

# Non-financial reporting research and practice: lessons from the last decade

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## Abstract

Research on non-financial reporting (NFR) practices has grown considerably over the last decade, interweaving with several other fields of study, including business ethics, financial accounting and strategic management. NFR is a comprehensive term that includes several forms of reporting, such as CSR reporting, integrated reporting (IR), SDG reporting, GRI reporting, and GHG reporting, among others. The lack of a common standard in NFR has generated discrepancies in NFR managerial practices around the globe. As a result, this study aims to summarise the various NFR practices and the evolution of NFR research by providing a review based on the most influential articles published between 2012 and 2020. We used bibliometric analysis to identify eight research areas: the content of non-financial reports, the IR framework, the relation of NFR with firm-level variables, the relationship between NFR and corporate governance, the theories behind NFR, NFR assurance, the relationship between institutional context and NFR, and environmental reporting. We propose a summary of the literature, together with the best managerial practices that have emerged in recent years. The present study also offers methodological best practices for conducting literature reviews grounded on bibliometric analysis (applying the visualisation of similarities – VOS – method) through a ten-step process, which guarantees the reproducibility of the study by applying quality assurance protocols from medical fields, such as PRISMA and AMSTAR 2.

**Keywords:** Non-Financial reporting; Sustainability reporting; Corporate Social Responsibility reporting; Sustainable Development Goals; Integrated reporting; Global Reporting Initiative; NFR

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## 1. Introduction

An increasing number of companies provide information on their non-financial activities by adopting NFR practices (de Villiers & Alexander, 2014a; Dumay et al., 2016; KPMG, 2020). This positive trend is due to the growing stakeholder scrutiny of companies' social and environmental behaviour, as well as the increasing tendency towards legislative obligations to release non-financial reports (Michelon et al., 2015). For example, Australian public companies must disclose information about their environmental performance under the Corporations Act 2001 and the National Greenhouse and Energy Reporting Act 2007. China's Securities Regulatory Commission requires listed companies to disclose social responsibility information. Since 2008, the Shanghai and Shenzhen Stock Exchanges have also required companies in the "corporate governance group" to disclose information about their corporate social responsibility (CSR) performance in their annual reports. South African companies are subject to strict disclosure requirements according to the King Code of Governance Principles for South Africa. Those listed on the Johannesburg Stock Exchange are required to publish an integrated report for all financial years ending on or after March 1, 2010. In North America, the Securities and Exchange Commission requires Canadian and US companies to disclose non-financial information in their annual reports. Recently, the European Union Directive 95/2014/EU introduced mandatory NFR practices for large European companies. In 2017, the governments of Colombia, Argentina, Chile and Brazil worked with the UN Environment Programme to develop a three-year project to enhance the integration of the Sustainable Development Goals (SDGs) through NFR (Pizzi, Caputo, et al., 2020; Pizzi et al., 2021). As a result, governments and financial regulators are the most active participants in issuing and updating reporting requirements and guidance, followed by stock exchanges and industry bodies.

Recently, several new mandatory and voluntary regulatory requirements have been issued, focusing on human rights, work and climate change (van der Lugt et al., 2020). However, the regulatory innovations of the last decade have led to confusion in NFR practices. Practitioners and companies have not achieved consolidation and standardisation of NFR concepts and guidelines for reporting. Scholars have also used the terms "disclosure" and "reporting" interchangeably, despite their different meanings (Dumay, 2016), thus using different names for non-financial reports with similar contents (Eccles & Krzus, 2010).

In consideration of the mix-up of NFR guidelines and practices around the globe, on June 2021, the International Integrated Reporting Council (IIRC) and the Sustainability Accounting Standards Board (SASB) attempted to improve the coordination of NFR by creating the Value Reporting Foundation (VRF), aiming at more consistent global NFR standards. Consequently, it is crucial to offer a comprehensive analysis of the literature on NFR research with the goal of improving NFR quality and usefulness. Our study aims to extend prior research findings and literature reviews using a wider definition of NFR as "a broad term that applies to all information reported to shareholders and other stakeholders that is not defined by an accounting standard or a calculation of a measure based on an accounting standard" (Eccles & Krzus, 2010, p. 83). In doing so, our paper reconnects with the findings of Hahn and Kühnen (2013) which explored NFR from 1999 to 2011. Our paper also extends previous literature reviews that have focused only on a specific type of non-financial report. It also provides an up-to-date review of the most authoritative studies in the field, proposing a comprehensive systematisation of the main NFR research topics.

The paper is structured as follows. After the introduction, the method section describes the techniques used in the study, followed by the results of the analysis. We then set out our literature

review on NFR research and grouped it into the eight clusters identified in the methodological section. The last section outlines managerial implications, future research avenues and the limitations of the paper.

