dimension capable of giving a complete vision of a company on environmental or social issues.

Legislation has generated virtuous competition between organizations. Those with better information gain more market share, enhance their reputation, and increase their value.

Among the weaknesses, however, is the low quality of reporting due to the lack of standards which leads to inadequate transparency, homogeneity, and comparability (Buhr et al., 2014). Stakeholders also believe that the information reported is inadequate, verbose, and, in many cases, not very relevant.

It is in this sense that academic discussion focuses on so-called integrated communication in order to ensure comprehensive disclosure based on transparency and suggests following standards and guidelines to avoid a self-referential path and to allow disclosure homogeneity. The use of standards in particular allows an approach to transparency; the ability to compare information between companies; planning and improvement of objectives over the years; making strategic choices and evaluating the results; and fostering the reliability of information.

To overcome these issues, companies have realized the importance of involving stakeholders in surveys or interviews to bring out the relevant and significant facts on which stakeholders base their choices and decisions (Guenther et al., 2015; Manetti, 2011). In fact, the risk associated with irrelevant reporting or reporting that does not meet stakeholder expectations is generating significant losses. Non-financial information is considered as important as financial information. Some consider this

information “pre-financial” as it can directly influence investor decision-making and have a significant impact.

It is generally accepted that “non-financial reporting allows investors to determine which companies perform well in specific areas, such as employment, human rights, or environmental issues, and which ones do not, allowing investors to determine which companies are leaders and which ones are laggards in each sector. They can then decide whether to invest specifically in those companies that perform well in each of these areas, while also allowing them to interact with laggards and encourage them to improve their performance” (BEIS, p. 23).

The analysis shows that all stakeholders are taken into consideration for the purposes of good non-financial reporting; however, investors retain a certain importance. Investors are considered stakeholders who have the power to influence decisions and the quality of information and to encourage a change of culture in investment behavior. In fact, non-financial reporting requirements can make it easier for investors to determine a company’s ability to create value over time, potentially helping to alleviate the short-termism in equity markets.

The adoption of a long-term perspective and promotion of the concept of “patient capital” in equity markets are supported by companies’ reporting on their ability to create value over time.

Some stakeholders highlighted a growing focus on long-term investing within certain sectors of the investment community. This means that investors are asking companies to better articulate how capital allocation decisions are linked to strategy, particularly around environmental, social, and governance (ESG) risks and opportunities as well as human capital and culture. The consensus among stakeholders is that a short-termism in business and investment behavior can only be achieved when the financial and non-financial information provided by companies is material, detailed, sufficiently reliable, and comparable so that it can influence decision-making.

Furthermore, analysis of the literature shows that many companies have focused on greater employee engagement and loyalty, as well as supporting recruitment and retention. Non-financial disclosures allow employees and stakeholders to evaluate a company’s strategy and purpose in relation to its principles and values.

Moreover, the coordination of national provisions concerning the disclosure of non-financial information in respect of certain large undertakings is of importance for the interests of undertakings, shareholders, and other stakeholders. Coordination is necessary in those fields because most of those undertakings operate in more than one member state. It also encourages industry, interested governments, and relevant stakeholders to develop models for best practices and facilitate actions to integrate financial and non-financial information, taking into account experiences from already existing frameworks.

The biggest expectation of stakeholders, in conclusion, is greater relevance of information (materiality), more transparency, and greater comparability. The role of stakeholders then becomes one of propelling and promoting a change of culture. Such role is increasingly felt close to the organization, in continuous involvement in

making non-financial information more meaningful (Federation of European Accountant, 2015, 2016).

Furthermore, the huge demand for greater comparability of information could lead to differences in levels of competitiveness and therefore in the value of the company.

Comparability could also lead to the development of internal strategies in response to non-financial data. This strategy could then be translated into accounting and management control systems to improve non-financial performance, resulting in improved performance.

From these initial analyses of stakeholder comments, the European Commission in its communication on the European Green Deal has committed to revising the Non-financial Relations Directive in 2020 as part of the strategy to strengthen the foundation for sustainable investment. Achieving the objectives of the European Green Deal will require additional investments to increase sustainable finance by improving transparency.

The European Green Deal also stressed that sustainability should be more broadly incorporated into the corporate governance framework, as many companies still focus too much on short-term financial performance relative to their development and aspects of sustainability.

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Directive 2014/95/EU: Insights into the Auditor's Role



Cristian Carini, Federica Farneti, and Monica Veneziani

1 Introduction

There has been a growing need for information in the non-financial statement to be verified by an independent assurance services provider for the issuing of a formal assurance statement. In an international survey in 2008, KPMG found that 40% of all G250 companies already provided formal assurance for such statements.

Currently in Europe, public-interest entities with specific characteristics, as defined at an EU level in Directive 95/2014 EU, are required to issue a non-financial information statement, and in certain countries, such as Italy (Zangheri & Farneti, 2019), France and Spain (Krasodomska et al., 2021, p. 7), are also required to provide an independent mandatory assurance report on non-financial information (NFI) (Carini et al., 2017). However, this type of auditing is not mandatory in many European countries (CSR and GRI, 2017), giving rise to considerable discrepancies in terms of audit requirements within a single regulatory regime.¹

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¹ At European level, non-financial information statements are now a requirement for specific public interest entities. Article 1 of Directive 2014/95/EU states that “Large undertakings which are public-interest entities exceeding on their balance sheet dates the criterion of the average number of

C. Carini (✉) · M. Veneziani

Department of Economics and Management, University of Brescia, Brescia, Italy

e-mail: cristian.carini@unibs.it; monica.veneziani@unibs.it

F. Farneti

Department of Sociology and Business Law, “Alma Mater Studiorum” University of Bologna, Bologna, Italy

e-mail: federica.farneti@unibo.it

The auditor plays a key role in NFI statement auditing. Given the relevance of the audit, we aim to investigate how it is developed. Andon et al. (2015, p. 1400) point out that “new audit spaces” exist to perform novel assurance and that the auditor’s role is to act at the intersection of the field of auditing and the environment. They reflect on four themes, including the nature of the audit role. We want to investigate the nature of the audit role in a specific service firm, by gaining insight into how auditors operate, based on data collected during semi-structured interviews.

O’Dwyer et al. (2011, p. 32) highlight that there has been a lack of in-depth research examining the process by which sustainability assurance statements are generated. Thus, the aim of the chapter is to gain empirical understanding of the process through which non-financial information assurance operates, considering an Italian practitioners’ firm approach to assurance and the content of these audit reports.

The study’s contribution is to fill the gap in the assurance report preparation process. We explore the backstage of assurance practice to understand how it is constructed by practitioners in order to get insights into the reliability and the level of analysis of such reports. This is relevant as the audit is the statement that enhances the reputation of the firm and also sometimes is required by law. As a consequence, this study aims to: (1) outline the contents of assurance engagement, with reference to the Italian context, regarding the verification of information contained in the NFI statement or in a separate report prepared by an independent assurance services provider; (2) understand how the assurance report is provided, by analysing the viewpoint of a provider of such services; (3) understand the skills and competences necessary to carry out assurance services; (4) gain insight into future developments auditing (limited assurance vs. reasonable assurance or a mix of them).

To address these aspects, we first analyse in Sect. 2 the institutional setting where the development of the audit firms operates; Sect. 3 refers to the method applied which is the one of semi-structured interviews; Sect. 4 relates with the findings emerging from the interview, and finally Sect. 5 concludes the contribution.

2 Institutional Setting

Non-financial information must be included in company disclosure (2014/95/EU, Recital 6), indicating a description of policies, results and risks pertaining to areas of operation (Carini et al., 2018, 2020). The NFI Statement strengthens company reporting in the sense that it guarantees an equal level of accountability within the European Union (EU) (Farneti, 2017) and especially so if such statements are

500 employees during the financial year shall include in the management report a non-financial statement containing information to the extent necessary for an understanding of the undertaking’s development, performance, position and impact of its activity, relating to, as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters, including” (Directive 2014/95/EU).

verified. However, the mandatory nature of the NFI statement is limited to only around 6,000 firms (Robert, 2017), including listed companies, banks etc., namely, public-interest European companies, that in general have already embraced non-financial reporting for several years (de Villiers et al., 2018), a drop in the ocean of over 21 million² companies operating in Europe. Furthermore, there is a distinct disparity in the levels of disclosure across EU Member States (depending how the Directive has been transposed in each country). As previously mentioned, auditing is mandatory in some, non-compulsory in others, and in some instances it constitutes a minimum requirement for statutory auditors to check whether the non-financial statement is provided or have an additional requirement to check whether the provided information is consistent with the financial statements. Companies in some EU countries also seek voluntary independent assurance (Krasodomska et al., 2021, p. 8).

Recital (16) of the Directive establishes that “Statutory auditors and audit firms should only check that the non-financial statement or the separate report has been provided. In addition, it should be possible for Member States to require that information included in the non-financial statement or in the separate report be verified by an independent assurance services provider”. Indeed art. 1 of the Directive specifies that “Member States shall ensure that the statutory auditor or audit firm checks whether the non-financial statement referred to in paragraph 1 or the separate report referred to in paragraph 4 has been provided. Member States may require that the information in the non-financial statement referred to in paragraph 1 or in the separate report referred to in paragraph 4 be verified by an independent assurance services provider”. Therefore, not only is there flexibility in how to report (which guidelines to follow) but also in any verification of such reports (de Villiers et al., 2018).³

In Italy, the Directive on the disclosure of information of a non-financial nature and information on diversity by certain firms and certain large groups has been transcribed by Decree 254/2016 (Legislative Decree No. 254/2016). Implementation of the Directive means the enactment of measures at national level, requiring conducts in line with the purpose set forth in said Directive. Decree 254 entered into force on 25 January 2017.⁴ In summary, with reference to the Italian context, the

²“Small, medium and microenterprises constitute 99% of all enterprises in the EU. There are around 21 million SMEs which employ around 133 million people and are an essential source of business and innovation, fundamental elements for the competitiveness of EU societies” (European Parliament, 2016, p. 1).

³Article 20 affirms that: “The statutory auditor or audit firm shall express an opinion in accordance with the second subparagraph of Article 34(1) regarding information prepared under points (c) and (d) of paragraph 1 of this Article and shall check that the information referred to in points (a), (b), (e), (f) and (g) of paragraph 1 of this Article has been provided”. As it will be later presented, there are also different types of “opinions” that can be issued (Assirevi, 2019, 2020).

⁴Article 3, paragraph (10) of this Decree states that “The body tasked with the external auditing of financial statements verifies that directors have prepared a non-financial declaration”; therefore formal verification of NFD is required. Paragraph 10 also states that “Said body, or any other specifically appointed entity authorised to perform external auditing certifies, in a special report,

NFI statement (1) must be audited and (2) the independent assurance service provider that performs the engagement states that has been prepared in compliance with relevant requirements of Decree 254 and with respect to the principles, methodologies and methods indicated in paragraph 10 of art. 3, Decree 254/2016.

3 Method

Empirical analysis is carried out according to the semi-structured interview method. Auditors are interviewed to develop the NFI statement attestation process. This is the fifth biggest Italian company in terms of independent assurance services provision. The firm has a long-standing history in this field and is closely involved in the auditing of non-financial information both for companies for which this activity is mandatory and for companies for which this activity remains voluntary. The audit company has listed and unlisted clients. It operates in various sectors. Two individuals from the identified firm were interviewed. Interviewee A is senior manager. Interviewee B is partner. Participants were required to provide their consent in order to participate in this study and were then provided with a detailed overview of the study.

The semi-structured interview method provides detailed data and information which may lead to generalizable conclusions. Semi-structured interviews (Farneti & Rammal, 2013) were held with key informants from a service provider to explore the research questions addresses in this study.

Interviews were based on a structure previously developed by the authors, linked to RQ and disclosed to firm interviewees a couple of days before they were held. With the consent of the interviewees, the interviews were recorded and later transcribed. The interview lasted about 70 minutes and took place in December 2020. During this interview two people with a key role in the assurance provider organization were interviewed. It provided a better understanding of NFI statement auditing, relevant issues and practices in Italy, as well as of changes implemented over time in relation to the audit. The interview guide was designed to ensure focus on central aspects of this study and coverage of all relevant topics (Momin & Parker, 2013). The other follow-up interviews took place in January 2021 and were developed as a follow-up to clarify some aspects. The questions asked during the interviews were designed to obtain information relevant to the research questions stated previously. Interviews were transcribed and then coded. This process enabled the identification of key issues and relevant aspects which were then classified. This process resulted in finding 22 relevant issues and aspects that were labelled with 22 codes. The parts of interviewees, with all the codes, were re-read and linked to

separate from the one required pursuant to article 14 of Legislative Decree no. 39, 27th January 2010, the assurance of submitted information with requirements of said Legislative Decree and with respect to the principles, methodologies and methods set forth in paragraph 3”.

Table 1 Link between research questions and themes^a

Research questions	Themes
(RQ1)	Guidelines for entity Guidelines for assurance service provider Relationships
(RQ2)	Materiality Risk-based approach Evidence collected Reputational risk
(RQ3)	Competences Training
(RQ4)	Evolution Assurance Engagement Report Evolution NFI

^aFollowing the limitations in the editing phase, the interview guide is available from the authors; they will send that via email upon request

each other in a large group to collapse codes. Eleven main themes emerge, and these are explored within the finding section (Farneti & Guthrie, 2009) (Table 1).

4 Findings

As to the (RQ1) concerning the contents of assurance engagement, with reference to the Italian context and the verification of the information contained in the NFI statement or in a separate report prepared by an independent assurance services provider, two themes emerge.

The first refers to the guidelines generally used by the companies for the preparation of the NFI and the guidelines used by the assurance provider. Despite regulatory openness, GRI guidelines are hegemonic. From the point of view of the assurance services provider, the dissemination of the GRI guidelines has positive aspects as uniformity facilitates the development of effective and shareable audit procedures. Interviewee B highlights how GRI diffusion is also considered a fact by Assirevi, the Italian Association of Audit Companies. In 2020 Assirevi updated the research document no. 232. Although it refers to the sustainability report assurance, it is acknowledged that the reference to the GRI is due to the high implementation and recognition in national and international context.

With regard to the assurance framework, the reference is to ISAE 3000 (revised). During the interview, Interviewee B points out the role of Assirevi which helps to ensure the quality of the audit processes (Research document no. 226, February 2019):

So we carry out the assurance activity with an integrated and structured approach, which we have also shared as a professional practice within the Assirevi association that represents us.

The second theme of interest is the relationship between the audited company and the independent assurance service provider. In compliance with the independence requirement, Interviewee B mentions the presence of the auditor in the key moments of the reporting process.

The reporting process is seen as a “path” a “process by phases” that leads to quality NFI. In this “walk”, an important role may fall on the management letter. Although it is not mandatory and is not always prepared:

At the end of the audit, it is good practice to issue a management letter. We tend to do it as an added value, it seems correct from a professional point of view to provide a whole series of elements that can be useful to the company that undertakes an ongoing improvement. I believe that the audit firm should precisely provide these types of indications and suggestions for helping to improve the process and also for improving governance.

By analysing the viewpoint of the assurance service provider, (RQ2) aims to understand how information is obtained through independent verification. We focus on the assurance process and procedures. The most significant topics that emerged relate to: materiality, from the perspective of companies audited and the audit service provider; the risk-based approach; the appropriate evidence collected during audit activities; and the reputational risk.

The starting point is to understand company's materiality because disclosure depends on the materiality analysis. An understanding of materiality passes through the analysis of the documentation that the company is able to produce; interviews are not excluded “precisely to have a reasonable view and knowledge of the method followed by the entity in the preparation of the Non Financial information”.

In this respect, Interviewee B emphasizes the opportunity to stimulate the sharing of materiality within the company:

The final materiality analysis also passes through the Board of Directors and risk committee approval. Also ethics code suggests this. As auditors, we always ask that these steps take place and be documented.

During the interview, the topic of exclusion of certain information from materiality was addressed. It has been emphasized that some topics are complex to deal with. The example cited is the tax issue, recently introduced in the GRI guidelines too. Interviewee stressed “*this is a sensitive issue because it is part of business ethics*”.

The evolution in the GRI guidelines recalls the need to update the materiality matrix annually and the related verification procedures.

Based on ISAE 3000 Revised, the auditor develops internal procedures that can be grouped into three macro phases: pre-assurance, assurance and then the issuance of the opinion. A key moment is the identification of risk areas related to the audited company, its internal control system and also its context:

Our approach is risk based. In the planning phase, starting from the materiality analysis, the risk areas and non-financial risks are identified, including those related to the industry, the supply chain and the territory.

The procedures used to obtain evidence are similar to those used in financial audits, although there is an important non-standardizable component. In addition to the acquisition of documentation, interviews are often carried out. For the elements mapped through the IT systems, extractions and cross-checks are carried out.

During the interview it emerges that auditors shall also take the reputational risk into account.

There are sources that provide on understanding the reputational risks associated with companies, products and people. We also use data analysis and other sources of information in order to better understand these situations and to identify if there are circumstances that can compromise reputation.

Process and/or quality certifications are assessed as part of the risk-based approach. Lastly, with regard to KPIs, the “specific and transversal” competences emerge as necessary elements.

The topic is related to (RQ3), i.e. understanding the skills and competences needed to perform assurance services. Interviewee B is in favour of “a multidisciplinary and integrated approach”.

The knowledge and background of an assurance service provider is different from that of the financial auditor. Skills are investigated within the “audit team”, and, in this, a fundamental element is “training”. Interviewee B highlights the complexity encountered in recruitment, even though the Italian university system is judged positively:

We do not always find people with curiosity and an aptitude for transversal learning. I must say that the Italian university prepares people with a much broader aptitude for transversal training than what I have seen, from experience, in other countries where instead they prefer more in-depth.

The use of external experts is less widespread and limited when dealing with highly technical topics.

The last part of the interview focused on (RQ4), gaining insight into future developments auditing. Here, the points that have emerged are the evolution towards reasonable assurance with the persistence of a double track, and some considerations were appointed towards the evolution of NFI.

Interviewee A assumes that reasonable assurance is accepted by the ISAE 3000 standard, by the Italian law, and it has also been suggested by Consob. Interviewee B highlights “to date the trend is towards limited assurance”. Indeed, reasonable assurance requires “an increased level of verification”. Finally, reasonable assurance needs “mature corporate reporting processes, able to demonstrate that the information has high quality and accuracy”.

Both interviewees agree that the double track will remain in use for further years to come. Interviewee B notes that:

The maturity of financial audit is obviously much more advanced than that of non-financial assurance, but in the 20 years of professional experience I have seen that there has been a very strong acceleration of information other than accounting

Returning to the issue of the double track between financial and non-financial auditing, interviewee B believes that:

If the auditor were the same for financial and non-financial assurance, a series of synergies and collaborative exchanges between the financial audit team and the non-financial audit team could occur; such that economies of scale and purpose also allow to obtain efficiency, both on company side and on auditor side.