## 2. Methods and Data

In recent years, bibliometric analyses gained an increased visibility in several fields of study. However, the grade of transparency and reproducibility of such studies was often limited because of the partial disclosure about the data collection, retention process, and analysis protocol. Moving from these premises, in the present paper, we tried to offer an innovative, replicable, and transparent protocol that scholars could easily apply in their future works.

As a result, to carry out a comprehensive and detailed analysis of the literature on NFR practices, we adopted a review scheme grounded on the results of a bibliometric analysis (Marzi et al., 2021). We applied the visualisation of similarities (VOS) technique (van Eck & Waltman, 2010) in clustering the papers, followed by a literature review based on the approach proposed by Tranfield et al. (2003). The quality and reproducibility of the present study were assured by the use of the PRISMA protocol (Moher et al., 2009) and strengthened by the adoption of AMSTAR 2 checklist (Shea et al., 2017). The entire process encompassed the 10 steps outlined below.

As the first step, in January 2021, we analysed the literature on NFR practices to gain an updated overview of the research topic and to create a list of the common keywords used in the field. Following the AMSTAR 2 protocol, we defined our inclusion criteria before starting the data collection process (Shea et al., 2017). We used a combined set of definitions based on seminal papers and reporting frameworks (Adams et al., 2020; de Villiers & Alexander, 2014b; Eccles & Krzus, 2010; Global Sustainability Standards Board, 2016; Gray, 2006; IIRC, 2013; Kolk et al., 2008; Rosati & Faria, 2019), as detailed in the supplementary material and summarised in Figure 1.

In the second step, we defined the research query. The analysis of the query developed by Hahn and Kühnen (2013) suggested that an update was needed following the evolution of the NFR field. Therefore, we enriched the query by combining additional terms from literature reviews on similar topics and the literature exploration in step one (de Villiers et al., 2014; Dumay et al., 2016). The final query, capable of gathering all the significant relevant scientific material, was: “Global Reporting Initiative” OR “GRI” OR “social report\*” OR “environment\* report\*” OR “sustainab\* report\*” OR “CSR report\*” OR “responsib\* report\*” OR “non-financ\* report\*” OR “TBL report\*” OR “triple\* report\*” OR “integr\* report\*” OR “corporate citizenship report\*” OR “ESG report\*” OR “SDG\* report\*” OR “sustainable development goal\* report\*” OR “GHG report\*” OR “greenhouse gas report\*” OR “carbon report\*”.

In the third step, we ran the query in Scopus Database using the operator “TITLE-ABS-KEY”, which performs full-text searches on titles, abstracts and authors’ keywords. We limited the query to documents published in English in the “articles” category and published between 2012 and 2020, allowing us to collect only high-quality material that underwent a double-blind peer review process. We also selected 2012 to connect our study with the previous work of Hahn and Kühnen (2013) on NFR, and chose 2020 as the final year because of the relevant changes in NFR practices, for example, the creation of the Value Reporting Foundation and the first revision of the IR framework released on January 2021.

After defining the boundaries of our study, the fourth step was data collection on March 15, 2021. The query provided a preliminary sample of 4,951 documents in the Scopus database. We used

the Web of Science Core Collection database to cross-validate the data, obtaining 3,830 entries. The comparison between the two databases did not highlight any missing documents in Scopus. However, as several papers were published in low-ranked journals, we integrated a supplementary refinement criterion to increase the quality of the output by restricting the research to journals using a CABS journal list ranking of at least 2 (Yan et al., 2021). This reduced the number of entries to 1,256 in Scopus and 1,178 in the Web of Science Core Collection. Since previous studies suggested that Scopus coverage was better than the Web of Science Core Collection and our study's cross-validation of data confirmed such a finding, we opted for Scopus as the main database source for the present research (Mongeon & Paul-Hus, 2016).

In the fifth step, we cleaned the papers obtained from the query. We reviewed each of the 1,256 papers by reading the titles and abstracts following the inclusion criteria in the first step. The cleaning process excluded 377 articles from the sample, either because they only mentioned NFR practices or because they discussed other forms of disclosure (e.g., information reported on corporate websites). The full list of papers that were included or excluded is available in the supplementary material.

We devoted the sixth step to bibliometric analysis of the selected 879 papers. We used the VOSviewer 1.6.16 software to carry out a VOS analysis, applying bibliographic coupling as the aggregation criteria (van Eck & Waltman, 2010). The routine performed by VOSviewer normalises a co-occurrence matrix of items, generating a similarity matrix. This underpins the graphical output of the VOS analysis: a 2-D map where more shared references give higher proximity. The software also clusters the items, highlighting potential subareas of research (van Eck & Waltman, 2010). We dropped three items from the dataset because they were not connected in the VOS analysis. This left a final set of 876 connected items. The initial resolution for the analysis was set to 1.00.

The seventh step involved identifying the key research topic for each cluster. We independently read the abstracts of all 876 papers and created a list of potential topics summarising the content of the various clusters (Marzi et al., 2021). In line with previous studies on large quantities of papers (Marzi et al., 2021), to achieve greater methodological accuracy we selected and read the papers included within the 80<sup>th</sup> percentile (normalised citation = 1.529; total papers = 179). Then, we held a series of team meetings to agree on the research topic for each cluster. We iteratively increased the resolution of the VOSviewer to 1.20, reaching theoretical saturation of the topics emerging from the similarity analysis (Marzi et al., 2021). We reached theoretical saturation when each cluster grouped a homogeneous topic across the papers included in the cluster (Saunders et al., 2018). Because of the large number of papers, we also set the minimum cluster size to  $n = 10$ , following van Eck and Waltman (2010). At the end of the VOS analysis, eight clusters emerged. To provide a better visualisation of the output from VOSviewer, the plot was processed with RAWgraphs (RAWgraphs.io). The original VOS output is included in the supplementary material.

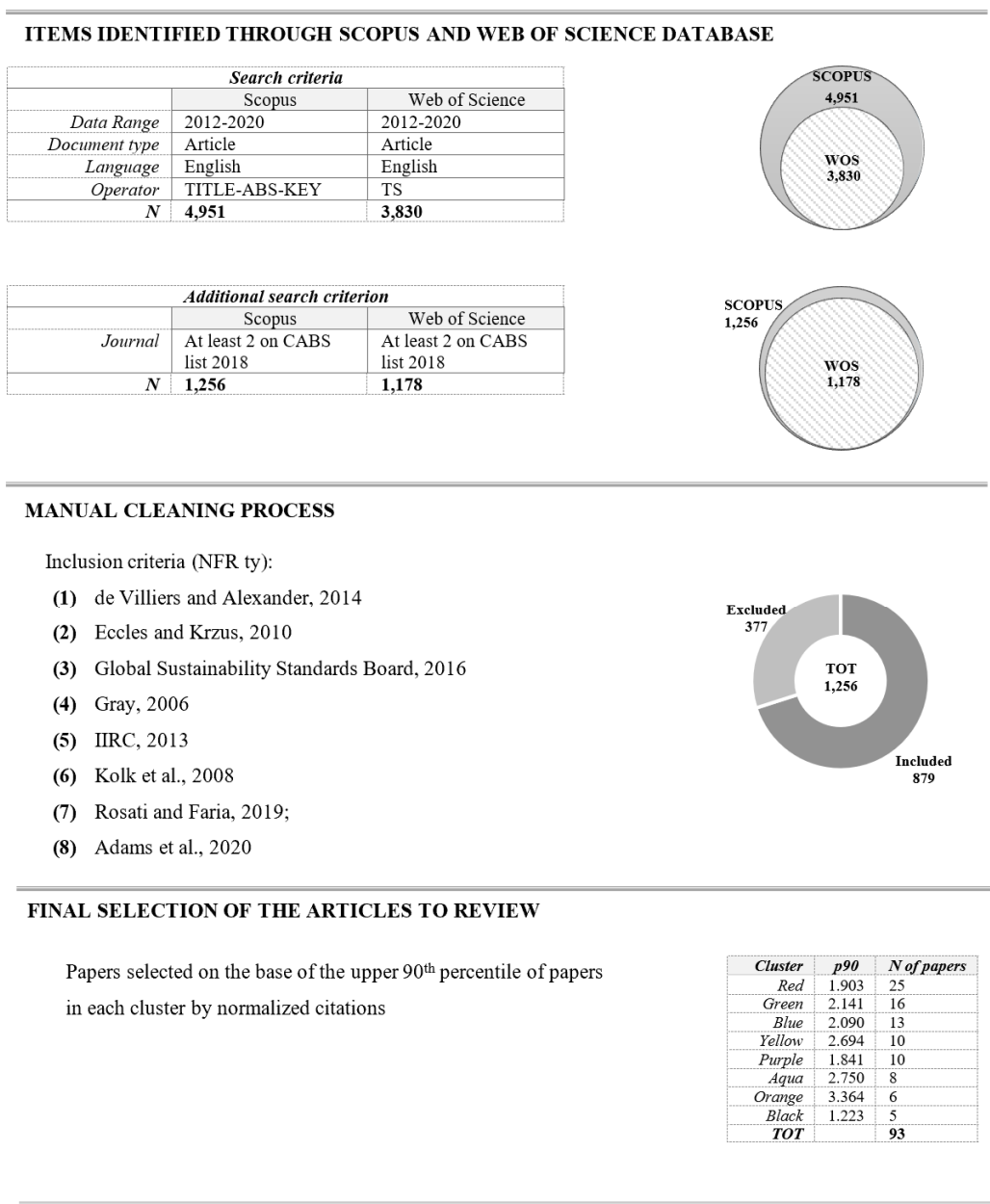
The eighth step aimed to identify papers to include in the present systematic literature review. Because of the large number of papers extracted for the present study, we opted to use a quantitative selection method to identify the papers to be reviewed. Following best practices in the field (Bornmann, 2014), we selected the upper 90<sup>th</sup> percentile of papers in each cluster, calculated on normalised citations (see Figure 1 for the value of normalised citations and the number of papers identified). Normalised citations are recognised as a reliable impact indicator because they provide a comparable citation impact between papers normalised by publication year (Bornmann, 2014). This approach allowed us to include over 10% of the papers within each cluster. As a further robustness