From the point of view of the assurance service provider, the future of assurance vis-à-vis reasonable assurance will require: “the launch of very vertical checks that also provide for even more advanced skills than those used today”. Interviewee A specifies that: “these evolutions will allow the profession to evolve”. “In the sense that the auditor will acquire an increasingly broad and integrated vision of the business models underlying a responsible and sustainable creation of value, also through the use of technical knowledge very different from those typical of business sciences and with increasingly higher skills that they require studies and training investment”.

5 Conclusions

This study contributes to address the call by Power (2003) to gain details on empirical works undertaken by auditors into new areas and to unveil non-financial information assurance in a specific professional service firm provider, gaining insight into non-financial information assurance practice and relevant aspects (O'Dwyer et al., 2011).

The analysis enables the assessment of assurance methods and the identification of any limitations. A focus on the contents of auditor verification will enable the assessment of whether assurance is mostly a formal or substantial practice, influencing (proactively or otherwise) the preparation of future NFD.

The findings of our study are in line with recent findings of the Borial et al. study (2019). In analysing the auditors' perspective, Borial et al. found that: “The main standards in this area tend to be used as legitimizing tools to enhance the credibility of the assurance”. The professionals interviewed stated that the use of ISEA 3000 revised standard enables the audit process and represents “the higher reference” to adopt in undertaking the audit and as a consequence legitimizing the audit. Finally, the complex and multifaceted skills required to conduct sound non-financial information assurance and the virtual absence of recognized and substantial training programmes in this area undermine the professionalization of assurance providers.

The time has come for the assurance of non-financial information to become a standard practice, as we can gather by the recently released KPMG report (2020, p. 24): “The number of N100 companies investing in independent third-party assurance of their sustainability information has exceeded 50 percent for the first time since the KPMG survey began in 1993. This finding indicates that assurance of

sustainability information has now become a standard practice for large and mid-cap companies worldwide”.

The limited cases interviewed represent a limitation of this study; however, the model and methodological analysis may be applied to other interviews. Thus, future research is required to understand point of views of other assurance services provider.

Conflict of Interest No potential conflict of interests was reported by the authors.

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Critical Considerations on the Association Between External Assurance of Non-financial Information and Materiality Disclosure Quality in an Integrated Report Context



Romilda Mazzotta, Diego Mazzitelli, and Stefania Veltri

1 Introduction

The stakeholders' demand for a disclosure of organizational non-financial information (NFI) has greatly increased over the last few years, leading to the introduction of a mandatory disclosure of NFI for large organizations in Europe in 2014 with the 2014/95/EU Directive (European Union, 2014), hereafter EU Directive, transposed into the national legal system of the European state members since 2017 (CSR Europe and Global Reporting Initiative, 2017).

Reporting non-financial information is flexible. A company must show that it complies with the EU Directive or explain why not (*comply or explain*). Companies complying with the EU Directive have neither to follow reporting standards for NFI disclosure nor a specific reporting framework (European Union, 2017). In fact, while the law for producing financial information requires listed companies to adhere to the IFRS standards, there are no standards for legally complying with the EU Directive (European Union, 2014). Furthermore, in complying with these new requirements, the company can create separate reports or produce a single report disclosing both financial and NFI (Venturelli et al., 2019).

Companies are allowed to adopt Integrated Reports (IRs) as a non-financial declaration (NFD), and in this chapter, we focus on IR, a report aimed to integrate

All authors wrote the chapter, but their primary individual contributions are reflected as follows: Sections 2, 4, and 6 are to be ascribed to Romilda Mazzotta; Sections 3 is to be ascribed to Diego Mazzitelli; Sections 1 and 5 are to be ascribed to Stefania Veltri.

R. Mazzotta (✉) · D. Mazzitelli · S. Veltri

Department of Business Administration and Law, University of Calabria, Cosenza, Italy
e-mail: romilda.mazzotta@unical.it; diego.mazzitelli@unical.it; stefania.veltri@unical.it

disconnected financial and NFI into a coherent document according to the IR framework (IRF) (Dumay, 2020). We decided to focus on IR as, differently from traditional stand-alone CSR reports, it explicitly requires that NFI information disclosure have a strategy focus. This means that IR aims to reflect, at least theoretically, how a company creates value over time, and thus it should be more useful for stakeholders to have the complete picture of the actual and prospective capability of the firm to create value for its stakeholders (Biondi et al., 2020).

It should be underlined that the main aim of the EU 2014 Directive is to rebuild trust between stakeholders and businesses (La Torre et al., 2020). In this context, it becomes important to ensure the credibility of NFI (Mazzotta et al., 2020), and this has led to an increasing demand for auditors to provide independent assurance on NFI disclosures in order to enhance their credibility (Cohen & Simnett, 2015) and the reliability of the disclosed information.¹ Also at the political level, the EU High-Level Expert Group on Sustainable Finance (HLEGSF) outlines that “the ultimate ambition has to be convergence or integration of financial and non-financial or sustainability information, which should be subject to the same assurance rigour as audit requirements for financial information” (HLEGSF, 2018, p. 56). The necessity is particularly important for NFI considering the relative novelty of the mandatory disclosure of this information. It is also a complex task, more than for financial information, as for the character of NFI, qualitative and forward-looking with respect to the financial one (Veltri et al., 2020; Veltri, 2020).

Also in the IR context, the role of independent third-party assurance is crucial, as it can represent a positive process that increases credibility of the value creation of the organizations, also clarifying how it is defined (Corrado et al., 2019). Anyway, IR assurance is also a double-edged sword, considering that the absence of a specific assurance standard for IRs could negatively impact document comparability, thus limiting the ability of stakeholders to evaluate the quality of the information provided by the firms (Venturelli et al., 2019).

Furthermore, in the absence of assurance standards for NFI, assurers must refer to the assurance principles. For NFI, the most important principle is the materiality principle, meaning with it that an IR should disclose information about matters that substantively affect the ability of the organization to create value over the short, medium, and long term. There is an evident difference between the materiality purpose in financial and non-financial information, as testified in the recent article by Moroney and Trotman (2016). The biggest problem is the actually limited guidance on how auditors could assess the materiality of non-financial information for such reports, as the existing financial auditing standards do not include specific standards focused on the materiality role in the non-financial reports (Green & Cheng, 2019). Furthermore, current assurance standards for NFI and the IR

¹Credibility is a user-perceived attribute of information that engenders an attitude of trust in the information in the mind of the user (IAASB, 2016). The reliability of information (which is often referred as faithful representation) is affected by its balance and freedom from material error and could be enhanced by mechanisms such as robust internal control systems, stakeholder engagement, internal audit, and independent external assurance (IIRC, 2013a).

framework provide little guidance on what constitutes a strategic focus and its role in materiality judgments.

2 The Integrated Reporting Framework (IRF)

The concept of Integrated Reporting (IR) has been proposed and discussed recently in the literature by different scholars and practices, with the aim to improve the usefulness and efficiency of corporate reporting (Silvestri & Veltri, 2019).

At institutional level, the discussion has been heavily influenced so far by the International Integrated Reporting Council (IIRC) and its initiatives to develop an Integrated Reporting Framework (IRF). IRF was first published in December 2013 by IIRC following consultation and testing by businesses and investors in all regions, including 140 business groups and investors from 26 countries that participated in the IIRC Pilot Programme (IIRC, 2013a). The IRF's purpose is to establish guiding principles and a set of content elements to be included in a report able to integrate financial and NFI, also explaining the fundamental concepts that underpin them. These principles and concepts use integrated thinking as a way of breaking down internal silos and educing duplication (Guthrie et al., 2017). There are seven IIRF principles: (A) strategic focus and future orientation; (B) connectivity of information; (C) stakeholder relationships; (D) materiality; (E) conciseness; (F) reliability and completeness; and (G) consistency and comparability, established according to nine content elements – (a) organizational overview and external environment; (b) governance; (c) business model; (d) risks and opportunities; (e) strategy and resource allocation; (f) performance; (g) outlook; (h) basis of preparation and presentation; and (i) general reporting guidance (Veltri & Silvestri, 2015). The focus of IRF is the value creation processes of the company, that is, IRF aims to explain how an entity creates value, increasing, decreasing, and transforming its six capitals (financial, manufactured, intellectual, human, social, natural). The business model, one of the most important content elements of IR, illustrates how the business activities of firms create/destroy value by processing their inputs, that is, the six forms of capital. This means that the disclosure of the corporate strategy and of its business model is at the heart of the IRF and that only if the business model is interpreted and represented as the key element linking the strategy, governance, and performance of organizations it is capable of showing the organizational value creation process (Silvestri et al., 2017).

Anyway, despite the recent emergence of several studies on IR (Vitolla et al., 2019a; Veltri & Silvestri, 2020), IR assurance is under-researched. The next section analyzes this issue.

3 The Assurance of Non-financial Information in an Integrated Report Context: Specificities

As for the use of integrated reports, several questions have been posed about the reliability of the reported information (Eccles & Saltzman, 2011). With respect to investors' judgment and decision-making process, research shows that only credible information is accounted for in investment-related judgments (Healy & Palepu, 2001). In general, it can be assumed that external assurance of sustainability-related information influences perceived credibility. Using external assurance, companies seek to reduce information asymmetries and agency costs and increase the credibility of sustainability-related information (Huang & Watson, 2015).

The assurance of IR consists of a combination of typical financial analysis methodologies and other atypical approaches for NFI (Maroun, 2017, 2018). We focus on NFI assurance, as financial information already presents a high level of assurance, being a more mature and standardized practice (Corrado et al., 2019). As for the NFI assurance, the procedure for assuring this information was developed throughout the last decade with reference to assurance practices for sustainability reporting (SR) (Velte & Stawinoga, 2017). Opinions on the role of NFI assurance within are not converging. Some scholars (Eccles et al., 2012; Caglio et al., 2020; Quick & Inwinkl, 2020; Venturelli & Pizzi, 2020) provide evidence that assurance on SR has an important function in making reports more comparable and reliable and consequently increasing the trust of users who know an independent third party that reviews the information and the underlying reporting processes. On the other hand, other scholars (O'Dwyer & Owen, 2005) question the independence of the assurance exercise, owing to a large degree of management control over the assurance process. A recent study (Reimsbach et al., 2018) shows that, although the assurance of sustainability information leads to higher investor-related judgments, this assurance effect is weaker in the case of IR compared to separate reporting. The authors attribute this effect to a cognitive bias in decision-making, when assured financial performance and non-assured sustainability performance are presented in the same report.

Also the opinions within the literature on the usefulness of IR assurance (on both financial and NFI) are conflicting. Some authors (Flower, 2015) claim assurance is necessary to ensure "complete, correct and comparable information" and contrast the discretion entrusted to managers to hide negative information that can damage the company's reputation. On the other hand, some other authors underline the challenges that the assurance of IR pose to assurance providers, firms, and stakeholders. As regards the assurers, some authors underlined the inability of assurance providers to apply reliable methodologies and procedures to narrative and looking-forward information, arguing that the lack of non-financial and generally accepted standards makes it impossible to develop a complete materiality process and comparative analysis across organizations (Adams, 2015; Eccles et al., 2012). Some other authors focused on the lack of competence and experience of assurers as regards the assurance of NFI (Michelon et al., 2018). As regards the firms, some companies

could use IR assurance as an image-building tool, to increase their reputation (Michelon et al., 2015; Gürtürk & Hahn, 2015), instead of an accountability tool to enhance the credibility of disclosed information and thus the stakeholders' trust towards reported corporate information (Silvestri et al., 2017; Silvestri & Veltri, 2019).² Finally, some authors underlined the firms' use of assurance as a strategic tool to enhance their reputation with the complicity of assurers, underlining the lack of independence between the firms and the assurers (Bepari & Mollik, 2016). In our opinion, the question has to be approached from the stakeholder side (Manetti & Toccafondi 2012; Boiral & Heras-Saizarbitoria, 2020; Vitolla et al., 2019b; Tweedie & Martinov-Bennie, 2015), and it is no longer whether the assurance could increase users' trust, but becomes when an assurance answers to quality principles that make the IR a trustable document for the corporate stakeholders. There are several elements that should recur to identify a quality assurance. Among these, we can quote the degree of transparency of information provided by firms (Perego & Kolk, 2012); the guiding principles of firms, inspired to accountability instead of image-building principles (Silvestri et al., 2017); the independence between firms and assurance providers (Venturelli et al., 2019); and the materiality and completeness of NFI (Corrado et al., 2019). In the next section, we focus on the latter attribute, namely, the materiality principles within IR.

4 The Significance of the Materiality Principle for Non-financial Information in the Integrated Report

Among the IRF guiding principles, materiality plays the most important role.³ According to IIRC (2013b), "a matter is material if it could substantively affect the organization's ability to create value over the short, medium or long term." The IRF also states that companies should carry out a materiality determination process (MDP) "which is entity specific and based on industry and other factors, as well as multi-stakeholder perspectives" (IIRC, 2015). In other words, report preparers have to identify relevant matters, evaluating the importance of these matters, developing content, and deciding on the depth and frequency of materiality assessments (IIRC, 2015).

It should be underlined that the process of identifying material information is much more challenging in the NF context compared with the financial (Moroney & Trotman, 2016). When applied to the NFI context, the financial materiality methodology loses much of its utility, as it is impossible to employ the same quantitative

² Accountable in the text is used in the sense of "being answerable to stakeholders for the action of the organization" (Gray et al., 2014).

³ The notion of materiality is different for financial and NFI. It first developed, in 1970s, solely within local financial reporting contexts, and only in the 2000s it developed to cover NF reporting contexts as well (De Cristofaro & Gulluscio, 2019).

criteria for NFI as well. Furthermore, while financial reports are intended to provide information mainly to investors, non-financial reports address a broader range of participants, that is, stakeholders, and it may occur that a certain piece of information is material for a certain stakeholder and not material for another (Fasan & Mio, 2017).

As regards materiality in NF reporting, the current academic literature mainly focuses on sustainability reporting (Unerman & Zappettini, 2014), and academic studies on IR have only recently begun to consider materiality, both theoretically and empirically (De Cristofaro & Gulluscio, 2019). Comparing MDP within IR and GRI context, we can say that, while the final aim is the same (to select which issues to include in the report), the MDP is more subjective in the IR context, as while in an IR context, these inclusion decisions have to reflect the impact of the relevant issues on the organization's ability to create value in the GRI contexts – the focus is the sustainability impact, which is less subjective than the value creation process (CDP et al., 2016; Lai et al. 2017).

Of course, companies are different in applying materiality in their IRs. A recent paper (Cerbone & Maroun, 2020) has focused on examining differences in IR practices and reveals how a finance-centric market and professional logic interact with a stakeholder logic, leading to differences in the MDP. In other words, market-dominated firms have an internally focused approach to setting materiality which emphasizes value relevance for financial capital providers. On the other hand, where market logics are contested, materiality becomes an amalgamation of the factors which are important for shareholders and other stakeholders, and the emphasis shifts from compliance to providing a comprehensive account of the value creation process and how the business ensures long-term sustainability.

In the IR context, materiality is challenging for companies, investors, and assurers (Corrado et al., 2019). For managers the materiality challenge is in deciding which information they want to report and which they do not; in other words, managers have to choose to focus on what is most important to the business (IIRC focus) or on what is most relevant for a wider range of stakeholders in terms of environmental and social sustainability (GRI focus, GRI, 2013). Under the managerial focus, thus, it is likely that companies prioritize some of the capitals (mainly financial) over the others and that are not going to overly disclose details or sensitive information (Corrado et al., 2019). For investors, materiality challenge concerns if they are interested in any form of investor engagement or inclusiveness within companies in determining materiality for IR or if they are just interested that companies provide additional and more concise information for their decision-making process (Corrado et al., 2019). As for the assurers, the principle is especially challenging for assurers that do not have detailed knowledge of the business and are therefore not able to assess quantitative thresholds of NFI (Mio, 2013). The next section will focus on the association between materiality and assurance of NFI within the IR context.

5 The Association Between External Assurance of NFI and Materiality Disclosure Quality in the IR Context

There is a lack of research on the association between external assurance of NFI in IR and material disclosure quality (Gerwanski et al., 2019), and our research would like to fill this gap. Since the two most commonly used IR assurance frameworks, namely, AA1000AS and ISAE 3000 (Mio, 2013), apply the reporting principle of materiality, an external verification can be assumed to safeguard the quality of the materiality disclosure (Maroun, 2017).

The entire process of IR assurance is difficult, as the type of information reported in an IR can vary widely and the type of qualitative factors that influence materiality are less evident (Moroney & Trotman, 2016). While there are established norms for determining materiality in the financial reporting setting, auditors currently have limited experience with assurance in the IR context. Furthermore, there is currently limited guidance on how auditors assess the materiality of NFI for such reports, with auditors relying primarily on guidance provided in existing financial auditing standards. Furthermore, a feature of the IRF that distinguishes it from traditional stand-alone CSR reports is the explicit requirement that NFI disclosure should have a strategy focus, meaning that it needs to reflect how a company plans to create value over time. However, assessing the strategic relevance of NFI is often difficult as the impact of such information on financial value creation can be indirect and uncertain, requiring auditors to have a comprehensive understanding of a company strategy, in order to assess the potential impact of the misstated NFI in relation to this strategy, and current assurance standards for NFI and the IRF provide little guidance on what constitutes a strategic focus and its role in materiality judgments (Green & Cheng, 2019).

An audit difference is considered material if it is likely to influence the report user's judgments (Messier et al., 2005). To evaluate materiality, auditors assess the magnitude of the difference identified in their audit work in comparison with a benchmark amount. For financial items, this benchmark amount is usually determined quantitatively in relation to a financial outcome, most commonly as a percentage of net income (Eilifsen & Messier, 2015; IFAC, 2009). The auditors then take into consideration qualitative factors before making an overall materiality judgment (Ng & Tan, 2007). It is, however, much more difficult to apply the same procedure to NFPI, which cannot be meaningfully assessed against a financial benchmark (ICAEW, 2015). NFI can relate to a variety of non-financial capitals and resources and is measured in different units.

In our opinion, consistently with Green and Cheng (2019), in the absence of a viable quantitative benchmark, auditors need to pay even closer attention to the qualitative context surrounding the reported NFI to determine its materiality. Also, they need to examine the strategic importance of NFI, meaning the extent to which the NFI is important to the successful execution of a company strategy. This is because the <IR> framework recommends that companies report NFPI that can assist report users to understand how a company intends to create value in the

medium to long term. Furthermore, strategically relevant NFI has performance implications, as it can influence investors' assessments of the company's value creation potential and its future financial performance, but it is also critical under a management perspective, to the corporate resource allocation decisions (Cheng et al., 2015). Thus, we expect auditors to consider strategic relevance as an important qualitative consideration, even if the strategic importance of NFPI also may not be readily apparent to auditors, as the link between NFPI and a company's strategy is likely indirect and is subjectively determined by management.

6 Discussions and Conclusions

Recently, large European companies have undergone a progressive sensibilization to the theme of non-financial reporting, which culminated with the enactment of EU Directive 95/2014, requiring "large" European PIEs to disclose their non-financial activities annually, and transposed into the national legal systems for 2017. However, the EU Directive introduces a requirement in terms of principles but not in terms of reporting standards, allowing the firms to adopt IR as a non-financial declaration (NFD). The Legislative Decree 254/2016 introduced an obligation of assurance, which can be provided by the assurer in the form of limited assurance (review) or reasonable assurance (standard audit).

In the chapter we focus on the challenges of assurance in the IR context, a topic scarcely investigated within the IR literature and above all on the quality of assurance in the IR context. IRs need to provide credible information that meets the needs of report users such as investors and the materiality principle is the key to IR preparation; assurance of IR must deal with materiality determination process, going from the identification of relevant matter to the determination of the importance of relevant matters and to the prioritization of material matters, based on their importance. Since the materiality determination process requires a company to exercise a high degree of judgment, assurance can play a central role in order to confer reliability to the information disclosed in the IR and to increase reporter readers' confidence that the materiality determination process was properly implemented and that material issues were not excluded from the report because of some misjudgment (Mio, 2013).

Assurance providers have to face challenges when assuring an IR, which is a more difficult task as compared to the auditing of an annual report because of some characteristics intrinsic to IR. To date, not much is known about how auditors assess materiality when quantitative and qualitative performance information is provided in diverse forms. Furthermore, although it is known that qualitative factors have different effects on auditors' financial and non-financial materiality judgments (Moroney & Trotman, 2016), there is limited understanding about auditors' materiality judgments when responding to different types of information. In the context of IR, it is not possible to rely on quantitative thresholds to determine materiality; the materiality determination process is to a large extent subjective; IR provides

strategically focused and future-oriented information; IR needs to report on the performance of the company but virtually on all the entities that have some relationship with the company, not even legally ones.

Differently from both the financial and the sustainability reporting contexts, implementing materiality within the IR one is not about deciding what information to exclude, nor about identifying single impact on corporate sustainability: materiality is strictly connected to the very function preparers assign to the IR, that is, a matter that substantively affect the organization's ability to create value over the short, medium, and long term. This means that, for NFI included in IR, materiality should take a strategic meaning (Green & Cheng, 2019). Only in this way that IR will no longer be conceived solely as tools to manage impressions (Lai et al., 2017). The focal strategy cannot be short-lived, as greenwashing efforts tend to be, because the company would lose credibility if it disclosed strategies it failed to achieve. Since subsequent IR releases can be compared easily, this credibility issue would be evident, especially when the material matters related to the strategy include financial aspects, results of prior strategies, or KPIs measuring the impacts of management policies. This choice satisfies the need for criteria related to the materiality principle, in line with the IIRC requirements (IIRC, 2015).

Furthermore, if material information included in IR is carefully chosen, IR can become the primary document given to investors, particularly if traditional financial reports are difficult to read and comprehend. Of course, IR preparers should focus on fewer, more strategic issues rather than many issues, such as those covered by the GRI (Stubbs and Higgins, 2014). Materiality in this meaning is fundamental to the preparation of an IR report effective in combining a willingness to declare the company strategy with the effort to select relevant information to disclose. The literature provides evidence that assurance enhances the credibility of financial and NFI disclosed in IR, but this effect is much stronger when the quality of assurance improves, that is, when an accounting firm provides the assurance (Channunpipat et al., 2020) and when the assurance level is reasonable rather than limited (Quick & Inwinkl, 2020). To improve their credibility and usefulness, assurance providers need to change their practice towards NFI assurance and professional requirements (Boiral & Heras-Saizarbitoria, 2020). Actually, there are very few cases of IR subjected to reasonable assurance, and there are no recognized standards for IR assurance, but we believe that the possibility of adopting IR as NFD (that has to be assured) and the increasing importance of NFI could represent an opportunity both for the accounting association to define a set of rules (both EFRAG and IFRS foundation are working on the possibility of issuing European standards for NFI) and for assurers to create a competitive market, at least when more companies opt for a reasonable assurance. Nevertheless, assurance is one element able to ensure credibility to IR (Mazzotta et al., 2020), together with other internal assurance mechanisms such as corporate governance practices, internal audit, management processes, internal control processes, and risk identification processes which can act as complementary credibility-enhancing mechanisms (Richard & Odendaal, 2020), and future research directions could explore the effect of the corporate internal

mechanisms on IR material disclosure and assurance quality for stakeholder engagement (García-Sánchez, 2020).

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Part VI
The Role of CFOs and Controllers
in the Non-financial Reporting

The Role of CFO and Controller in the Non-financial Information Process: Preliminary Results from an Exploratory Study



Valentina Beretta, Maria Chiara Demartini, Elisa Rita Ferrari,
Andrea Tenucci, and Sara Trucco

1 Introduction

The financial performance undoubtedly represents a fundamental component in the life of businesses, but the company value is not limited to that. The value creation process involves many different aspects such as people, intangibles, innovation, competencies, environmental, and social factors. The chief financial officer (CFO), as well as the finance function or even the controller, plays an important role in the value creation process, influencing decision-making to different degrees at both the strategic and the operational levels (Zoni & Pippo, 2017). The CFO is no more the “bean counter” and its role is transformed. According to Mervyn King, Chair Emeritus of the International Integrated Reporting Council, “the CFO should be

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V. Beretta · M. C. Demartini

Department of Economics and Management, University of Pavia, Pavia, Italy

e-mail: valentina.beretta@unipv.it; mariachiara.demartini@unipv.it

E. R. Ferrari

Faculty of Economics and Law, Kore University of Enna, Enna, Italy

e-mail: elisarita.ferrari@unikore.it

A. Tenucci (✉)

Institute of Management, Sant’Anna School of Advanced Studies, Pisa, Italy

e-mail: a.tenucci@santannapisa.it

S. Trucco

Faculty of Economics, Università degli Studi Internazionali di Roma, Roma, Italy

e-mail: sara.trucco@unint.eu

known as the CVO—chief value officer” (Gould, 2020). Many chief financial officers are still caught in an old paradigm in which financial information and returns to shareholders are the primary measures of performance and success. A short-term mindset often results in narrow measures of value creation. Broader information on value creation covering critical assets such as people, data and key relationships, and environmental, social, and governance (ESG) factors are needed to serve all key stakeholders better and more sustainably. By delivering information on value creation, including on such strategic assets, CFOs can provide insight into a relevant part of enterprise value that is hidden from the balance sheet.

Nowadays wider competencies are required to the CFOs, at least in terms of digital knowledge and communication skills. Regarding the first, in the latest McKinsey Global Survey on the role of the CFO (McKinsey, 2016), finance leaders report that there are new demands on their time, such as digitizing critical business activities and managing cybersecurity, in addition to traditional finance duties. While these newer responsibilities present opportunities for finance leaders to differentiate themselves and their companies from competitors, many CFOs believe their companies are not yet prepared to manage these challenges. A confirm is provided in a joint report produced by PwC and the BHEF (Business Higher Education Forum) in 2017, according to which the 59% of finance and accounting managers declare that data science and analytical skills will be a requirement by 2021 in their fields (BHEF, Gallup, PwC, 2017).

Regarding communication skills, CFOs are increasingly pressured and involved in corporate reporting. They are challenged by the need to communicate complex issues to a variety of audiences (investors, financial analysts, customers, partners, and employees) as stakeholders demand more and more accurate and wider information and transparency in real time. If traditionally the CFO has to refer to the CEO, the shareholders, and the capital market as his most important stakeholders, nowadays he has to take care of a wider range of stakeholders. The central role is played by the CFO that must assure and maintain all business processes at maximum efficiency and performance by balancing the external and internal perspective of the business organization. Consequently, in many cases, CFOs could be required to further own the communication process in order to collect, monitor, and organize the disclosure of non-financial information with a multistakeholder approach.

Within this scenario, European Directive 2014/95/EU, also called the non-financial reporting directive, defines the rules on disclosure of non-financial and diversity information by large companies. What is established in this European Directive is that “in order to enhance the consistency and comparability of non-financial information disclosed throughout the Union, certain large undertakings should prepare a non-financial statement containing information relating to at least environmental matters, social and employee-related matters, respect for human rights, anti-corruption and bribery matters” (European Parliament and Council, 2014, p. 2). From 2018, companies are required to disclose non-financial information. More recently, as a consequence of the communication on the European Green Deal, the Commission is committed in the process to review the non-financial

reporting directive as part of the strategy to strengthen the foundations for sustainable investment.

In the context that has been traced, this research aims at exploring the role of CFO within non-financial disclosure (NFD) by means of three cases using pilot interviews. The broad research question we address is “What is the role played by the CFO (or controller) in the non-financial information process?”.

The chapter is organized in four sections. The following one deepens the introduction and contents of non-financial disclosure and presents the scant literature on the topic which includes the CFO or controller. Section 3 explains the research methodology employed, whereas Sect. 4 reports the main findings from the three cases. The last section develops the discussions and traces some preliminary conclusions from the evidence collected.

2 Literature Analysis

On the basis of what has been said in the introduction, questions need to be asked.

1. Corporate value is no longer only financial but has a much broader and multifaceted dimension. In order to represent this value, a lot of different information is needed. Who presides over this information?
2. The purpose of the non-financial statement is to represent corporate value as a whole and requires specific expertise. Could the CFO and his new role introduce the new information?
3. Could the CFO do it? Yes, he could, but to do so he needs to increase his skills in communication and digitalization.
4. So, could the CFO become a CVO?

We try to answer our questions by investigating what has been written and implemented in the literature and in current practice.

The changes taking place in the contemporary economic system are leading to an increase in the number of people interested in company performance. As a result, there is a need for a greater flow of information that companies are called upon to communicate in order to protect the interests and meet the information needs of those involved in their management in various ways.

One of the “themes” of the moment is certainly the new dimension of corporate communication: it is no longer sufficient to communicate financial data, but it is necessary to provide a series of non-financial information that allows us to clearly represent the overall corporate value.

The guideline increasingly shared by academia, practitioners, and regulators is that corporate communication must “go beyond” what it has been until now.

It must correctly represent corporate value in all its forms, and, by making it perceptible to the market, it must contribute to a “regeneration” through an information flow, both external and internal, that is transparent, intelligible, and reliable.

These new requirements have led to a progressive evolution of corporate reporting over the last 20 years, which has extended the boundaries of traditional economic and financial communication toward non-financial information.

Changes in the global competitive environment have stimulated the demand, from individual stakeholders, for more accurate and reliable communication processes regarding the sphere of non-financial information.

At the same time, various phenomena such as the recent financial crises have undermined the level of investor confidence in financial markets, highlighting the need for precise regulation of non-financial disclosure. In the context of such a socioeconomic context, the overall structure of corporate reporting has changed significantly, adapting to numerous external factors (De Villiers et al., 2017).

In addition to the traditional annual report, new communication tools have been progressively introduced that have expanded the boundaries of corporate reporting, ensuring a greater quantity and amount of information (Hall et al., 2015; Mitchell et al., 2015).

As part of this broadening, the first changes concerned mandatory disclosure with the introduction of specific regulatory obligations that led to a progressive expansion of disclosure (Incollingo, 2014).

In parallel, there has been an expansion of voluntary disclosure through the introduction of new forms of reporting with heterogeneous practices that have stimulated the production of various contents.

To really understand how disclosure and its boundaries are changing, let us try to define “disclosure.”

The notion of disclosure is usually associated with the explanatory-descriptive component of financial and non-financial communication, implemented by companies either voluntarily or in compliance with specific legal and/or regulatory obligations, aimed at disclosing information to the outside world.

Furthermore, disclosure should be understood as “disclosure,” i.e., disclosure of information that was previously confidential and otherwise unknown to stakeholders and not as simple document reporting (Dumay, 2016).

Although many studies try to delineate the boundaries of non-financial communication, there is to date neither a framework nor an agreed definition.

Some first argue that there is no convergence between academics and practitioners as the first ones define non-financial disclosure as “the set of all quantitative and qualitative data concerning business activities, the company policy pursued and its results in terms of output. . .” (Haller et al., 2017). Other interesting studies of a large number of papers published over the last 40 years also reveal the lack of a shared and unambiguous definition (Erkens et al., 2015).

Perhaps it might be interesting to give a definition of it, by saying what it is not, i.e., non-financial disclosure is a set of information that is not included in financial reporting, represented by qualitative and quantitative data (also expressed in monetary form) relating to all the choices, policies, effects, and risks of the company to be considered relevant.

In the context of the various reporting models and standards developed to date by doctrine and practice, who today would best meet this accountability objective? Certainly the non-financial disclosure.

It marks a moment of epochal change in corporate disclosure as it aims to consider the company not as a product of numbers and rules, whose purpose is only that of profitability, but to consider it as the output of a set of values, integration, sharing, and responsibility (Markota et al., 2017).

The directive aimed to reinforce the virtuous behavior of companies by increasing the level of transparency in the disclosure of non-financial information, in order to increase stakeholder loyalty. It also wanted to encourage the harmonization process through comparability (Manes-Rossi et al., 2018; Dumay & Dai, 2017).

About this point of view, the debate on the effectiveness of regulation compared with voluntary ESG reporting is retrieved in the studies of Stubbs and Higgins (2018). Chelli et al. (2018) found that legislation by the central government is more successful in making reporting credible than voluntary mechanisms.

This is the context in which the European Union chose to introduce mandatory reporting with the Directive on Non-Financial Disclosure.

Through this tool, the Union wanted to promote corporate accountability in order to foster stakeholder confidence (mainly investors and consumers) and business access to community resources (Campra et al., 2020; Cohen et al., 2015). Access to European funding is certainly a benefit for businesses but can be a lever to spread and improve greater and real transparency. Thus, while it is desirable for firms, it could translate into the diffusion of virtuous information disclosure behaviors (La Torre et al., 2018).

It has been implemented by the various EU member states with applicability, in general, starting from the financial years beginning on 1 January 2017. In the Italian context, it has been implemented by Legislative Decree 254/2016.

As regards the types of information to be disclosed, the non-financial disclosure provides for a minimum content of information relating to environmental, social and HR issues, respect for human rights, the prevention of active and passive corruption, and diversity. In addition, information must be provided on the company's management and organizational model, on the policies practiced by the company to pursue key non-financial performance indicators, and, finally, on the main risks arising from the company's activities, its products, services, or commercial relationships, including, where relevant, supply chains and subcontracting. In the event that the company does not provide adequate information on the areas expressly provided for, or does not implement any policy in this regard, explanations shall be provided on the basis of the "comply or explain" principle.

The non-financial disclosure can be drawn up according to one of the standards developed at international level and chosen by the company because it is considered more suitable for its characteristics.

From here follows the fundamental issue of materiality (D'Andrea, 2020).

In any case, regardless of the standard adopted, the information it contains must respect the principle of materiality, fairness, and clarity in order to ensure a comparison in time and space of the documents prepared.

The principle of materiality is the core of the reporting activity as it requires that the non-financial disclosure considers all relevant aspects, both for the company and for the stakeholders, as they can influence their evaluations as well as the organization's decisions, actions, and performance in the short, medium, and long term.

Regarding the principle of fairness and clarity, the information in the non-financial disclosure must not be misleading or characterized by omissions or even irrelevant. At the same time, it must be clear, be based on objective elements, and not be superfluous. In addition, the principle of consistency implies that the information disclosed should be consistent with the company's overall disclosures, including the management report. For the principle of systematicity, disclosure must be constant and regular so as to be comparable for the same company in different periods but also between different companies.

Despite EU's strategic intent in imposing the non-financial disclosure, an analysis of the contributions in the literature reveals that only recently have studies been launched that aim to analyze the actual behavior of companies in the very first years of the non-financial disclosure and the effectiveness of the new provisions compared to the voluntary forms of accountability that have occurred in recent years.

Precisely, a first study of 2017 (Venturelli et al., 2017) analyzes the level of non-financial disclosure of companies in the period before the introduction of the obligation to prepare the non-financial declaration. The research aims to assess the existing information gap and the necessary adjustments for companies according to the requirements of Legislative Decree 254/2016. The results reveal an information gap that the implementation of the directive could fill.

Another study (Doni et al., 2019) verifies whether the quantity and quality of non-financial information, voluntarily disclosed in the previous years to the coming into force of the directive, appear to be in line with what was then imposed with the mandatory disclosure obligation. The results show that companies need to improve the quality of non-financial information except for the representation of the business model.

A 2020 study (Veltri et al., 2020) examines the mandatory disclosure of non-financial disclosure in Italian listed companies, focusing on both the state of the art and the usefulness for investors. The results highlight the existence of a positive relationship between the quality of non-financial disclosure and firm value.

On the basis of these considerations, we argue therefore that the non-financial disclosure must provide a series of information on the whole company, on every aspect of its ability to create value and on the resources—mainly intangible—that allow it to maintain this ability over time.

Returning to our initial research questions, is the CFO a corporate actor who has the skills and, we would say, the aptitude to build an accountability system as desired in the non-financial disclosure?

Let us try to answer by reconstructing the role of the CFO but above all by outlining the new scenarios in which he must move.

Traditionally, the figure of the CFO was confined within the finance function, and he was recognized as the main person responsible for the financial reporting process (Mian, 2001; Geiger & North, 2006).

Nowadays, the role of the CFO among top management figures has changed significantly (Zorn, 2004; Farag et al., 2011) as the current economic and financial context has required a greater degree of flexibility and cross-functional skills from this specific figure.

In particular, from this study and from the demands of the context, it emerges that the CFO should possess organizational, strategic, and communication skills that allow him to act among the leaders of corporate governance.

Increasingly stringent reporting requirements and the growing need to communicate effectively and provide timely and complete information have significantly expanded the responsibilities of the CFO (IFAC, 2013; LeBlanc, 2012).

Furthermore, the need to provide economic and financial information that includes forecasts on the future performance of the company requires the CFO to participate in strategic planning activities (Zecchi, 2010; Mannozi, 2010).

The CFO is currently called upon to extend his functions by playing a more transversal role than in the past. Increasingly, he is the alter ego of the CEO (Allegrini, 2005) with more and more managerial skills. Indeed, some studies (Ge et al., 2011) have shown that the influence of the CFO on business decisions extends beyond the simple execution of directives provided by the CEO, and others (Chava & Purnanandam, 2007; Jiang et al., 2010) have shown that the influence of the CFO on company performance is even greater than that of the CEO.

According to new trends, the role of the CFO is the one that is experiencing the most significant evolution today. Responsibilities are expanding, new tools are available, and the way traditional tools are used is changing. Its position in business processes is changing because the way of doing business and communicating has changed. Globalization has imposed mechanisms of cooperation and competition for which CFOs have had to broaden their cultural horizons and compete on an ever wider scale; the speed of change has increased the level of risks associated with business management, and this has required CFOs to be able to handle complexity in business governance.

Moreover, today the CFO is no longer a hierarchical leader, but in his role must be prevalent the “culture of relationship” with shareholders and stakeholders in general, combined with the acquired ability to manage complexity.

The increased need for innovation and sustainability has required the CFO to create a model that allows the constant development of the company in the long term through the definition of growth strategies, managing risk—not only financial—and allowing an extended and integrated management of information that comes from all areas of the company and that must be selected and structured to build a secure source of competitive advantage.

The theme of integrated communication of information and the great investment that the CFO must make in this sense is even more confirmed by a prevision: in the next decade, the process of value creation in companies can be achieved by the CFO driving the “technological transformation,” in other words exploiting the potential of the digital era.