check, all the authors independently checked that the selected papers represented the themes underlying each cluster. This yielded 93 papers for the literature review. To ensure an additional and unbiased grade of reliability for the selected papers, we asked a panel of three NFR experts to review and comment on our research protocol and the representativeness of the sample. The responses were all positive.

In the ninth step, we carried out the systematic literature review process using the approach suggested by Tranfield et al. (2003) and the PRISMA protocol (Moher et al., 2009). We reviewed the papers in decreasing order of normalised citations as a general guiding principle, grouping papers with similar and highly connected topics.

Finally, in the tenth step, we compiled a summary of the best managerial practices that were developed during the years under review, together with the major research avenues to be developed in the future. Figure 1 summarises the main methodological stages.

**Fig. 1: Paper selection and retention process**



### 3. Results of Bibliometric VOS Analysis and Literature Review

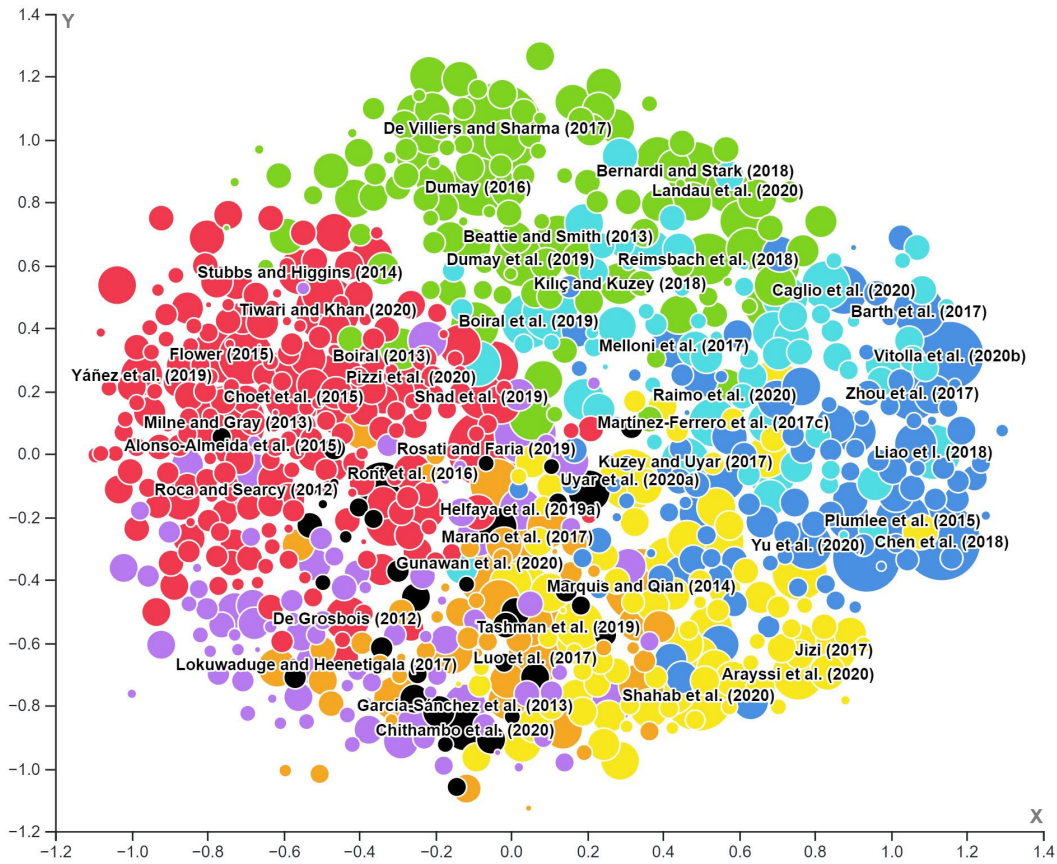
Our bibliometric analysis started with a synthesis of the leading journals in which NFR research has been published. Table 1 shows the main journals with at least 10 papers. Notably, these journals were mainly focused on ethics, accounting, auditing and governance.