Ten years ago, the availability of data was the key element of development. Today the amount of data available is enormous; therefore the real challenge for the

CFO is to collect data in a meaningful way and above all define sets to understand how to define future strategies and create added value. Through this data the CFO must be able to build forward-looking metrics and share them across the organization.

This new dimension that the CFO should aim for seems to correspond to what is now known as the chief value officer.

In this new figure, many challenges arise to which the CFO, today more than ever, must respond but that really could not only allow the growth of this role but to identify the corporate actor able to fulfill the information needs that the non-financial disclosure wanted to impress on the corporate culture and accountability process.

The CFO of the future, i.e., the chief value officer, should therefore:

- Participate in the creation of the business model, implementing in the company an integrated approach between its various operating units and the resources that the organization uses, defining the objectives for sustainable development
- Oversee the governance of processes aimed at creating the entire corporate value and the conditions for its representation in non-financial information
- Analyzing the internal and external context, seen as an ecosystem, in which the company operates on the basis of criteria and indicators shared with stakeholders (competitive and synergistic landscape)
- Build and evaluate, in collaboration with the various managers of company processes and qualitative and quantitative measurement systems
- Integrate all available information—financial and non-financial—with an overall vision
- Promote the use of internal management tools and participation in the strategy, as well as establish relationships with stakeholders aimed at sustainable and mutually beneficial projects for the remuneration of all available resources
- Appropriately and effectively communicate the full value of the company inside and outside the company

3 Research Methodology

In order to address the aims of the research, an interpretive perspective has been applied. Our research is based on the researchers' observations grounded in their contact with the interviewees and the triangulation of this evidence with secondary sources (like public or internal reports) (Ryan et al., 2002). As the paper explores evidence that is not objectively observable but is created through the interaction with the actors' perceptions and understanding (Ahrens & Chapman, 2007), the research problem requires a qualitative approach. The paper is then based on interviews and, due to its exploratory nature, semi-structured-type interviews have been selected in the data collection during the case study execution. Case studies represent rich descriptions of particular instances of a phenomenon that is typically based on

multiple data sources with potential higher degrees of the richness and depth of data collectable (Yin, 2014).

Three case studies have been selected. All the three case study companies are listed on the Milan Stock Exchange market, having in common to fall within the characteristics of mandatory non-financial disclosure. The three are also all service companies: the first one in the management of an airport system, the second one in data-based services, and the third one in financial services. Moving from the two mentioned characteristics (NFD mandatory and service company), a list of potential companies has been created. From such a list, the three companies have been selected in relation to accessibility from the researchers and the availability of the interviewees.

The target of the interview is always an actor responsible or substantially involved in the process of non-financial information. Four actors have been interviewed. The controller, also responsible for the NFD, for the first company; the CFO and the director of investor relations for the second company; and the head of financial statements and sustainability, who is involved in the preparation of the NFD, for the third company.

The semi-structured interview is based on three parts. The first part mainly addresses the creation process of NFD. In particular it regards the competencies involved in the process, the definition of the owner (or who is responsible for pushing NFD within the company), the development of NFD, and the linkages between financial and non-financial information. The second part of the interview is focused on the effects and impacts of NFD both internally, meaning the consequences on internal control and the organization, and externally, meaning the impact on stakeholders. The last part of the interview is about the link of CFO and controller with respect to NFD. In particular it aims at investigating the involvement of CFO/controller in the process, the relationships between such non-financial information and the management accounting system, and the existence of a rewarding system related to non-financial information.

4 Case Study Analysis

4.1 Case Study 1: Alpha

“Alpha” is a firm listed on the Milan Stock Exchange market in the sector industry. The analyzed firm manages an important airport system.

The controller who was interviewed, through a pilot interview, is also responsible for the NFI. In particular, she pointed out that the mandatory nature of the NFD obliged the firm to reorganize some departments and to spread the “integrated thinking” culture among employees and even among external stakeholders. Although the process of preparation and disclosure of the NFI is time-consuming, the interviewee is aware of the strategic role of this document and its relative advantages for all stakeholders. Among the beneficial effects related to the NFI,

the controller reported an improvement in the relationships among different functions inside the firm.

4.1.1 Non-financial Information Creation Process

Alpha is a listed firm; therefore it is obliged to prepare and disclose the NFD, which is standalone. The analyzed firm has started to prepare the NFD just after the document has begun mandatory. During the first year of preparation of the document, the company asked for the support of one of the Big 4 audit firms for helping the client to identify the areas of materiality. During the following years, the company did not use any kind of external support for the preparation of the NFD, and the interviewee highlighted there are not any training specific courses regarding the preparation, techniques, and tools of the NFD.

In “Alpha,” the controller, every year, sends the previous NFD to every function; she gives them a timing within which each function should prepare their own paragraph. Therefore, the NFD is materially prepared by every single function which is involved in the document; then the paragraphs are assembled and verified by the interviewee and approved by the CEO (chief executive officer) with his/her signature. The CEO also writes the general introduction of the NFD. The final document is then approved by the whole board of directors and by the control and risk committee. The NFD is assured by one of the Big 4 audit firms through the limited assurance.

The controller who is also responsible for the NFD carries out a materiality analysis in order to identify the areas that may be of interest for stakeholders not only from a financial viewpoint. In particular, the analyzed firm has identified the following areas for NFD: environmental area, social area, human resources and human rights area, and fight against corruption. Inside each area, the firm has identified the pivotal topics; for instance, inside the human resources and human rights area, there is information regarding the employees, the hiring process, the percentage of female and male workers, the distribution of the salary in accordance with the percentage of female and male workers, and, finally, the topic of health and safety. Due to the pandemic emergency, each function has provided an introduction with regard to the implications due to COVID-19; therefore the controller would like to join all these parts and to create a unique introduction regarding the effects of the pandemic emergency to the several functions of the firm. This proposal must be approved by the CFO.

Inside the NFD, stakeholders may find some highlights which are the traditional economic and financial indexes linked to some qualitative and non-financial actions carried out by the firm; therefore for every action the single involved function looks for the connection with the traditional economic indexes (like return on assets, total revenues, and so on), and in doing so, the single function in the firm may ask some information to the controller within the area of management accounting. The controller, during the interview, suggested organizing a meeting with the involved functions after the publication of the final document in order to understand if they

have some tips for the improvement of it. Currently, the controller sends an email with the link of the NFD to the involved functions, and she thanks her colleagues in the preparation of the final document:

What we did last year was that I sent an email, so that the various offices knew that the NFD was published and I thank them, but in my opinion we would also need final feedback from the individual offices. For the moment, we have never had a subsequent meeting due to Covid-19, but we are organizing to do it. (Controller, Alpha)

From an organizational viewpoint, there are no yet responsibility centers regarding the area of NFI. However, before the pandemic emergency, there was the will to have an office, inside the department of the annual report, dedicated to the NFI; therefore there may be some changes in the organizational chart after the health emergency is over. The interviewee underlined that there are no yet economic incentives for the preparation of the NFD and there is not a plan for sustainability.

4.1.2 Non-financial Information Impact on the Organization

The interviewee stated that the preparation of the NFD highlights the relevance of both financial and non-financial objectives for the value creation, especially when the document has been audited by the external auditor, since auditors asked database and data to the client and each single function understood that the NFD could bring several benefits even for them. Indeed, the controller pointed out that the preparation of the NFD prompted every function to reorganize the office, the method of work, and the roles during the year. Furthermore, even some external stakeholders, for instance, suppliers, had to be certified for the quality; thus some benefits may be extended to external stakeholders:

The company and each office have understood the relevance of the NFD towards the external stakeholders, therefore they have reorganized. It is both an internal and an external reorganization. (Controller, Alpha)

The interviewee stated that the advantages of having NFD are more than the related disadvantages. On one hand, the only critical issue that the controller has identified is related to the fact that the NFD must be prepared along with the traditional annual report and some offices may be late in producing the document, especially last year due to the COVID-19 emergency. On the other hand, the predisposition of the non-financial disclosure brings several benefits to the firm. First of all, the collaboration among the various functions across the firm increases as well as the relative information flow. Second, the interviewee stated that new shared databases are created to support the preparation process of the final document. Third, the collaboration among functions improves the network and helps offices to internally reorganize. Finally, the controller pointed out that thanks to the NFD, she discovered new areas and she is now able to have a global overview of the firm; thus the preparation of this document brings the firm advantages in terms of an increase in the quality of information across involved functions and among internal and external stakeholders:

The NFD gives me a global vision of the company and I discovered areas I did not know, so it is certainly an important job for me and I like it. I have discovered so many things. (Controller, Alpha)

The controller feels that the employees of the firm have acquired new organizational and relational skills:

In my opinion the main new skills are interpersonal ones, because employees have to talk to each other and with the auditing firm, and organizational skills because many of them have developed their annual organization to do a great job at the end. They are all very sensitized on the subject and someone has seen some positive effects as the certification of suppliers. (Controller, Alpha)

With regard to the assurance of the NFD, the document is assured by one of Big 4 audit firms through the limited assurance. Audit firm verifies the reliability of the final document by performing tests based on the consistency analysis. The interviewee pointed out that it is relevant to introduce synoptic tables in the NFD to help auditors to identify, for each area, the relative risk and the policy able to reduce and minimize the risk. In doing so, auditors may exploit data and databases generated by SAP, which is the software used by the firm. SAP supports the integration between the area of financial accounting and the area of management accounting and between the financial information and the non-financial one. The interviewee highlighted that the internal auditors are not involved in the process of predisposition of the NFD. The internal auditors receive the final document assured by the external audit firm, and, after that, they publish the annual report along with the NFD.

4.1.3 Non-financial Information vs. Finance and Control Function

The information flow for the preparation of the NFD starts with the single functions and goes to the controller. The controller defines and communicates the timing to the involved functions across the firm. The timing, which should be respected by each function, is similar to the timing defined by the administration for the preparation of the traditional annual report. The controller, during the interview, pointed out that, sometimes, she sends some inputs to the involved offices. These inputs are especially linked to facilitate the reading of the document especially for the external stakeholders by introducing tables, graphs, and grids, since some offices are not used to creating tables and graphs. Indeed, tables, graphs, and grids are tools especially used by controllers and by the administration, and the controller is convinced that these tools may help the audit firm in the assurance activity and are useful for the assured firm to remain stable, in the form, during the years and among different functions:

Many tables and graphs have been created thanks to the NFD, but I think this is really a professional deformation of the controller and the administration area, because other offices are not used to creating tables. (Controller, Alpha)

In accordance with the controller's opinion, there is a connection between financial information and NFI, since several financial indexes or values shown in the traditional annual report are detailed in the NFD, by highlighting other useful

information regarding social, human, and environmental effects of that financial index/value. Finally, the controller sends the final document to the CFO and he/she carefully reads it. After that step, the CFO sends the document to the CEO who controls it and asks for clarifications if she/he needs it. The interviewee pointed out that the board of directors and the CEO consider information contained in the NFD as relevant and strategic one and not a mere bureaucratic fulfilment.

The controller also highlighted that the area of administration is not involved in this process of creation of the NFD.

4.2 Case Study 2: Beta

“Beta” is the second case company. Beta is an information provider mid-cap company listed on the Milan Stock Exchange since 2014. It employs 2,600 people in 45 Italian operational or commercial branches. The governance systems at Beta include a very independent board, with 8 independent directors out of 11 members. Also, nomination and risk control committees are composed of independent directors only. According to its directors, Beta is “black belt in all that is governance-related” (head of investor relations, Beta).

Both the CFO and the director of investor relations agreed to participate in the pilot interview on the role of the CFO and the controller in sustainability reporting, although the person in charge of the preparation of the non-financial disclosure for Beta is the director of investor relations.

Empirical findings provided evidence that the CFO and the director of investor relations are highly involved in the continuous improvement of the contents of the non-financial disclosure, which are aimed at issuing an integrated report including both financial and non-financial information in the medium term. Moreover, since the organizational culture on sustainability disclosure shows room for improvement, interviewees reported that they are committing themselves to the development of the awareness and the culture of sustainability throughout Beta. Among the beneficial effects associated with the non-financial disclosure, interviewees reported an improvement in ratings issued by rating agencies.

4.2.1 Non-financial Information Creation Process

Being mandated by law to report on non-financial information, Beta started the process of sustainability reporting in 2017, in order to comply with the Italian Legislative Decree 256/2016, issuing a standalone non-financial disclosure. Before mid-2018, the preparation of the NFD was under the CFO’s responsibility. After that time, the head of the investor relations changed its portfolio of activities to include the NFD preparation. The company decided to rely on a Big 4 accounting firm to trigger the entire process. However, Beta ignited the shift from compliance to value

creation in non-financial disclosure in 2019, after some market pressures, as clearly pointed out by the head of investor relations:

In mid-2019 we saw that some investors complained that despite being a beautiful well-managed company, everything is fine, they actually complained that the rating agencies had very low scores and from there we then followed a path that really started from scratch in which we exercised by helping us by getting [Big4 firm] to accept initially in which we actually started from scratch, the gap analysis between what we communicated, rating agencies, GRI, and what the market required, etc. and from there a very important work was done in the second half of 2019 which then crystallized with the NFD 2019, published in 2020. (Head of investor relations, Beta)

The increased relevance of non-financial information for Beta is driving an additional shift toward the adoption of the integrated reporting framework in the mid-term to provide a more comprehensive view of the company's performance:

in a couple of years (the integrated report) will have to be structured because the NFD will be more and more important and at a certain point one will have to have financial statements really integrated into it. But from A to Z. (Head of investor relations, Beta)

With regard to the roles committed to the preparation of the NFD, Beta is progressively committing to non-financial disclosure, since from 2018 the number of people working on sustainability management and reporting only has increased. As previously mentioned, from mid-2018, the head of investor relations has become the key person in charge of the preparation of the sustainability report, with two other managers reporting to him. The increased organizational focus on sustainability is also mirrored by the change in the name of the committee for risk control, which is now labeled as "committee for risk and sustainability control" (Fig. 1). According to the head of investor relations, the capabilities these people should show can be summarized in the "ability to interact with third parties, such as rating agencies, ability to summarize key achievement, and project management," which can also be acquired through training and specialized master programs.

However, all senior managers, and departmental "data owners," are involved in the preparation of ESG data, which is then included into the NFD of Beta. Moreover, in order to develop an organizational culture of sustainability, every department has identified its own "ambassador," i.e., "a person who reports to the first line, who is perhaps more available, who has a little more time who is involved on specific themes" (Head of investor relations, Beta). Employees are also involved in the identification of material topics, which are then summarized in the materiality matrix for the approval of the committee on risk and sustainability control and the final board approval.

Furthermore, the internal audit plays a pivotal role in assuring the consistency of the information included in the sustainability report, before the independent third party limited assurance.

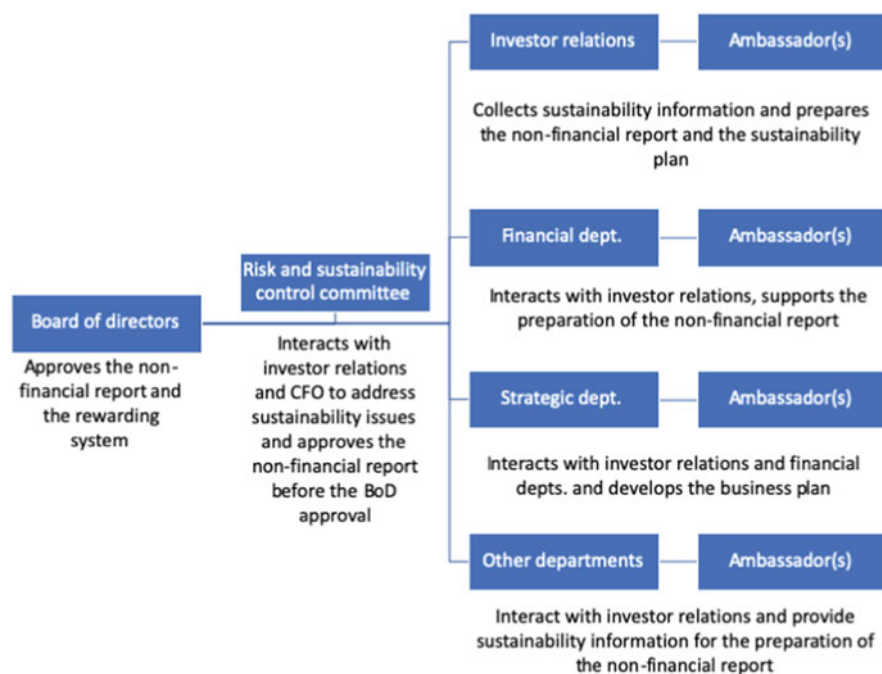


Fig. 1 The process of non-financial reporting at Beta

4.2.2 Non-financial Information Impact on the Organization

The effects of the non-financial information at Beta can be divided into internal and external effects. With regard to internal effects, the CFO identified a greater awareness on sustainability topics, which are becoming “standard practice” in the daily activities at Beta. The CFO exemplified this in the following:

The other day I was in a risk and sustainability control committee and we were talking about these issues with the colleague who reports to me with whom we are discussing electrical supplies in a certain [Beta] office we were comparing two suppliers but a prerequisite is that the sources are renewable energies so in one way or another. (CFO, Beta)

Also, the support from the internal audit department in the preparation of the NFD is providing beneficial effects in terms of quality of sustainability information, which is, according to the head of investor relation, a continuous improvement process.

However, some areas of improvement related to internal effects can be identified, according to the head of investor relations. To him, one of the main criticisms of the non-financial reporting process at Beta is the lack of standardized metrics to assess ESG performance. Some examples can be found in the assessment of the degree of sustainability of the supply chain of Beta, as well as the effect of Beta on climate change. However, different sustainability areas are suffering from a lack of managerial impact on specific social performance, such as the gender pay gap, which is

easy to measure, but hard to influence. Furthermore, the commitment toward the nourishing of a sustainability culture at Beta is producing less than expected positive outcomes. Results from an internal survey showed that 60% of employees have never read one of the Beta NFDs, while 40% of them did not know that Beta has a dedicated department for sustainability management and reporting. Hence, the case company has room for improvement with regard to the development of a widespread organizational sustainability culture.

External effects can be identified in the improvement in the ratings of Beta issued by rating agencies, which appreciate the effort committed by the case company toward sustainability management and its effective reporting. Moreover, investors and investor analysts are also upgrading Beta due to its sustainability performance as reported in the NFD.

4.2.3 Non-financial Information vs. Finance and Control Function

Preparing the NFD at Beta means putting together different areas of expertise.

Although the case company developed a sustainability plan, this is not integrated in the business plan yet. While the former is developed by the ESG team, the latter is prepared by the strategy team. Notwithstanding, these plans are discussed together and synergies are captured and considered in the development and implementation of the content of these two strategic documents. Thus, formal relationships between the CFO and the controller in the preparation and management of non-financial information are often replaced by informal ones, which bridge organizational holes. Hence, from supplier selection to the assessment of the fiscal transparency (GRI 207), the CFO, the controller, and the investor relator at Beta work as a team to deliver high-quality and relevant information to their stakeholders. As clearly argued by the head of investor relations, the departmental integration with regard to the management and reporting of sustainability practices is an ongoing process:

I coordinate the whole process of the NFD. However, where appropriate, I ask the tax advisor or controller directly to check the data and so on. But overtime this will be less and less sustainable and it will be increasingly necessary to have a single overview. (Head of investor relations, Beta)

The CFO supervises meetings involving staff from both financial and management accounting where (non)financial information is analyzed and discussed. However, non-financial targets are not necessarily monitored and reviewed during budget meetings, but in other less frequent meetings. Also, more informal channels are used to share non-financial information between different teams under the CFO's responsibility, such as the organizational intranet, a workplace channel, and ad hoc virtual meetings to present financial and non-financial performance. Furthermore, sustainability ambassadors meet up to share suggestions, opinions, best practices, and "horror stories." According to the CFO "In short, communication between departments within my team and within the company is essential and must be absolutely fluid."

The process of integration of different teams and the information they process are supported by the rollout of a common ERP tool, which is capable of providing consistent data throughout the group controlled by the case company.

Since non-financial targets are becoming more and more important, Beta introduced incentives in the rewarding system based on the achievement of non-financial targets too. At the time of data collection, indeed, the CEO had a 20% of non-financial targets. However, one of the issues in setting non-financial targets, as highlighted by the NFD preparer, is the lack of agreed-upon quantitative targets in the market, which could be conveniently adopted in the incentive and rewarding mechanism. Hence, non-financial targets are more subjective and qualitative compared to objective and quantitative financial targets. Notwithstanding, the CFO stated that the incentive systems at lower hierarchical levels will include non-financial targets too in the coming future, such as those identified below:

Reduce the average CO2 emissions of the car fleet, increase the percentage of direct purchases of energy from renewable sources, increase the number of women in managerial positions, increase the average number of training hours, obtain the 45001 health and safety certification, increase customer satisfaction, increase employee recruitment, obtain ISO 37001 anti-corruption certification and increase the percentage of users evaluated with ESG criteria, and finally increase the value of the services provided by ESG Solutions. (Head of investor relations, Beta)

This rewarding system is monitored and approved by the committee of risk and sustainability control, which then sends the proposal to the board of directors for their final approval.

4.3 Case Study 3: Gamma

The third case study is related to the company “Gamma.” Gamma is a bank listed on the Milan Stock Exchange market with more than 2,000 employees and more than 200 branches in different Italian regions, and it is subject to the obligation of the non-financial disclosure.

The pilot interview is conducted with the head of financial statements and sustainability, who has been in this role since September 2016 and who is actively involved in the preparation of both financial and non-financial disclosures.

Results of the interview pointed out that, even if the awareness of the importance of the topic has grown (especially in the last years, after the introduction of the Directive 2014/95/EU), some improvements (such as the informatization of the process) are still needed in order to guarantee the complete accuracy and comparability of data.



Fig. 2 Sustainability reporting process

4.3.1 Non-financial Information Creation Process

The company started reporting non-financial information in 2017, driven by the regulatory obligation. The planning phase started as soon as the law came into force. It was characterized by two steps: a first initial gap analysis to identify the requirements, followed by the development of a first reporting prototype. During these phases, ad hoc figures were recruited. In particular, the help of a consulting company has been particularly important to perform benchmarking activities against the main competitors in the banking sector who already, on a voluntary basis, prepared the sustainability report. Nowadays, apart from the regulatory obligation, the main driving force for the NFD is furthermore represented by the need for monitoring the sustainability plan, which has been approved by the Board of Directors in January 2020 and is integrated in the industrial plan. This helped the company to measure whether the sustainability behaviors and actions taken are actually leading to the pursuit of the related objectives that have been identified over the period of validity of the sustainability plan (3 years).

The introduction of the NFD facilitated the widespread culture of the relevance of non-financial information, which, in turn, allows people to reason no longer only by looking at the financial performance but also at non-financial items:

The non-financial reporting clearly has such particular specific elements that there was a corporate culture issue that had to be quickly filled. (Head of Financial Statements and Sustainability, Gamma)

At this purpose, the interviewee stated that the relationship between financial objectives and non-financial objectives is both explicit and implicit. An explicit relationship can be observed from the point of the mere drafting of the document, since there is a specific indicator of the GRI that requires to define how the value produced annually is distributed according to the categories of stakeholders identified. An implicit relationship can be observed, on the other hand, in the links between sustainability objectives and those with an economic and financial nature. Indeed, it is known that the pursuit of sustainability objectives contributes to ensure that even economic-financial objectives are more stably pursued over time.

Concerning the actors committed in the process, this is an activity that involves a wide range of both internal and external stakeholders. In particular, the definition of material issues is based on the stakeholder engagement activity, and, thus, they arise from the crossing of the prioritization made by different categories of stakeholders and the one made by the management. From the intersection of these assessments, the materiality matrix is then processed, and the various issues subject to reporting

are developed. Based on these themes, the GRI indicators are identified and eventually updated.

Internally, instead, as provided in Fig. 2, the board of directors has to approve the NFD and its update, and, therefore, it monitors and oversees the achievements of sustainability objectives. The main recipients of the reports are senior management and the risk and sustainability control committee which, within the board of directors, is the committee that has been appointed to oversee issues related to sustainability and monitor the achievement of related objectives. The board of directors is very attentive to the sustainability issues, and there is a lot of curiosity about them. Furthermore, there has always been a constructive dialogue and confrontation on these issues and ideas both from the board of directors and from the risk and sustainability control committee. Thus, consensus on the structure of the report has been achieved, thanks to this ongoing dialogue:

[. . .] until one day every manager is aware that beyond economic performance there are also certain sustainability objectives that must be pursued. (Head of Financial Statements and Sustainability, Gamma)

Given this active involvement, it is relevant to hire people in this area who are specialized not only in the preparation of financial reporting but also in the preparation of the non-financial disclosure. In doing this, obtaining the certification of the GRI can be considered as an indicator of the preparation and the knowledge of the candidate on the topic. However, there is not a single person who is full-time resource dedicated to non-financial reporting issues, since they are all transversal activities. Thus, to diffuse the culture of non-financial reporting within the organization, training activities are needed in order to get a minimum of familiarity with the construction of certain qualitative and quantitative indicators.

4.3.2 Non-financial Information Impact on the Organization

The main internal effects of the NFD are related to the increase in the awareness of the importance of the subject under analysis, while the external ones are represented by the advantages the company has gained in terms of visibility.

The actual objective for the non-financial disclosure is to improve year after year, by acquiring an ever-greater awareness of the importance of the topic and familiarity in collecting the data. In fact, the latter represent the two major criticalities that have been found along the years. First, at the beginning of the process, there was no culture of non-financial reporting. The company had to spread the importance of the topic across the whole central structure of the bank and also on its peripheral structure in order to be able to address this cultural issue and to increase its awareness. Second, data management remains one of the main challenges the company faces in collecting and reporting non-financial information. The interviewee stated that the information systems have been crucial both in the data collection and monitoring phase to provide reliable information, and, in the programming phase, the definition of specific internal regulations (such as roles and

responsibilities) was crucial to favor the management of data. However, the collection of relevant non-financial information is mainly done manually. Therefore, there is a strong need to collect the necessary information in a more secure, structured, and computerized way. Indeed, the future objective is to be able to find solutions that allow the simultaneous collection of both financial and non-financial data. This is strongly connected to the reliability of the data related to the non-financial information, which represents another important issue to be considered. In particular, the NFD of the company “Gamma” is subject to assurance by an external company to check the data veracity.

4.3.3 Non-financial Information vs. Finance and Control Function

The interviewee stated that there is a misalignment in the control of the two types of performance (financial and non-financial), mainly generated by the nature of the information itself. The information flows of the non-financial reporting mainly concern medium- to long-term objectives. Thus, they require longer times compared to financial objectives. Despite this implies little changes from one year to the other, there was a need to convert the annual monitoring of sustainability indicators into a more frequent basis. Following the development of the sustainability plan, the company moved to inter-annual reporting aimed at managing the initiatives aimed at achieving the objectives from a managerial point of view. Thus, at the end of each quarter during the year, performance trends are monitored and the reporting activity is planned. Despite there is no need to monitor sustainability progress on a monthly basis (as occurs for financial indicators), the aim of the future is to have an accounting scheme that could collect and summarize data both for financial and non-financial disclosures that allows an easier and more immediate monitoring of the progress in the achievement of related objectives. In particular, this is expected to be a common trend of all the companies with an integrated financial and non-financial reporting.

Concerning the interactions between the different areas within the company, the interviewee stated that there is mainly a constructive confrontation with the other professional figures involved in the reporting process to share future developments of sustainability projects. However, there is not a continuous interaction with the investor relator and the area dedicated to investor relations. For the future, an increasing involvement of the investor relator and the external relations is desired to find the most suitable channels to disseminate the bank’s non-financial information. From the interview emerges that internal stakeholders (such as employees) do not read extensively the sustainability report, despite the different activities for their involvement (such as surveys and focus groups). Therefore, it would be desirable to find channels able to improve the dissemination of the sustainability results both within and outside the company. In addition, finding channels that allow the communication with the financial interlocutors of the financial sectors and/or the rating agencies would be desirable.

Finally, concerning the incentives related to non-financial objectives, actually the first line, i.e., the CEO and the direct collaborators, are affected by incentives on a non-financial basis. In particular, as approved by the board of directors, within ten objectives that are assigned to top management, one or two are linked to sustainability achievements in qualitative terms for the moment:

We have not yet arrived at defining actual quantitative objectives which I would like to see as soon as possible because it is precisely with quantitative indicators that we are better able to measure performance also on aspects related to sustainability. (Head of Financial Statements and Sustainability, Gamma)

Quantitative targets are being defined for 2021 not only for top management but also for middle management. However, this is an issue that, according to the interviewee, would be developed in the future since a lot of attention has been paid to. Indeed, it is precisely with quantitative indicators that it is easier to measure performance also on aspects related to sustainability. However, the difficulty associated with the pursuit of quantitative objectives in the field of sustainability is high because they are mainly medium- to long-term objectives.

4.4 Summary of Findings

In light of the new context affecting the CFO's competencies and role, primarily referring to the digitalization era, the request for more communication skills, and the regulatory pressure for the disclosure of non-financial information, this chapter aims at broader exploring the role of CFO. With the use of three pilot case studies, we

Table 1 Summary of findings

	Alpha	Beta	Gamma
<i>Non-financial information creation process</i>	• Controller as the process owner • CEO commitment	• Director of investor relations' responsibility • Role of the "ambassadors"	• Head of financial statement and sustainability responsibility • Involvement of many functions
<i>Non-financial information impact on the organization</i>	• Internal reorganization of departments • Internal (and external) communication tool	• Diffusion of attention on sustainability • "External rating" influence	• Facilitator of non-financial culture • Reorganization in the collection of non-financial data
<i>Non-financial information vs. Finance and control function</i>	• Collection and organization of data supported by controller • No incentives	• Sustainability plan not integrated in business plan • Some incentives (no quantitative)	• Short (financial) vs. long (non-financial) objectives • Incentives for C-level

traced some insights on the potential role of CFOs in the NFD process. Table 1 summarizes the findings of the three case studies.

The first point to remark is that in all three cases, the NFD is a standalone report. In two companies (Beta and Gamma), the non-financial information is contained in the sustainability report, whereas in the other company (Alpha), it is a complete separate document dedicated. This is to remark on the importance and potential facilitating role of past corporate reporting experience prior to the introduction of mandatory information (Doni et al., 2019).

Concerning the NFD creation process of the three companies, the first point to note is about the NFD responsibility. In company Alpha the controller is the process owner, in Beta it is the director of investor relations, and in Gamma the formal responsibility is on the board of directors, as foreseen by the European Directive 2014/95/EU, even if the head of financial statements and sustainability monitors the process. We found a common sense of involvement in companies with respect to the process even if we recognize the major role of some players, such as the CEO in Alpha or the “ambassadors” in Beta.

Overall the three companies highlight the benefits from the adoption of NFD; Alpha has even promoted an internal reorganization in order to better answer the need of collecting non-financial information. The introduction of NFD clearly favors the internal communication process and the diffusion of a culture oriented toward sustainability, ESG, and SDGs. In a banking company, such as Gamma, the financial culture is much more widespread instead of the non-financial one. In Beta, probably due to the industry characteristics and its ranking culture, even if the diffusion on sustainability topics was successful, the preparation of NFD has been seen as a tool to get a better rating in the market.

The last point of interest covers the integration of NFD with the business plan and the existing control mechanisms already existing in the companies. In all three cases, we note an initial integration difficulty, for example, linked to the fact that there are no clear incentives related to non-financial measures. However, we also note that there is a strong will to make non-financial measures part of a common language and make them enter the corporate culture.

5 Discussions and Conclusions

From the three cases, we understood the wide range of possible information included in the NFD, recalling the importance of focusing on relevant, or material, information. Furthermore, we do not have to forget that in the field of non-financial reporting, the application of the materiality principle represents a challenging issue, because the amount of discretion in determining materiality is greater as compared to financial materiality (Guthrie & Parker, 1990). In such a context, the CFO could play the role of coordinator. This issue will be deepened in the following chapter.

In recent years, there has therefore been a strong push toward non-financial reporting by the European Union, and national governments have received the impulse. This trend, which arises from a regulatory basis, could be an opportunity for companies to communicate non-financial information, sustainability issues, and if and how they are contributing to achieving the SDGs. Overall, it is like moving from the question on whether and how many companies refer to the SDGs as mere citation (some authors speak of former “green washing” or nowadays “rainbow washing,” Izzo et al., 2020), or if they make the effort to define, monitor, and even provide internal objectives, as well as the results, linked to non-financial targets, such as SDGs.

While according to the more strictly environmental perspective some contributions are noted (Pasetti et al., 2018), research on the link between internal management, understood as the company’s attention to the wider sustainable development in the context of internal decision-making systems, and external communication, with a specific focus on non-economic-financial aspects, has still to come. With the three cases, we provided some preliminary evidence on the relationships between the internal and external perspective, i.e., management accounting and NFD, but further research is needed.

In conclusion of the chapter, we can affirm that the NFD is part of an evolution process in which many factors intervene and determine its final success: from the skills of the CFO (or controller) to the characteristics of the sector, from the degree of involvement of the CEO to the pressure of external stakeholders, from the presence of a pre-existing corporate culture to the organization itself. The role of the CFO is anyway crucial and, especially when has the responsibility on NFD, could represent the connector and a fil rouge for the success of the entire organization.

The three cases presented in the chapter should furthermore be seen in light of the latest development of the discipline and the laws. Recently, in April 2021, the European Commission adopted a proposal for a Corporate Sustainability Reporting Directive (CSRD), which would amend the existing reporting requirements of the non-financial directive. It is still under discussion, but it could introduce more detailed reporting requirements and a requirement to report according to mandatory EU sustainability reporting standards. Such revision could represent a new and tough challenge for the CFO.

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Non-financial Disclosure and Materiality: Exploring the Role of CFOs



**Maurizio Cisi, Mara Del Baldo, Alessandro Marelli, Federica Ricci,
and Vincenzo Scafarto**

1 Introduction

In the last few decades, the growing attention to corporate sustainability along the three pillars of environmental, social, and economic sustainability (Lee & Yeo, 2016) has brought non-financial disclosure (NFD) into widespread use. There are several frameworks and standards that inform corporate NFD such as those issued by the Global Reporting Initiatives (GRI, 2013, 2016), AccountAbility (2006), and the

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M. Cisi

Department of Management, University of Torino, Torino, Italy

e-mail: maurizio.cisi@unito.it

M. Del Baldo

Department of Economics, Society and Politics, School of Economics, University of Urbino

“Carlo Bo”, Urbino, Italy

e-mail: mara.delbaldo@uniurb.it

A. Marelli (✉)

Faculty of Political Science, University of Teramo, Teramo, Italy

e-mail: amarelli@unite.it

F. Ricci

Department of Law and Economics of Productive Activities, Sapienza University of Rome,
Rome, Italy

e-mail: fede.ricci@uniroma1.it

V. Scafarto

Department of Human, Social and Health Sciences, University of Cassino and Southern Lazio,
Cassino, Italy

e-mail: v.scafarto@unicas.it

International Integrated Reporting Council (IIRC, 2021) by establishing a set of guiding principles, which include the materiality principle.

Materiality is a multifaceted concept which originates from the field of financial accounting and auditing and generally refers to the need to provide relevant information to users of corporate reporting (Bernstein, 1967). It serves both as a guiding principle for identifying information that is of relevance for the users of corporate reports (e.g., minimum of required information) and a limitation to the amount and detail of information presented in order to avoid information overload (Baumüller & Schaffhauser-Linzatti, 2018).

Presently, nonfinancial disclosures (should) also heavily rely on judgments about materiality. Torelli et al. (2020) argue that materiality is the driver through which companies can select issues to be included in sustainability and integrated reports with an aim to address the needs and expectations of all stakeholders. However, in the realm of non-financial information, the application of the materiality principle is even more challenging than in financial settings (Guthrie & Parker, 1990). As Mio (2013) argues, non-financial information seeks to capture a broader concept of value creation and is not always quantifiable, and even if the impact of a nonfinancial issue might be quantified, it is not possible to establish a unique “threshold” because it may affect more than one form of capital (e.g., financial and non-financial). Additionally, NFD is per se intended to address a broader array of stakeholders who may have heterogeneous information needs, which makes it more difficult for companies to determine which non-financial issues deserve disclosure. Standard setters and accounting professionals have in fact highlighted the challenges associated with implementing materiality in non-financial information (IIRC, 2021; CDP et al., 2016). These include aligning the materiality determination process with regulatory frameworks and providing a balanced view of the issues that appear to be material to the company on the one hand and to external stakeholders on the other. Also, differently from financial information, NFD does not involve reporting misstatements but requires selecting the issues that have the strongest sustainability impacts. As a result, the relative importance attached to nonfinancial issues may vary even substantially between individual firms and industry sectors (Eccles et al., 2012) as well as between different frameworks and standards for materiality assessment (Edgley et al., 2015). This suggests the need to study the materiality assessment process in the organizational contexts in which it occurs.

Over the recent decades, a host of research studies have emerged that analyze the issues associated with non-financial information disclosure in general and with the application of the materiality principle in particular. Research has also sought to establish the business case for nonfinancial information disclosure. Several works suggest that capital market participants react positively to non-financial information disclosure (e.g., Barth et al., 2017; Knauer & Serafeim, 2014; Zhou et al., 2017). Furthermore, a study by Ernst & Young (2017) finds that 68% of investors consider nonfinancial information as important in their decision-making. However, other studies reveal that non-financial information disclosure is costly and may even negatively affect firm value (e.g., Lee & Yeo, 2016).

The empirical research specifically devoted to the application of the materiality principle in non-financial information disclosure has focused on analyzing the extent to which companies disclose material nonfinancial information (e.g., Jones et al., 2016), the internal and external factors that influence the quantity and quality of material nonfinancial information (e.g., Fasan & Mio, 2017; Torelli et al., 2020), and whether the application of different reporting frameworks leads to prioritizing different material topics (e.g., Mio et al., 2020).