**Table 1:** Main journals publishing studies on NFR practices

<b>Journal</b>	<b>Number of Papers</b>
Journal of Cleaner Production	87
Accounting, Auditing and Accountability Journal	79
Business Strategy and the Environment	71
Sustainability Accounting, Management and Policy Journal	71
Journal of Business Ethics	68
Journal of Intellectual Capital	28
Accounting Forum	23
Corporate Governance (Bingley)	19
British Accounting Review	16
Critical Perspectives on Accounting	16
Journal of Applied Accounting Research	16
Australian Accounting Review	13
Business and Society	12
Management Decision	11
Accounting Research Journal	10
International Journal of Disclosure and Governance	10
Managerial Auditing Journal	10

Figure 2 shows the graphical output of the VOS analysis processed with RAWgraphs. The VOS analysis showed eight polarised clusters representing eight distinct research themes.

**Fig. 2:** Results of the VOS analysis



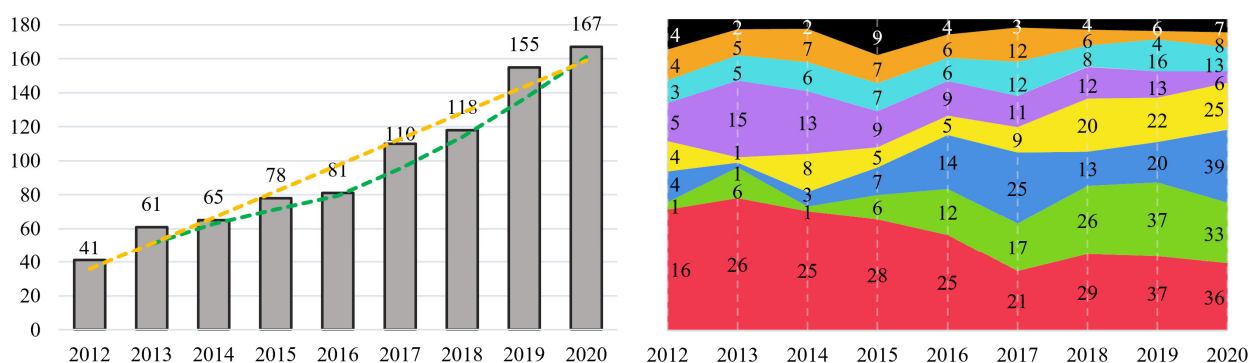
To provide a fine-grained analysis of the NFR field, the descriptive statistics for each cluster are shown in Table 2, containing prominent red and green clusters with 243 and 139 papers, respectively. The red cluster has 8080 citations, while the orange cluster has the highest ratio between total citations and the number of papers (59 papers with 2,783 citations), followed by the red cluster (243 papers with 8080 citations).

**Table 2:** Descriptive statistics for the clusters

Cluster	Number of Papers	Total Citations	Total Citations/ Number of Papers
Red	243	8080	33.25
Green	139	2830	20.36
Blue	126	3257	25.85
Yellow	99	2694	27.21
Purple	93	2924	31.44
Aqua	76	2399	31.56
Orange	59	2783	47.17
Black	41	984	24.00

Figure 3 shows how the papers are allocated to each cluster over time, demonstrating an increasing relevance of the green, blue, yellow and aqua clusters in the last decade.

**Fig. 3:** Distribution of papers by year and cluster



The next section provides a detailed review of the papers in each cluster. The results confirmed that the field of research is well-developed, cited and relevant. Table 3 summarises the topics discussed in each cluster, together with their key research questions.

**Table 3:** Summary of the clusters

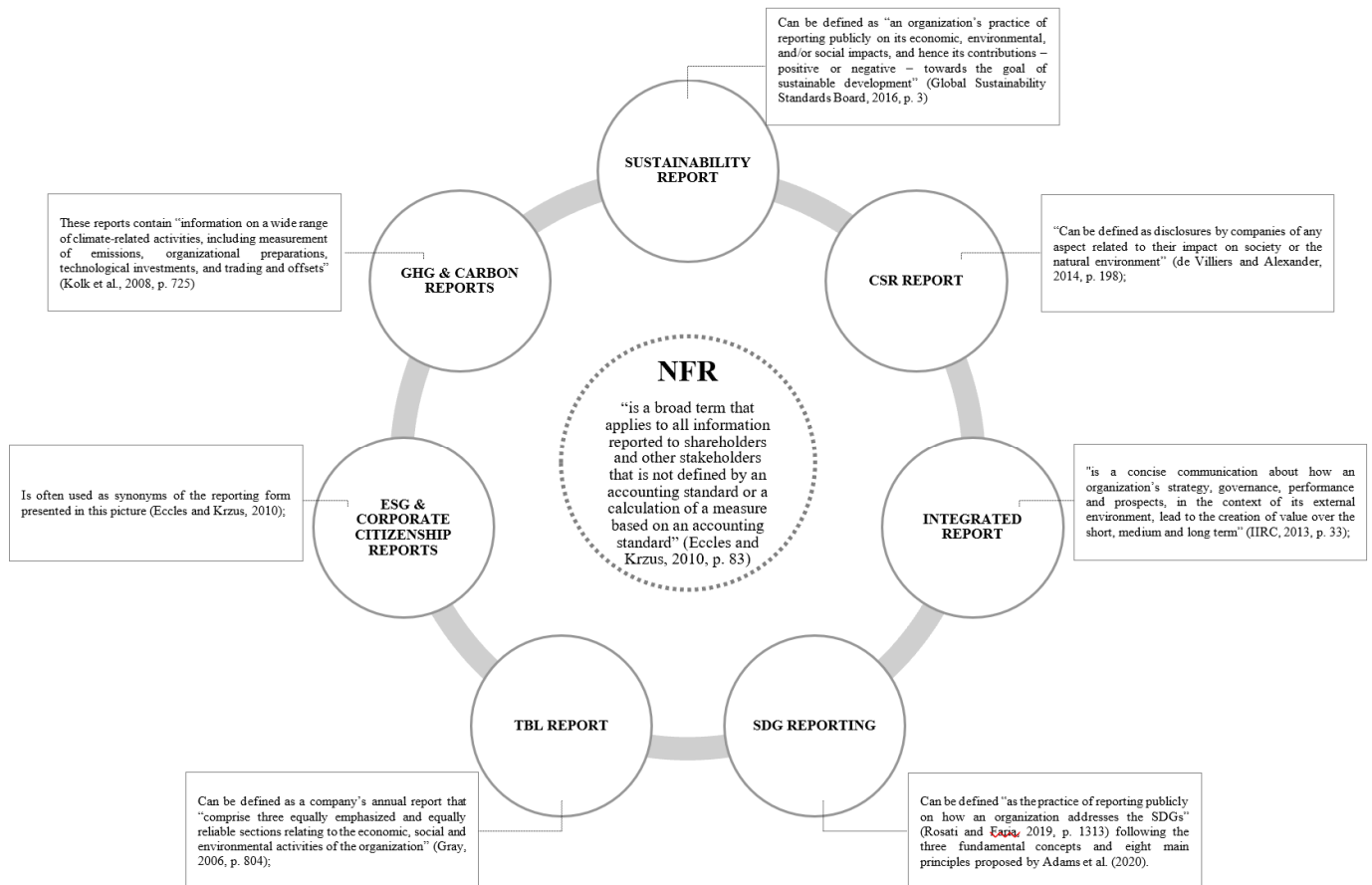
Cluster	Topic	Main Research Questions
<i>Red</i>	Content of non-financial reports	What information do non-financial reports provide? Are there differences in the content of NFR across different industries?
<i>Green</i>	The Integrated Reporting framework	What are the advantages associated with the adoption of IR? What emerges from the literature on the quality and credibility of IR?
<i>Blue</i>	The effect of NFR on firm-level accounting variables	What is the effect of NFR practices on a company's accounting variables? Does this effect change when a company adopts IR?
<i>Yellow</i>	The relationship between governance and NFR practices	What board and CEO characteristics do influence companies' NFR practices? Does ownership structure affect companies' NFR practices?
<i>Purple</i>	Theoretical perspective underlying NFR practices	Which theoretical perspective do companies adopt in their NFR choices? What are the reasons behind the adoption of each of these theoretical perspectives?
<i>Aqua</i>	NFR assurance practices	Do stakeholders consider assurance statements to be reliable? Do these statements enhance NFR credibility? Which factors influence the adoption of assurance practices?
<i>Orange</i>	The relationship between institutional factors and NFR decoupling practices	What are the institutional factors leading companies to NFR decoupling? Are there circumstances where companies opt for substantive NFR practices despite being exposed to decoupling risk?
<i>Black</i>	Environmental reporting	What is the main content of environmental reporting? In line with growing concerns about climate change, do reports include information on carbon emissions?



#### 4. Analysis of the Clusters

NFR is a term that includes several types of reports, while similar terms have been used to

**Fig. 4:** Nomenclatures of non-financial reports



define reports with the same or a very similar kind of information. This has created a proliferation of nomenclatures, resulting in a high risk of misinterpretation between scholars and practitioners. In Figure 4, we summarise the main types of non-financial reports commonly used in business practices before starting our review.

##### 4.1 Red Cluster—Content of Non-Financial Reports

The red cluster includes studies about information provided by companies on non-financial reports related to SDGs, circular economy, and GRI indicators (Gunawan et al., 2020; Milne & Gray, 2013; Roca & Searcy, 2012; Shad et al., 2019; Stewart & Niero, 2018; Turker & Altuntas, 2014).