There is instead a shortage of qualitative studies that investigate how the principle of nonfinancial materiality gets defined and implemented in practice. A few studies investigate the materiality determination process in IR contexts (Stubbs & Higgins, 2014; Lai et al., 2017) by focusing on who is involved in defining materiality and who are the primary intended recipients of NFD, while Farooq and de Villiers (2019) and Sentuti et al. (2020) examine how the materiality process is carried out in sustainability reporting settings.

In an attempt to fill this research gap, this chapter explores, through a case analysis of two Italian listed companies issuing sustainability reports, how the materiality determination process takes place by engaging the organizational actors involved in this process with a particular focus on the role of the CFO/controller. Given the exploratory nature of this research, semi-structured interviews have been used to explore the activities and the steps characterizing the materiality process of NFD. The key research questions driving this investigation are the following: (RQ1) Who participates and, in particular, which is the role of the CFO/controller in the materiality determination process underpinning non-financial information disclosure? (RQ2) Whose information needs are primarily addressed when determining what is material or not?

Italian listed companies provide an interesting setting for our research purposes because in Italy from the 2017 financial year onward the legislative Decree no. 254/2016 (enacting the European directive 2014/95/EU) requires “public interest companies” (PICs) to integrate statutory financial statements with a disclosure of environmental, social, and governance strategies. Thus, non-financial reporting has moved from a voluntary to a mandatory perspective, and Italian PICs now have to determine what information is material regarding the issues indicated in the decree.

The remainder of this chapter is divided into the following sections: Sect. 2 presents a literature review; Sect. 3 describes two case studies, the first case study is Iren, an Italian listed company which operates in the energy sector, and the second case study is Biesse Group, an Italian listed company leading in the field of wood and glass processing. Finally, Sect. 4 outlines conclusions, the research limitations, and suggestions for future research.

2 Materiality in Non-financial Information Disclosure

Materiality has long been regarded as a fundamental concept underlying the production of financial reports and accounts (Edgley, 2014; Messier et al., 2005; Calabrese et al., 2015). In the realm of financial reporting, materiality represents a guideline to assist practitioners in determining whether an item should be included or not in financial reports based on its relative importance. The principle is also intended to guide audit practices which must filter and guarantee information in a manner that ensures true, fair, and useful representation of the company's financial situation, in support of capital protection, risk management, and decision-making (Edgley, 2014). The International Accounting Standard Board (IASB) defines an information as material if "omitting or misstating it could influence decisions that users make on the basis of financial information about a specific reporting entity. In other words, materiality is an entity-specific aspect of relevance based on the nature or magnitude, or both, of the items to which the information relates in the context of an individual entity's financial report." To further clarify the practical relevance of the materiality principle, the IASB states that the "disclosure of immaterial information can impair the understandability of material information that is also disclosed." This makes it explicit that an effective implementation of the materiality principle reduces the scope for information overload.

The concept of materiality has been adopted in the field of non-financial information relatively recently, in response to a growing demand for reliable and useful information on how companies address the societal call for sustainable business conduct (Hahn & Kühnen, 2013). Similar to the definition of materiality in financial reporting, the available definitions of non-financial materiality focus on whether an information item affects the decision-making process of its recipients. For instance, in the context of sustainability reporting, the Global Reporting Initiatives guidelines (GRI, 2016) refer to the following notion of materiality: "Relevant topics (...) are those that can reasonably be considered important for reflecting the organization's economic, environmental, and social impacts, or influencing the decisions of stakeholders." The usefulness of non-financial information represents one major concern because, due to the heterogeneity of information available and possibly of relevance for the recipients of non-financial disclosures, the scope for information overload is greater than in financial ones, which cover a much narrower range of issues and impacts (Baumüller & Schaffhauser-Linzatti, 2018). Additionally, the concern exists that companies use NFD to rhetorically project an image of sustainability that differs from their actual behavior (Unerman & Zappettini, 2014), which is often referred to as "greenwashing."

As compared to financial information, determining the materiality of non-financial information is inherently more challenging because the impact of a non-financial issue cannot be assessed by quantitative criteria as for financial materiality. As Mio et al. (2020) point out, differently from financial reporting, objects represented by non-financial disclosures cannot be "priced" in an efficient market, which makes it complex to quantitatively assess how it is worth a death in

the workplace or the damage of firm reputation. Furthermore, the potential users of non-financial information are more heterogeneous and may have different expectations regarding NFD (Fasan & Mio, 2017; Mio et al., 2020); consequently companies strive to determine what information deserves to be disclosed.

Differently from financial information, the non-financial information that is considered “material” for disclosure may vary even substantially between reporting companies depending on the industry sector, the strategy, and the business model. This is because non-financial information does not involve reporting misstatements (i.e., errors, omissions) as in financial reporting contexts but rather selecting the issues that have the strongest impacts on corporate sustainability (CDP et al., 2016). As such, the materiality determination process tends to be highly firm-specific because it will ultimately reflect the (subjective) judgment of the organizational actors involved in the social construction of materiality (Eccles & Youmans, 2016). This is why scholars are calling for more qualitative research which analyzes the process through which practitioners collectively come to make and implement this judgment (Stubbs & Higgins, 2014; Lai et al., 2017).

Finally, non-financial materiality may vary between companies following different NFD frameworks, because some frameworks such as the integrated reporting (IR) framework tend to prioritize the information needs of capital providers focusing on non-financial issues which have financial consequences, while others such as the Global Reporting Initiative (GRI) are more stakeholder oriented (Mio et al., 2020).

2.1 Non-financial Materiality in the International NFD Frameworks

As non-financial information disclosure (NFD) has become widespread in the past few decades, several NFD frameworks and standards have been developed to guide companies in determining whether a particular impact or outcome is sufficiently material, against the overall operations and impacts of the reporting organization, to be disclosed (Unerman & Zappettini, 2014). Although an overall discussion of the existing NFD frameworks goes beyond the scope of this chapter, it is worth outlining at least two major frameworks and their approach to materiality determination, namely, the Global Reporting Initiative (GRI) and the International Integrated Reporting Council (IIRC) frameworks.

The GRI and IIRC both provide guidance for the materiality determination but with different scope and audience.

The GRI guidelines essentially provide guidance for the production of sustainability reports (SR) and define material topics as those reflecting “the organization’s significant economic, environmental and social impacts; or that substantively influence the assessment and decisions of stakeholders.” Diversely, the IIRC defines material topics as those that “substantively affect the organization’s ability to create value in the short, medium and long term” (IIRC, 2021, p. 29). GRI guidelines put

the materiality principle at the very heart of SR by recommending the provision of information on matters that are critical to the achievement of sustainability goals especially for their impact on the environment and society.

The GRI has detailed the process of materiality determination in GRI G4 version of its guidelines, which have then been updated and incorporated in the current GRI standards (2016). This process revolves around a materiality analysis implying that material topics should be ranked from less to more important and on the identification of those topics which have a higher priority from a stakeholder perspective. As such, SR is intended as a pivotal tool for communicating with stakeholders about how companies are performing against strategic environmental and social goals (Jones et al., 2016).

Since it requires making judgments on a number of matters in relative terms, materiality in SR is regarded as a process involving selection, inclusion, and (critically) exclusion of information (Unerman & Zappettini, 2014). Specifically, GRI describes a process including four steps that SR preparers should follow in order to comply with the materiality principle, namely, “identification,” “prioritization,” “validation,” and “review.” Identification of material topics involves recognizing and listing the actions that may impact on the company’s environmental social and economic performance. Prioritization involves ranking the identified topics based on their significance from an internal and external perspective. This crucially relies on a company’s ability to identify the interests of different stakeholder groups because only if the information needs of each group is captured, companies could provide material information to their heterogeneous audience. Validation involves the approval of the topics identified as material on behalf of internal senior decision-makers and ideally by external stakeholders. Finally, the review step is carried out after the integrated report (IR) has been published as a basis for the next reporting period. It involves gathering feedback from stakeholders with an aim to understand whether the SR disclosed actual material information and provided a balanced picture of corporate sustainability performance. The process should result in a materiality matrix which depicts how material topics rank across two dimensions, namely, their influence on stakeholder assessments and decisions and the significance of a company’s social, environmental, and economic impacts. The materiality matrix thus showcases the relative importance of different material topics and how they are ranked against each other (see Puroila & Mäkelä, 2019).

The IR materiality determination process has been originally outlined by the IIRC in 2013 in its background paper for IR about materiality (IIRC, 2013) and has been incorporated in the current IR framework (IIRC, 2021) released in January 2021. Under the IR framework, companies are encouraged to disclose information about their strategy, governance, performance, and prospects in a manner that reflects the commercial, social, and environmental context within which the company operates (Green & Cheng, 2019). Veltri and Silvestri (2020) argue that the IR represents the current frontier of corporate reporting with an aim to overcome the limits of traditional corporate reporting and provide stakeholders with a concise and complete information on the prospective capability of a firm to create value. The term

integrated report (IR) itself makes explicit the intended outcome to provide a reporting model that combines financial and non-financial information into a single report.

According to the IR framework, the materiality determination process should be mainly driven by strategic concerns and as such requires the involvement of the senior management and the bodies charged with governance. Departing from the GRI framework, the IIRC (2021) specifies that the information to be disclosed in IR needs to be material (primarily) to the providers of finance capital. This simplifies to a great extent the whole materiality determination process. The IR framework then outlines four steps that companies ought to follow in their materiality determination process (IIRC, 2021, p. 29): first, identifying material matters, based on their ability to affect the company's value creation potential; second, evaluating the relative importance of material matters, which involves considerations regarding the magnitude and probability of the matter; third, prioritizing the material topics based on their relative importance; and fourth, determining the information to disclose about material matters, which requires the exercise of judgment and a regular engagement with providers of financial capital and other stakeholders to ensure that the IR meets its primary purposes.

Differently from the GRI framework, the IR framework not requires companies to provide a materiality matrix, essentially because plotting material topics according to their importance to the organization and importance to stakeholders would be inconsistent with the IR notion of materiality, which revolves around value creation over time mainly from the perspective of capital market participants.

Materiality is also one of the fundamental principles of the nonfinancial information regime introduced by the European directive 2014/95/EU (also known as the non-financial reporting directive (NFRD) as an amendment to the accounting directive 2013/34/EU). Art. 19a, as introduced by the NFRD, talks of "information (...) necessary for an understanding of the undertaking's development, performance, position and impact of its activity, relating to as a minimum, environmental, social and employee matters, respect for human rights, anticorruption and bribery matters (...)." According to Baumüller and Schaffhauser-Linzatti (2018) who have analyzed the various aspects of non-financial materiality covered by the NFRD, the provisions of art. 19a consider as material, for NFD purposes, only information that aligns the financial perspective on the company with its impact from the stakeholders' perspective, such that information that refers to certain impacts but is of no financial relevance is not covered by the reporting obligations. Thus, the NFRD establishes a regime for assessing materiality that borrows from the SR framework the notion of a company's impact on a broad range of stakeholders but with a much narrower focus because, similar to the idea of materiality in the IR context, more prominence is given to the perspective of financial capital providers (e.g., Baumüller & Schaffhauser-Linzatti, 2018).

Although the NFD frameworks referred to above differ in the underlying notion of materiality, they all consider the determination of materiality to be a complex multistep process that requires the exercise of subjective judgment and cannot be addressed by simple checklist-based approaches. This raises the question of how

materiality judgments are made in practice, which leads to focusing on the organizational process by which the actors involved in the production of nonfinancial information collectively come to share and implement these judgments (Lai et al., 2017).

2.2 Prior Research on Non-financial Materiality

Most of the existing research on non-financial materiality has focused on the internal and external determinants of materiality disclosure, typically relying on content analyses of company reports and formal documents rather than engaging directly with companies. Overall these studies indicate that: industry play a key role in the decisions regarding the type, the quantity, and the quality of materiality disclosure (Mio, 2013; Fasan & Mio, 2017), arguably because of the different pressures from regulators, public opinion, and stakeholders in general; that firm-level characteristics such as board size and gender diversity may affect materiality disclosure (Fasan & Mio, 2017; Gerwanski et al., 2019); and that the quality of materiality disclosure may increase over time due to some kind of learning effect (Pistoni et al., 2018; Gerwanski et al., 2019). Additionally, studies show that stakeholder engagement in the materiality determination process is fundamental to achieve a high level of materiality in NFD and good report quality for stakeholders (Torelli et al., 2020).

Studies also show that non-financial materiality differs between companies following different NFD frameworks. Based on a case study analysis of a global assurance company which was an early sustainability reporter and later a pioneer in the implementation of the IR framework, Mio et al. (2020) show that the material topics identified according to the sustainability reporting (GRI) approach to materiality are significantly different from the material topics identified according to the IR materiality approach. Specifically, the case analysis suggests that the IR approach to materiality is mainly driven by a market logic and prioritizes the information needs of the providers of financial capital (the main addresses of IR) focusing on the financial effects of non-financial (e.g., environmental and social) issues, whereas the GRI approach to materiality is more stakeholder oriented and as such is more affected by the stakeholder engagement process.

Researchers also point out that non-financial materiality is an ambiguous concept because the potential users of non-financial information are more heterogeneous than in financial reporting, and therefore different user groups may have different expectations with regard to NFD. Reimsbach et al. (2020) investigate in an experimental setting the perception of non-financial materiality between two different stakeholder groups (capital market participants and potential employees). They find that potential employees perceive non-financial information such as energy consumption and biodiversity as generally more material than capital market participants. The authors conclude that non-financial materiality is stakeholder-dependent and lies in the eye of the “beholder” (e.g., the potential users of NFD) and call for more research that analyzes non-financial materiality from a user perspective. Indeed, to date, only a

handful of studies exist that take a user perspective (e.g., Deegan & Rankin, 1997; O'Dwyer et al., 2005). For instance, Moroney and Trotman (2016) analyze materiality from the perspective of assurers and report a different understanding of materiality by assurers confronted with financial versus non-financial information, while Edgley et al. (2015) reveal a different understanding of materiality between accounting and non-accounting assurers.

However, to date, there appears to be a dearth of qualitative research analyzing the process by which non-financial materiality gets defined and implemented in practice by engaging the organizational actors involved in this process. One notable exception is the study by Lai et al. (2017), which, based on a case analysis of a global assurance company that was an "IR pioneer," explores the meaning that practitioners attach to the principle of materiality by focusing on who participates in determining IR materiality and to whom the IR is addressed. This analysis relies on in-depth interviews with the organizational actors charged with the task of drafting the report (named the Group Integrated Reporting & CFO Hub) and other key informants involved in determining and approving its contents. The findings reveal that, in the case company, the IR materiality content is determined on the basis of the strategic priorities set (at corporate level) by the top management, such that any information that reveals the corporate strategy is considered material and deserves to be included in the IR. As such, the IR is primarily conceived as a tool for communicating the strategy to capital providers. The research also uncovers the role of the CFO in the materiality assessment process indicating that the IR preparers report directly to him asking for feedback on the contents of the report and refine it accordingly (Lai et al., 2017). Prior research focused on companies that were early adopters of IR in Australia indicates that these companies also based their materiality process on strategic issues, with some using cross-functional teams—including representatives from the finance, strategy, and sustainability areas—to drive the reporting process and align it with the business strategy (Stubbs & Higgins, 2014). Although exploratory in nature, this early work suggests, consistently with Lai et al. (2017), that when the reporting process is focused on the business strategy and on how organizations create value, the finance and strategy people may play a more prominent role in determining and disclosing material non-financial information (Stubbs & Higgins, 2014).

Farooq and de Villiers (2019) have explored how sustainability reporting managers (SRMs) institutionalize sustainability reporting practices (including how they undertake materiality assessment) based on in-depth interviews with SRMs in Australia and New Zealand. This study reveals huge variations in the approach to materiality in SR identifying four phases through which companies may transition, each reflecting a different approach to materiality. In phase one, materiality assessments are informal with SMRs relying on secondary data and management insights to identify external stakeholders and their concerns. In phase two a more formal assessment process with greater stakeholder engagement is undertaken (e.g., materiality assessment meetings or workshops, stakeholder surveys, and social media forum). In phase three the materiality assessment activities and the stakeholder engagement process become routinized (occurs more frequently) and in a more

formal manner. Finally phase four involves introducing sustainability KPIs and materiality assessment reports in integration with risk assessment and strategy development to support planning and decision-making (Farooq & de Villiers, 2019).

Recently, Sentuti et al. (2020) have examined the organizational process underpinning non-financial disclosure (including materiality assessment) through a case study of an Italian listed group operating in the manufacturing sector. In this instance, the responsibility for coordinating the NFD process was assigned to the internal audit area, and it was carried out in strict collaboration with the marketing and communication department. The materiality assessment process required the involvement of various corporate departments in order to identify the most material topics for the group and its stakeholders and resulted in a materiality matrix that drove the collection of data and information. The internal audit team previously shared the methodology used for NFD with the various corporate departments, including the finance area, so as to ensure a common vision regarding the method and the reasons for carrying out NFD. The whole procedure for materiality analysis was approved by the Control and Risk Committee which also examined the final draft of the non-financial statement (NFS) before sending it to the Board of Directors for approval. This case analysis identifies some major problem areas in the materiality assessment process which include the identification of the relevant stakeholders for NFD, the gathering of information from the various corporate departments (due to the difficulty to find a common language), and the need to support all the material topics by documentary evidence.

To the best of our knowledge, these latter studies are among the few ones that explore how the materiality assessment process is undertaken by engaging the organizational actors involved in this process. In an attempt to fill this research gap, the present chapter, based on a case analysis of two Italian listed companies, investigates how the materiality determination process takes place in SR contexts, with a particular focus on the role of the CFO/controller and on the intended addressees of NFD.

3 Research Methodology

According to the research questions driving the investigation, the following sections are devoted to present and discuss the main findings derived from an in-depth case analysis focused on two Italian companies, namely, Biesse Group S.p.A. and Iren, both listed on the Milan Stock Exchange and having in common to fall within the characteristics of mandatory non-financial disclosure. The adoption of an interpretative perspective and the choice of a qualitative research approach rest on its consistency to explore evidences that are not objectively observable, thus requiring direct interaction with the actors' perceptions to investigate how the materiality determination process takes place and the role of the CFO/controller. In this vein, both the description of the premises at the base of the selected methodological approach and the tools adopted to collect data (semi-structured interviews and

triangulation with secondary sources, i.e., public and internal reports) have been pointed out in the previous chapter (In Sect. 3 of Chap. 25—Research Methodology) to which one can refer for any additional information.

3.1 Case Study 1: Biesse Group S.p.A.¹

The purpose of this case analysis is to provide evidence of the role and the steps carried out by the team involved in releasing the non-financial statement and managing the materiality process in Biesse Group S.p.A. Additionally, the case highlights the pivotal role played by the internal audit (IA) function and the complementary role of the chief financial officers (CFOs) in setting up the direction of change and promoting new procedures concerning the preparation of the sustainability report, and the stakeholder engagement activities, that prompted the company to shift from a reactive to a more proactive response toward pressures for non-financial disclosure integrating corporate sustainability in the managerial decision-making process.