By analyzing the non-financial reports of companies included in the GRI database, Landrum and Ohsowski (2018) found that sustainability activities were driven by the business benefits they brought to the company. This implies that sustainability was not rooted in corporate culture, while companies often used NFR to maintain access to critical resources, such as capital and customer support, in an attempt at ‘greenwashing’ (De Grosbois, 2012; Stacchezzini et al., 2016). The lack of transparency resulted in limited information on the methodologies applied to identify key stakeholders and material topics (Beske et al., 2020; Boiral, 2013). Companies’ reports often included vague justifications for omitting relevant information, not allowing intraindustry comparability, and

limiting the use of NFR as a legitimacy tool with stakeholders (Boiral & Henri, 2017; Cho et al., 2015; Lock & Seele, 2016; Pizzi, Venturelli, et al., 2020). In this regard, Diouf and Boiral (2017) analysed the perceptions of stakeholders on NFR quality and found that GRI principles were only vaguely applied and were often altered to suit the needs of companies. Rosati and Faria (2019) stressed the relevance of institutional factors in including SDGs in non-financial reports by showing that companies that reported SDGs were most likely to be located in countries with high levels of national corporate social responsibility, indulgence and individualism and lower levels of market coordination, employment protection, power distance, and long-term orientation.

However, our findings on the research about the application of NFR in specific industries and contexts were mixed. Tiwari and Khan (2020) described the impact of Industry 4.0 on companies' non-financial activities and reporting practices. They concluded that Industry 4.0 capabilities could partially contribute to the enhanced reliability and accuracy of NFR. Font et al. (2016) showed that companies in the cruise industry did not satisfy stakeholders' informational needs because they tended to overreport non-material issues and underreport material issues. Other papers analysed universities' NFR practices and found that NFR was the primary tool used by universities to manage initiatives related to sustainable development and to communicate essential strategic aspects to stakeholders (Alonso-Almeida et al., 2015; Yáñez et al., 2019), while the major barriers to the adoption of NFR in the education industry were governance structures and bureaucracy (Alonso-Almeida et al., 2015).

Finally, another set of research focused on recent attempts to integrate financial and non-financial information into a single report, that is, the IR. Adams (2015) highlighted that such a reporting form had “the potential to shift the thinking of corporate actors to better align notions of profit maximisation with the wellbeing of society and the environment” (p. 25), as well as emphasising long-term orientation and encouraging a reflection on the value creation process and the business model. However, the integration of financial and non-financial information into a single report has been widely criticised by other scholars (Brown & Dillard, 2014; Flower, 2015). Flower (2015) underlined that the IR framework was not able to encourage renewed and broader thinking of value, since providers of financial capital remained the primary recipients of corporate reports. Thus, the IR framework proposed a non-innovative managerial capitalist perspective in which managers prioritised profit maximisation for shareholders at the expense of sustainability. Brown and Dillard (2014) also criticised IR for its inability to provide information that was useful for stakeholder groups other than shareholders. Thus, the IR framework, despite proposing the integration of financial and non-financial information into a single report, resulted in the same conventions as the traditional financial reporting regime, which was clearly focused on creating value for investors (Adams, 2015; Brown & Dillard, 2014; Flower, 2015). Further research themes for the IR framework are discussed in the next paragraph, namely, the green cluster.

## **4.2 Green Cluster—The Integrated Reporting framework**

The International Integrated Reporting Council (IIRC) proposed IR as a new corporate reporting norm (de Villiers & Sharma, 2020). IR combined financial and non-financial information in a single report, leading to an increase in the extent of forward-looking disclosure (Kiliç et al., 2015), analyst forecast accuracy (Bernardi & Stark, 2018) and the likelihood of information access by stakeholders (Reimsbach et al., 2018). The IR framework issued by the IIRC identified six different forms of capital (natural, social and relationship, intellectual, human, financial and

manufactured capital) that companies must consider in their NFR (Dumay, 2016; Simnett & Huggins, 2015). Scholars agree that intellectual capital is not an alternative reporting form but an essential part of NFR (Beattie & Smith, 2013; de Villiers & Sharma, 2020; Dumay et al., 2019).

The recent diffusion of IR is related to the European Directive 95/2014 which framed NFR as a part of the mandatory corporate reporting for large public-interest entities aimed at rebuilding trust between companies and stakeholders (Dumay et al., 2019). Directive 95/2014 forces companies to rethink the reliability of their reporting, enforces potential penalties and increases the activity of internal auditors.