Data were collected in 2020 through semi-structured interviews addressed to key informant NFS (non-financial statement) preparers (Chief Executive Auditor, Compliance Specialist, independent board members belonging to the Control and Risk Committee, and the Group CFO). Primary sources were complemented by information gathered from secondary data (consolidated financial statement, annual report, sustainability reports (2017–2020), 3-Year Industrial plan (2020–2022), corporate journal, company website, and press releases) to provide an effective triangulation (Biesse Group, 2020a, 2020b, 2020c).

3.1.1 Company Overview

Biesse Group S.p.A. (Biesse) is a global leader in technology for processing wood, glass, stone, plastic, and metal. Headquartered in Pesaro (central-west Italy), it operates through 4 business units, 11 manufacturing facilities (10 in Italy and 1 in India), 39 branches around the world, and more than 300 selected distributors. With over 67,000 clients—that include prestigious Italian and international brands—it exports about 85% of sales. The Biesse has approximately 4000 employees around the world while keeping a family-based ownership structure: 51% of ordinary share capital (that amounts to € 27,393,042) owned by the Selci's family (through Bi.Fin. Srl) and 49% free float/other shareholders.

¹The author would like to express special thanks to Dr. Domenico Ciccopiedi and Dr. Desiré Colanzi (internal audit), the Group CFO, and the members of the Board of Directors of Biesse Group for their support and collaboration during the research.

Biesse has been listed on the STAR segment of the Italian Stock Exchange since June 2001 and is currently included in the FTSE IT Small Cap index. At the end of December 2019, the Biesse had 706 million of total revenue, EBITDA (before non-recurring costs) of € 76,732, and EBIT (before non-recurring items) of € 39,554. Being a multinational with a strong Italian identity, it plays a pivotal role in the socioeconomic context in which it is embedded and in the local community where it was set up in 1969 by Giancarlo Selci.

Pursuant to the Consolidated Law on Finance, Biesse has adopted a traditional administration and control model which requires shareholders meeting, board of directors, board of statutory auditors, and independent auditors (Deloitte & Touche S.p.A). The central body of the governance system is the Board of Directors formed by eight members, including the Chairman (Giancarlo Selci, the founder), five executive directors, and three independent non-executive directors. In accordance with the corporate governance code, the group has adopted an internal control and risk management system, according to the CoSO Report (Internal Control Integrated Framework).

3.1.2 The Implementation of the DNF and the Sustainability Reporting Journey in Biesse

Before the Legislative Decree 254/2016, Biesse never felt the need to disclose non-financial information because both the sector and its (B2B) market are characterized by a low critical environmental impact. The implementation of the non-financial statement (NFS) was initially driven by the legislation (coercive pressures). However, when the transposition of the Directive (2014/95/EU) came into force, instead of making a minimum effort to be compliant (e.g., by including ESG information in the management report), the Board triggered a challenging project due to the sensitivity toward stakeholders (Page & Spira, 2016), previously pursued through a CSR “walk-the-talk” approach (Wickert et al., 2016; Schoeneborn et al., 2020) and the shared values underpinning the business model: innovation, reliability, and respect (Biesse Group Sustainability Report, 2019, p. 21):

“Starting from the mandatory requirements we have taken the opportunity to do more. We started an internal and external process of reflection on the topics of sustainability guaranteeing transparency towards all stakeholders (...). In this way, the first sustainability report was born.” (Biesse Group President and CEO, drawn from Biesse Sustainability Report, 2017, p. 4)

The sustainability report—pertaining to the Group consisting of Biesse S.p.A. and its fully consolidated subsidiaries—is published annually. It is reviewed and assessed by the control and risks committee and approved by the Board.

Moreover, “Deloitte & Touche Spa has submitted our sustainability report to limited assurance engagement according to the criteria indicated by the ISAE 3000 Revised principle” (Group CFO).

As an independent board member affirms, the implementation of the sustainability reporting process “allowed us to define a new sustainability journey,” leading the

foundation for project planning and improvement in the areas of sustainability risks, environment, personnel and social related issues, human rights, supply chain, and fight against active and passive corruption.

Whereas Biesse mainly conformed to the law in the first year, it matured the idea of the sustainability report as a tool to acquire eligible external tangible and intangible resources (financial resources, talents, and reputation).

“The importance of sustainability aspects is going to grow as investors are more and more interested. We used to present our annual report and discuss financial data with investors, but now, we can arrange ad hoc meetings with Social Responsible Investment funds” (Chief Audit Executive).

Before releasing the sustainability report, Biesse “was already excellent in communicating financial data and business performance, alongside a description of technical projects, development policies and investments in technology” (Group CFO). The Investor Relations and Financial Manager is responsible for financial communication that plays an essential role in the value creation process for the Group. Biesse has always actively worked to establish continuous dialogue with institutional investors, shareholders, and the markets, ensuring a systematic and timely disclosure addressed to the national and international financial community through press releases, meetings and periodic updates of the company’s website (financial statements, quarterly and interim reports), as well as participating in all events organized by the Italian Stock Exchange (STAR events in Milan and London).

However, through the sustainability report, the Group made a step forward in addressing its key interlocutors (investors, customers, and employees): “Currently we can disclose to investors also our social and environmental policies (i.e., gas emissions reduction and environmental protection’ policies. In addition, the sustainability report provides a more comprehensive picture of BG to employees, ‘allowing to attract young talents” (CEA).

“The sustainability report is directly mailed to our top customers and having a formalised sustainability strategy can contribute to enhance our competitiveness and attractiveness.” (Group CFO)

In this vein, over time the marketing and communication department is most actively engaged in conveying CSR and sustainability outside the Group by selecting consistent forms of communications, such as multimedia boards, posters, social media, newsletters on the company’s intranet, etc., while the IA function disseminates the culture of sustainability reporting within the company in accordance with the Group CFO.

3.1.3 The “Driver” of the Materiality Analysis Process

The Board decided to entrust the internal audit (IA) function to guide the whole process required by the preparation of the first sustainability report (Biesse Group, 2017). The Chief of the “Internal Audit-Compliance-Non-Financial Information” function was appointed in 2014 at the proposal of the Chairman of the Board of

Directors, in agreement with the Control and Risk Committee. Graduated in Business Economics, before entering the Group he covered top positions in large companies (i.e., Datalogic Spa) and audit firms (i.e., PricewaterhouseCoopers) in the areas of auditing; GAAP; corporate finance and financial analysis; due diligence, external, internal, and financial audit; corporate tax; and management accounting. The IA department encompasses a Compliance Specialist (with prior professional experience in auditing firms) in charge from 2017, after covering management control positions in Biesse since 2015.

The choice to appoint the IA rests on its autonomy and professionalism: first, as an independent function it does not hierarchically report to any manager of operating areas; second, it has a great knowledge of the company processes and structure, being able to interact with different departments and branches, having direct access to all relevant information for carrying out his assignment and a distinctive experience in project management. Therefore, although several actors currently were (and currently are) engaged in the sustainability reporting preparation, since the first year (2017) of implementation, the IA department was (and still is) the “owner” of the materiality determination process and the “hub” (Lai et al., 2017) entrusted with the responsibility for coordinating and carrying out the various procedures connected to the release of the NFS, from methodology identification to drafting the sustainability report.

The team is formed by the Chief Audit Executive (the head of the hub), the Compliance Specialist, and the Marketing Manager. During the “phase-in” year, the team was supported and trained by an outside consulting company, to acquire the necessary skills to drive the process of sharing the rationales and the methodology within the whole Group. Unlike the economic-financial disclosure, characterized by well-established procedures, there were no consolidated internal procedures and guidelines to issue the NFS. As the Compliance Specialist argues: “We opted to release the NFS in accordance with the GRI standards (2016, core option), as suggested by the external consultant and because it was diffusely adopted by other companies that manufacture machine tools. The sustainability report was appreciated as the best tool to dialogue with our stakeholders.”

“The IA function had a leading role because it kept control of the whole implementing process, since its inception and during all phases” (Chief Audit Executive). Hence, it led:

- The reporting methodology identification (in collaboration with the external consulting firm)
- The methodology sharing among departments and units (headquarters and subsidiaries; CFOs of the Group; and the Administration, Finance, and Control Director—the Group CFO)
- The stakeholder identification and stakeholder mapping (with corporate managers)
- The materiality analysis (actors involved: internal audit team, corporate managers, stakeholders)

- The information gathering (with the support of various corporate departments and subsidiaries)
- The drafting of the sustainability report (actors involved: internal audit team, marketing and communication department)

The IA periodically meets the Risk and Control Committee to submit technical proposals, as well as new procedures to be approved by the Board (in the absence of a specific Sustainability Committee). The Group CFO does not play a similar “gatekeeper” or “brokerage role” (Schaltegger & Zvezdov, 2015; Egan & Tweedie, 2018) within the different phases of the sustainability reporting process. His involvement was limited to participating in periodic meetings, providing financial information and quantitative data to be included in the report, and sharing (informally) feedback information flows.

The team worked almost full-time for over 6 months to release the first sustainability report “assembling a huge puzzle whose pieces were scattered all over the company departments” (Chief Audit Executive, Corporate Journal/2018), initially in a “narrowed” composition (only the IA and consulting firm were involved in identifying the reporting methodology) to then include the CFOs of the Group and middle managers of the headquarters and subsidiaries so as to ensure a common vision. A time-consuming activity was represented by the meetings aimed at involving company managers, albeit fundamental to operationalize the concept of sustainability (the IA acted as an “educator” to spread the knowledge of sustainability matters among company managers) and create the first materiality matrix based on their perceptions. Both the CAE and his collaborators played a very proactive role, updating and simplifying the language of the GRI standard, whose technicalities created many difficulties for people charged to gather data. Crucial to this stage was the “finance meeting” aimed to meet all CFOs from the subsidiaries and brief them on the various questions/issues.

In the “transition phase,” stakeholders’ engagement was thus indirect, due to the limited time available, and the first material matrix was based on internal managers’ perceptions. This procedure, submitted to the company’s Control and Risk Committee for approval, enabled Biesse to firstly assess the relevance of the topics both for the Group and for its stakeholders.

“All functions participated in the drafting of the materiality matrix. Top managers of every company department had to collect data on the processes they govern and estimate the impacts of their actions. Some departments were more active than others.” (CAE)

Several problems emerged, due to the inherent complexity of the process, such as difficulties in gathering and linking up information, finding a “common” language to reconcile data and enable information exchange among different areas (i.e., R&D, HR, service, technical, quality control, safety, sales, accounting, and administration), and summarizing both quantitative and qualitative information in an organic manner: “The first year, collecting data was a major problem: everyone delivered information which had been processed in different ways” (Team member).

The team defined the procedures to collect quantitative and qualitative data from all 39 companies of the Group and performed specific follow-up interviews

addressed to middle managers (e.g., responsible for environment and safety issues). In addition, ad hoc procedures were tailored to specific departments (e.g., the HR) to increase the reliability and timeliness of data collection.

“Risks and issues related to sustainability were included within the Enterprise Risk Management process. The mapping of most significant risks linked to sustainability issues was a very demanding activity. Biesse adopted an ERM model since 2012. During 2017, the management and monitoring of risks linked to sustainability became an integral part of business strategy and the Group’s approach to sustainability,” which led to the first internal materiality analysis.” (CAE)

The IA guarantees the reliability of data, as it supervises the company’s internal processes together with the statutory auditing company.

After the “phase-in” report, the team launched two initiatives to improve the materiality matrix process, namely, aimed at strengthening the stakeholder engagement and assessing the eventual gap affecting the first materiality matrix implementation. “Firstly, a questionnaire was sent by e-mail to over a hundred external stakeholders (a stratified purposive sample of customers, suppliers, employees, top branches managers, a selected group of managers belonging to the parent company and members of the board, banks, the financial community, media, researchers and university professors) to ask them which topics of sustainability they consider most relevant and what are their expectations. Secondly, 35 company managers (both from national and foreign branches) were involved and interviewed, in order to refine the materiality matrix” (Compliance Specialist).

It should be noted that the questionnaire answers did not reveal significant differences compared to the expectations previously identified by managers:

“The materiality matrix made in the first reporting year based on internal investigations with Biesse’s managers was not too different from the one made in the second year. None of the stakeholders claimed unexplored issues. However, stakeholders, even if with different emphasis, highlighted the need for additional in-depth information about Biesse’s strategy” (Compliance Specialist). This result allowed the IA to actively sensitize the Control and Risk Committee and the Board driving the reflection on how CSR and sustainability should be integrated into the 3-year strategic plan (Biesse Group Strategic Plan 2020–2022).

Moreover, as the Group CFO argues, Biesse started negotiating with some institutional investors’ and clients’ specific requests and provisions (e.g., IKEA) about sustainability issues, making efforts to strengthening communication tools (e.g., the *Corporate Journal* that was complemented by a “sustainability” section) and participating in national and international competitions (i.e., Best Performance Award 2018; Deloitte “Best Managed Companies”).

Currently, the materiality analysis process rests on three phases: the analysis of sustainability frameworks recognized internationally,² the quantitative and qualita-

²The UN Global Compact, the SGDs reporting, the European Commission Communication “Guidelines on non-financial reporting” 2017/C 215/01, “Your guide to ESG reporting” issued by the London Stock Exchange Group

tive analysis of identified topics, and the preparation and update of the materiality matrix. In the course of 2019, a survey was undertaken to update the degree of materiality attributed by Biesse Group's stakeholders to the identified sustainability topics, matching both to the areas indicated by the Legislative Decree 254/2016 and the risks identified by Biesse and aligning to the SDGs most impacted by the Group.

3.1.4 Leading and Complementing the Materiality Process: Further Perspectives

Drawing from the case, we acknowledge the key role of the IA function, both in initiating and improving the materiality process and, more generally, in implementing the non-financial reporting (Aureli et al., 2020). Instead of acting as an inspector, the IA covered multiple and proactive roles acting as “a teacher” (Sarens & De Beelde, 2006), by providing technical advice and favoring meetings within the company to circulate the sustainability culture; a “gatekeeper” of sustainability information (Zoni & Pippo, 2017; Schaltegger & Zvezdov, 2015; Egan & Tweedie, 2018), by selecting sustainability information produced by functional managers, exchanging and diffusing data among the different managers and toward the top management; and a “brokerage role” (Lantto, 2014) with respect to other company functions. By contrast, both the role of CFOs and the Group CFO—who entered the Group in September 2020 (after covering top finance positions in Società Generale, Fiat Group, and Iveco) and is responsible to edit the consolidated financial statement—were not pivotal in releasing the materiality matrix or preparing the prospects of value added creation and distribution. Therefore, they can be considered as “nodes” of the hub whose head rests on the IA department. A low involvement and a “narrow” role of CFO in sustainability reporting—attributable to the lack of the mindset needed to support sustainability practices with other organizational actors—were pointed out in previous research (Schaltegger, 2017; Egan & Tweedie, 2018).

However, Biesse Board is currently oriented to implement a Group reorganization and transformation project and to progress the CSR and sustainability journey, thus eliciting new challenges that could imply the creation of a dedicated function (i.e., a Sustainability Officer) and the release of an integrated report. Therefore, the case mirrors a possible future involvement of the CFO in the integrated reporting process that could rely on broadening the existing/traditional domain of expertise, by acquiring knowledge and developing skills and competencies traditionally pertaining to other fields of expertise, such as the case of IA.

3.2 Case Study 2: Iren³

Iren is a leading company operating in a multiregional basin in Northwest Italy of over 7,000,000 inhabitants, a portfolio of 1815 million customers served in the energy sector and over 5 million inhabitants served in the water and environmental cycle.

Iren is listed on the Milan Stock Exchange and operates as a multi-utility with a diversified business model, characterized by a balance of free activities (30%) and regulated activities (46%).

The role of the CFO in the materiality matters of the company is to be analyzed in the context of its duties within different areas of the governance of sustainability. In particular, the following aspects were examined:

- The governance structure with particular regard to the risk management
- The definition of the company's strategic integrated plan
- The organizational structure and responsibilities

The corporate decision-making process in which roles and responsibilities are defined and which guarantees that the risks and opportunities deriving from the economic, social, and environmental context are considered is based on a model that comprises the Board of Directors; the Control, Risk, and Sustainability Committee (CRSC); and the Local Committees (Mio et al., 2020; Fasan & Mio, 2017). These actors should formulate, execute, and supervise the company's CSR strategy as part of corporate board duties (Velte & Stawinoga, 2020). Their goal is to critically review business practices, analyze environmental and social needs, and formulate strategies that align sustainable development with financial results (Uyar et al., 2021).

Within Iren's governance, the Board of Directors (BoD) defines the strategic approach and approves the guidelines and objectives, also with particular attention to sustainability objectives. The BoD defines the nature and the level of risk compatible with the company's strategic objectives, evaluating the suitability of the organizational structure with particular reference to the internal control and risk evaluation system. The BoD is assisted by the Control, Risk, and Sustainability Committee (CRSC), which provides a prior opinion for the performance of the tasks entrusted to the Board of Directors with regard to internal control, risk management and sustainability.

The company's Board of Directors assigned the CRSC some duties related to sustainable business management as monitoring sustainability policies and compliance with the conduct principles adopted by the company and its subsidiaries and examining the periodic reports on the implementation of structured dialogue with stakeholders in the local areas where Iren operates, in particular through the Local Committees. The consultations concerning sustainability between the interested

³The author gratefully acknowledges the availability of the interviewee, dr. Massimo Levrino CFO at Iren, for all the support provided during the research.

parties are carried out by the Deputy Chair who is responsible for maintaining an open dialogue with the internal and external stakeholders on these topics.

The enterprise risk management (ERM) supports the risk control committee and reports to the Chairman also considering sustainability matters related to climate change and risks and opportunities that these entail from a strategic point of view.

Iren has adopted a business plan with a 5-year horizon which defines its strategic orientations and the related industrial objectives. The strategic integrated plan defines some strategic lines and integrates main goals in terms of efficiency, development, and growth with sustainability and ESG (environment, social, governance) targets. The strategic integrated plan includes sustainability objectives and targets, also in relation to climate change and Iren's commitment to transparent reporting in this regard, with particular focus on the four areas outlined by the Task Force on Climate-related Financial Disclosures (TCFD).

The objectives defined within the strategic integrated plan are monitored annually through the budgeting system and the sustainability report. The will to achieve the sustainability objectives is reinforced by the incentive system (through MBO) applied to the top management and to the main directors of the BUs.

At the organizational level, the responsibilities for sustainability-related issues are spread with different roles and scopes between the "Corporate Social Responsibility department and Local Committees" function and two supporting inter-organizational bodies, playing an integrating role within the organization (the Strategic Integration Committee and the Sustainable Finance Committee).

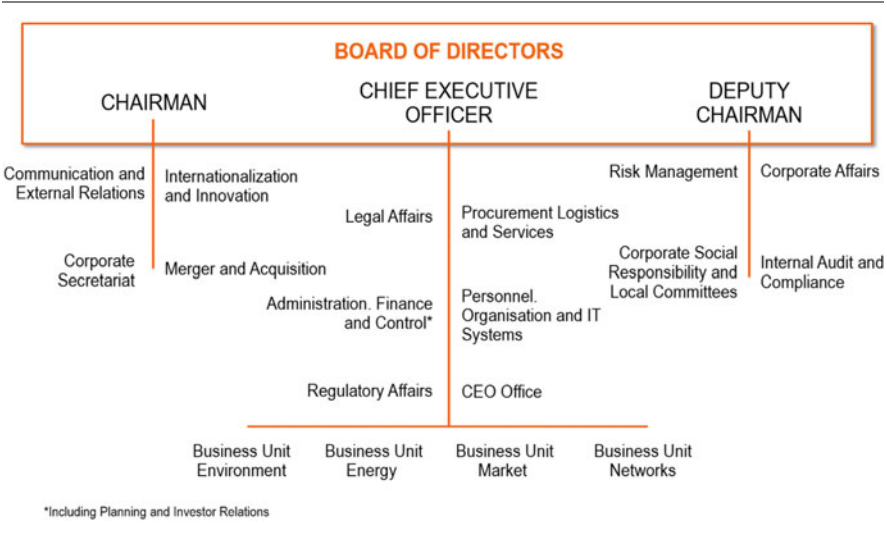
Iren's organizational structure provides a specific Corporate Social Responsibility department and Local Committees referring directly to the Deputy Chairman (see Table 1).

The *Strategic Integration Committee*, chaired by the CFO, is composed by the heads of specific functions (CSR, investor relations, finance, personnel, IT systems, purchasing and internal communications) and by the heads of the BUs. Its purpose is to favor the integration of strategic choices at the various levels of the organization. One of its main commitments is to create the conditions for the strategic guidelines on sustainability to pervade the entire organization and for the SDGs to become integrated in the operations. The committee coordinates the drafting of the integrated strategic plan.

The *Sustainable Finance Committee* is an internal committee that identifies sustainable investments and monitors them. It is chaired by the CFO, with the following functions: CSR, strategic planning, management control, finance, and investor relations. The committee leads the procedures and the process of disclosure related to the emission of "green" bonds in line with the recommendations of the GPB (Green Bond Principles).

It is possible to say that the CFO's role in corporate governance has been put to full display (Zhang & Gao, 2006). The CFO's role is not limited to the area of accounting systems because he plays its traditional role as controller and supplies support for decision-making also in the sustainability area and on materiality matters (Green & Cheng, 2019).

Table 1 Iren’s organizational structure



3.2.1 Iren’s Sustainability Reporting Processes and the Materiality Analysis

Iren prepares and publishes a sustainability report using GRI principles from its birth. Starting from 2017 the document serves as a non-financial statement (NFS) pursuant to Italian Legislative Decree 254/2016, which is prepared annually to provide information relevant to performance in the environmental, social, and economic context, to transparently communicate compliance with the commitments undertaken, future commitments, and the ability to meet stakeholder expectations.

The preparation of the document involves various subjects with different responsibilities:

- The Corporate Social Responsibility department and Local Committees prepares the report.
- The Control, Risk, and Sustainability Committee supports the assessment of the risks and of the economic, environmental, and social performance.
- The BoD approves the report in a Board of Directors’ meeting after the assessment of the completeness and consistency.

A materiality analysis for the purposes of preparing the non-financial report is performed annually as a dynamic process through which Iren and its stakeholders assess the significance of the topics reported carrying out in various stages:

- Identification of relevant issues based on their ability to influence value creation (“desk review”)

- Assessment of the importance of relevant issues in terms of their known or potential effect on value creation
- Prioritization of the issues based on their relative importance and development of the materiality matrix that defines the topics reported
- Determination of information to be disclosed on material matters

The “desk review” is aimed at identifying the spectrum of potentially significant topics reflecting the legislative requirements, the GRI standard, the sustainable development goals (SDGs) of the UN, Iren’s strategic integrated plan, customer satisfaction surveys, the Group risk map and considering media analysis and peer and competitor sustainability topics.

The assessment of the importance of relevant issues considers both external expectations and internal perspectives. In particular, the external engagement is aimed at sharing and assessing potentially significant topics by Iren Local Committees in order to focus interests and identify economic, social, and/or environmental topics relevant to stakeholders. The associations and institutions which participate in the Local Committees represent the main categories of stakeholders of Iren: consumers/customers, employees, suppliers, institutions, shareholders, environment, local communities, NGOs, world of research and university, and future generations.

The internal engagement is aimed at sharing and assessing potentially significant topics by the first line of the management, in order to identify relevant topics for Iren.

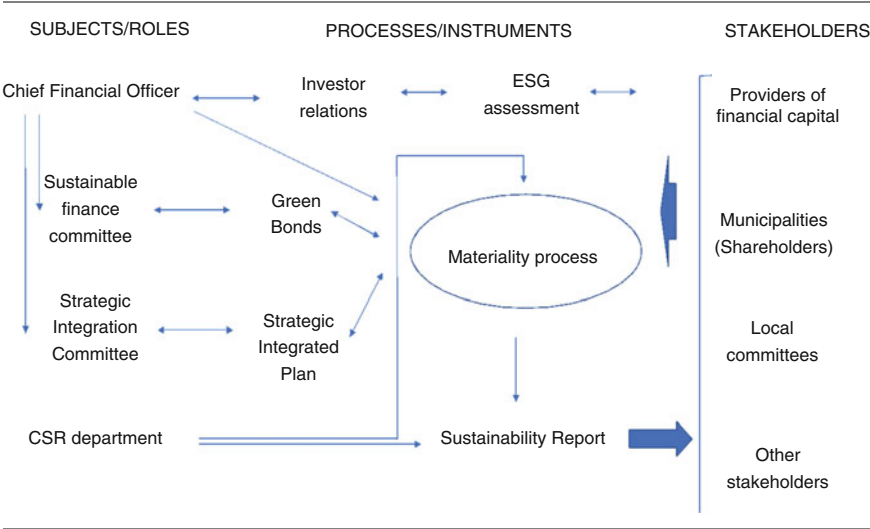
The process aimed at defining the material topics to be disclosed in the sustainability report, as described, is led by the CSR function. For Iren, besides industry-specific factors, some firm-specific elements influence the decisions on materiality. For instance, the public shareholding gives a push to focus on the returns in terms of impacts (positive and negative) on local communities, as well as the green financing strategy boosts toward considering a profound connection with the SDGs and to focus on sustainable investments.

3.2.2 The Role of the CFO in the Process

In Iren the CFO has extensive powers that go beyond the typical responsibilities in the field of administration and finance, embracing a wide range of activities from strategic planning to budgeting and control and to investor relations (IR). Within sustainability management in Iren, the CFO has a “support” function though it cannot be considered as “passive.”

As represented in Table 2, the CFO plays an active role in the definition of the strategic integrated plan, not only because of his role as preparer but mainly because of his responsibility as coordinator of the Strategic Integration Committee. Moreover, acting in the field of his proper charges, the CFO leads the processes related to the Green Bond Financing, within which many decisions are taken through the Sustainable Finance Committee (headed by the CFO) consistently with the company’s sustainable goals.

Table 2 The role of the Iren’s CFO within the sustainability management



A particular role for the CFO is connected with the recommendation for the Green Bond’s issuers for a clear process of disclosure based on transparency, accuracy, and integrity of information that is due to stakeholders. In this sense, the issuers with the ability to monitor achieved impacts are encouraged to include those in their regular reporting.

A related task of the CFO is devoted to meeting the information needs coming from investors that are always more engaged with ESG assessments with the scope of identifying risks and opportunities in terms of sustainability in their investment portfolio.

If, from the one side, the CFO is involved in the materiality process together with the first line of the management in order to identify relevant topics for Iren within the internal engagement processes, from the other side, some factors under the control of the CFO play a role in the materiality process itself.

To be more effective, the materiality determination process is integrated into the organization’s management processes and includes regular engagement with financial capital providers realized by the CFO. In this context, the CFO brings to the materiality analysis, the feedback from investor relations, and all the aspects related to the ESG evaluations and the CDP rating.

A summary of the role of the CFO in the materiality process is provided in Table 3.

Table 3 The CFO and the materiality process

CFO	L	Integrated strategic plan	D	Materiality process
	L	Green bond financing	I	
	L	Investor relations	D	
	L	Preparation of financial reports	I	
	L	Budgeting and control system	I	
	P	CDP rating	I	
	P	Assessment of the importance of relevant issues	D	
	A	Enterprise risk management	I	

L = CFO leads the process; P = CFO is part of the process; A = CFO’s work is audited by the process; I = CFO’s indirect contribution to materiality; D = CFO’s direct contribution to materiality

3.2.3 Conclusions

The purpose of the analysis of the Iren case study is to identify the contribution that the CFO brings, in general, to the management of sustainability and, in particular, to the materiality process. The company has some peculiarities that are linked to its industry (multi-utilities) which highlights significant sustainability issues, to its capital shareholding which is for the most part made of public entities (municipalities), and to the fact of being listed and having accessed to “green” financing.

The emphasis of the analysis has been devoted to the direct or indirect contributions of the CFO’s role on the main processes related to sustainability management. A supporting role seems to prevail, but at the same time the CFO is the one from whom many of the decisions on sustainability come or through which they unwind (Barth et al., 2017).

The role of the CFO in the processes described seems to be instrumental in supporting the other functions (CSR management *in primis*, strategic planning—for integrated plan, etc.), but it has been clarified that it is not “passive.” That is not only because of the corporate sustainability objectives included in a “systemic” evaluation and therefore are always evaluated “transforming” them into financials but also for the key responsibility played by the CFO in creating the conditions for the strategic guidelines on sustainability to pervade the entire organization and for the SDGs to become integrated in the operations.

In defining the role of the CFO in the materiality determination process, two variables need to be considered. On the one hand, the organizational structure plays a fundamental role: the wider the responsibilities of the CFO are, the deeper is its contribution to the processes (Gerwanski et al., 2019). With particular reference to the topic of materiality, it can be said that, even if the process owner is someone else, the CFO plays an important role when it has extended powers such as those going beyond the finance function, like strategic planning function, management control, and investor relations. On the other hand, the shareholders structure and the complexities of being a listed company jointly with the financial strategies driven by a sustainable finance approach give to the CFO a key role in the materiality process.

4 Discussion and Conclusions

4.1 *Discussion About the Findings and Practical Implications*

This research stream focuses on the dynamics of board decision-making process (Forbes & Milliken, 1999; Pye & Pettigrew, 2005) and draws attention to a CFO's characteristics, its deliberation process, and its effectiveness in the development of NFD. These features affect how CFO engages in reflective decision-making and thus whether the CFO can work effectively to make the voices in company debate about the NFD. The CFO's characteristics, experience, experimentation, professionalism, and transparency, in addition to control competence, are proposed as enabling company performance as well as future design of strategic and operational control mechanisms (Wouters & Wilderom, 2008).

The outcome of interviews with key organizational actors involved in the NFD process coupled with the analysis of secondary sources allowed us to answer the research questions.

Using two pilot case studies of NFD implementation, we traced some insights on the potential role of CFOs in the materiality process. We highlight different engagements of the top managers (controller, internal auditor, and CFO) in determining materiality.

With respect to RQ1, it was found that the key organizational actors involved in the NDF and materiality determination process and their roles (including the CFO's role) are different between the two companies. In particular, the role of internal actors is critical to address NFD impact and effectiveness in the broader organizational and external context, even though the key organizational actors involved in the NDF process are different in the two cases. The study highlights their commitment to and involvement in a variety of non-financial communication. In our chapter, these organizational efforts appear not to be similar, and CFO efforts are actually aligned with organizational strategies, but it is not clear how far these measures are relevant in NFD. IR and Management Control System aim to monitor and steer an organization's functioning and decision-making process, including those relating to sustainability issues. They also typically aim to influence people's behaviors. We sought to bring together state-of-the-art research on management accounting and materiality process. So we call for stimulating contributions to study the streams of research in this field of materiality but also to highlight the qualified practices coming from listed companies in Italian context. To be more effective, when the materiality is present, the following determination process is integrated into the organization's management process and include regular engagement with financial capital providers.

The first case study (Biesse Group) sheds new light on the likability bias in the internal audit (IA) function to the development of performance evaluations and materiality. Regarding RQ1, it pinpoints the role of IA team managers in the development of the materiality; while the role of the CFO is "lateral," this is of particular interest, because the gatekeeper and owner of the NFD process are the IA

function which has the role of “moral suasion” and “educator” of the CFO. The IA function played a key role in the materiality process with respect to the complementary-collateral role of the CFO, thus suggesting the need to broaden the CFO traditional domain of expertise, by developing skills and competences tied to other fields and areas. In fact, in the case of Biesse, CFO performs just a single step during the materiality process.

The second case study (Iren) reveals, according to RQ1, that the CFO is involved in the NFD and materiality process in a support capacity, while the owner of the process is the Corporate Social Responsibility, assisted by the Control, Risk and Sustainability Committee for the assessment of risks and of the economic, environmental, and social performance. In this case the CFO coordinates managers to be innovative in reporting and develops new measures. So the role of CFO in the governance and relationship among stakeholders and shareholders is prominent. The role of the CFO in the Sustainable Finance Committee is also interesting, and it can be defined “almost atypical.” The case shows the “desk review” role and pinpoints the spectrum of potentially significant topics reflecting the legislative requirements, the GRI standard, and sustainable development goals (SDGs). Another relevant aspect is the internal process of engagement that shows the materiality topics, identifying the scoring and its evolution in the years 2015–2019. It is an internal assessment and scoring management that can be fundamental to develop the corporate values and communicate the information useful “to make sustainability decisions in situ.” The case is a paradigmatic Italian practice in a complex organization, and therefore it is useful to highlight the advantages or criticalities of the CFO in the materiality in a mixed private and public organization.

Regarding RQ2, the main addressees of NFD are in both cases the providers of financial capital; thus one may argue that the process of NFD and the related materiality assessment is mainly driven by the information needs of capital providers. It should be noted in this regard that both companies produce a sustainability report following the GRI standards. According to Mio et al. (2020), the GRI approach to materiality should cover a wider audience of stakeholders than investors. Our findings contradict this previous work indicating that investors are given prominence in the materiality process.

We trace some insights on the role of CFOs in the materiality process. Table 4 compares the main drivers of the two case studies.

The practical implications for the materiality process to remark without leading to generalize are:

- The complexity of the stakeholders that orbit around the company: although the case companies are both listed on the stock exchange, they still have stakeholders with divergent priorities. In some cases, the glue fed by qualified majority shareholders and socioemotional wealth (SEW) preservation of entrepreneur families already create a selection and convergence of intentions among stakeholders.
- An evolutionary process of the CFO’s skills and internal sensitivity of the management control framework: a “broken” evolution as it can only be decisively

Table 4 Drivers of materiality process, heterogeneous information needs, and CFO role

	Biesse	Iren
<i>Complexity of relationship among shareholder and industry stakeholders</i>	Low relevance	High relevance
<i>Role of CFO in the formalized process of materiality</i>	Medium relevance	High relevance
<i>Extension of managerial proxies of the CFO in the evolution process of materiality</i>	Low relevance	High relevance
<i>Complementary role of other proactive professional actors</i>	High relevance	Low relevance
<i>Evolution of the CFO's skills</i>	High relevance	High relevance

conditioned by the obligation to disclose, by the financial market where gurus and operators heavily affect corporate sustainability and integrated thinking and which make the materiality process in some ways profoundly different in the method (GRI, IIRC, or more customized and relevant in decision-making in situ) and in the time.

- Characteristics of the sector but in part this point is affected by the CFO's ability to learn and replicate and also by the pressures of institutional actors.
- Extension of managerial proxies to the CFO: the extent of the proxies is relevant but is it the independent variable or is it the result of what is described above? Is it given or requested by the CFO? How much does the CFO's skills play a role?

4.2 Limitations and Direction for Further Research

As previously mentioned, there is a training gap to fill on the side of top managers about the 17 sustainable development goals (SDGs). Further regulatory provisions on disclosure, on the integration of risks for ESG, and on the increasingly concrete methods of corporate communication are expected at local and European level as well as at international one. This is why the two chapters of this section investigate the importance of the financial “advice” that the CFO may give to the company in terms of NFD in its various forms. The role of the CFO can be crucial in developing responsibilities toward stakeholders for the creation of sustainable value and in promoting qualified, sustainable, and “responsible” investments. It is useful related to the experiences gained in the field of CSR and sustainability that the role of management (and CFO in particular) and its participation is fundamental to share the corporate values and make the information useful “to make sustainability decisions in situ” (Marelli, 2015). It is the combination of formal control (conceptualized in the formalized system design) and control in situ (based on its reception and use by system users in a given context) that require attention when theorizing NFD. This is because NFD is not merely the product of organizational controls embedded into system design but also individual sustainability values. Thus, it theoretically

explains on the potential of employee use of intra- and extra-organizational information to make sustainable decisions “in situ.” Consequently, in the materiality, “control in situ” does not mean that specific controls are designed in the systems for each CFO. Rather, it means that through the design of flexible or “enabling” systems, CFO has the opportunity to control in their daily organizational activities by making autonomous decisions based on NFD information and broader organizational-level experience and knowledge, thus affecting the development process of the NFD. Therefore, conceptualizations of the IR take on an extra-organizational and inter-generational dimension where the CFO can be a key actor.

Specifically, the concept of social control as pertaining to organizational actors’ values, rather than merely a reflection of guiding organizational values and system design, is brought forward. This is deemed necessary for the successful development process of NFD, as well as sustainable futures more generally. Hence, these chapters contribute by connecting perspectives on system characteristics, performance outcomes, and individual corporate actors. Such extended conceptual, analytical, and theoretical contributions can offer managerial insight into the value of individual “control” for corporate sustainability but also open to further topics and research. Particularly, as corporate sustainability practices become internalized in the minds of all employees regardless of position, the sustainability discourse transcends temporal and spatial dimensions. Gond et al. (2012) theorize various forms of system integration and the ways in which they affect the level of integration within organizations. There is a view that NFD ought not to be treated as standalone systems. Even if not fully integrated as proposed by Thomas and McElroy (2016), they may be acknowledged as part of a management control package (Grabner & Moers, 2013; Malmi & Brown, 2008).

In order to suggest further studies about the evolutionary process of NFD, the two chapters highlight the relevance of the relationship between control with its system design characteristics and its use in situ. Adler and Borys (1996) and Johnstone (2019) used this frame on accounting enabling tool to study the “dual role of control.” In this framework there co-exist design system producing behavioral or attitudinal effects on the management itself and, on the other hand, the “social” process characterized by experience, professionalism, experimentation, transparency, and sustainability competence (Wouters & Wilderom, 2008; Johnstone, 2019). Following this frame NFD may (or may not yet) address environmental and social issues following only financially oriented formalized and coercive controls. As a matter of fact, Chaps. 25 and 26 contribute to the existing research in two main ways. First, the study demonstrates a clear indication of how existing practices’ differences influence the organizational outcomes. Second, these chapters propose research problems and future research directions. At the same time, these cases show the capacity to manage changes in a way to play a role in the materiality process itself with different actors and in different phases. Despite its limitations we hope that our research will stimulate further research related to the disclosure of these mechanisms.

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