As shown by Aureli et al. (2020), over the last few decades, the quality of information and internal IR procedures have improved, while the length of reports has decreased, since companies tend to disclose only fully reliable information. Landau et al. (2020) suggested that the adoption of IRs in settings where NFR was not mandatory could negatively affect the market value of equity. They ascribed such a negative influence to the higher proprietary costs of releasing NFR in countries without NFR regulations. In contrast, other scholars (Salvi, Vitolla, Raimo, et al., 2020; Vena et al., 2020) pointed out the role of IRs in reducing the cost of capital by companies. Salvi, Vitolla, Raimo, et al. (2020) linked such reductions to the higher level of transparency that IR provided in the representation of the intangibles, while Vena et al. (2020) showed how cultural dimensions such as low power distance, high level of masculinity and large collectivistic values had a similar effect. These cultural features, together with the adoption of IR, promoted the reduction of information asymmetries between companies and stakeholders, greater transparency in communicating the companies' risks and higher risk aversion from managers.

The quality of IR was positively influenced by firm size, profitability, leverage and institutional ownership (Vitolla, Raimo, et al., 2020). Conversely, the quality of IR is negatively affected by ownership concentration and managerial ownership at the firm level (Raimo et al., 2020; Vitolla, Raimo, et al., 2020). At the country level, IR quality was positively influenced by the civil law system (Vitolla, Raimo, et al., 2020) and national cultural features, such as lower power distance, higher uncertainty avoidance, collectivism, feminism, and restraint (Vitolla et al., 2019). Regardless of the quality of NFR, even in the absence of NFR assurance, IR improved stakeholders' perceptions of corporate non-financial performance compared to stand-alone NFR. This might be because integrated reports contained financial information and were subject to mandatory audit (Reimsbach et al., 2018).

Extended and high-quality intellectual capital disclosure in IR further contributed to decreasing the cost of capital, resulting in increased firm value (Salvi, Vitolla, Giakoumelou, et al., 2020; Salvi, Vitolla, Raimo, et al., 2020). In fact, high-quality intellectual capital disclosure mitigates information asymmetries between companies and stakeholders. It also increases investors' expectations of future cash flows, enabling companies to highlight the relevance of their tangible and intangible resources in the value-creation process (Salvi, Vitolla, Giakoumelou, et al., 2020; Simnett & Huggins, 2015). However, Beattie and Smith (2013) remarked that IR is a necessary, but not sufficient, condition for value creation.

#### **4.3 Blue Cluster—The Effect of NFR on Firm-level Accounting Variables**

The effect of NFR practices on firm-level accounting variables has been explored from several perspectives. Research conducted in China found that companies subject to mandatory NFR

experienced mixed results: some studies found lower profitability (Chen et al., 2018), while others found lower investment inefficiency (Liu & Tian, 2021).

Studies using a cross-country sample (Dhaliwal et al., 2012; Muslu et al., 2019) found that NFR was positively associated with higher analysts' forecast accuracy, especially in stakeholder-oriented countries such as Belgium, France and Italy (Dhaliwal et al., 2012). This association became more noticeable in the years following the adoption of non-financial reports, showing that a long-term commitment to NFR practices was essential for companies to build credibility (Muslu et al., 2019). These studies also highlighted the relevance of independent directors, institutional investors, cross-listing and less corrupted national systems in preventing 'greenwashing' (Yu et al., 2020).

Next, Schreck and Raithel (2018) found a non-linear relationship between NFR and corporate social performance, firm size and visibility. First, companies with higher levels of social performance gained relatively fewer benefits from additional reporting on improved social performance. Second, firm growth encouraged companies to engage in more extended NFR to get additional capital resources. Third, two types of companies provide more detailed NFR: less visible companies seeking legitimacy through NFR and highly visible companies liable to larger stakeholder scrutiny (Schreck & Raithel, 2018).

An analysis of the NFR's quality leads to similar results. The components of firm value (cost of equity and future cash flows) were positively associated with NFR quality (Plumlee et al., 2015). The extent and the quality of NFRs were positively associated with earnings quality (Rezaee & Tuo, 2019) highlighting the role of NFRs in the investors' decision-making process (Plumlee et al., 2015; Rezaee & Tuo, 2019).

Research focusing on IR has reached analogous conclusions. A high level of alignment with the IR framework led to improved analyst forecast accuracy, which reduced the cost of equity (Zhou et al., 2017). High-quality IRs increase firm value by reducing the cost of equity (Vitolla, Salvi, et al., 2020), thus increasing firm liquidity (Barth et al., 2017). The analysis of the textual attributes of integrated reports confirmed these findings, which showed that readability of reports was linked to greater market value, conciseness with greater stock liquidity and a balanced tone with higher analyst forecast accuracy (Caglio et al., 2020). When reports have poor readability, conciseness and optimistic tone, companies usually have weaker financial and social performances (Melloni et al., 2017).

#### **4.4 Yellow Cluster—The Relationship between Governance and NFR Practices**

Several characteristics of the board of directors can influence NFR practices, including board size, percentage of independent and female directors, the presence of a CSR committee and the frequency of board meetings (Amran et al., 2014; Arayssi et al., 2020; Fuente et al., 2017; Jizi, 2017; Wang et al., 2020). Larger boards usually have wider experience, allowing for better task allocation with improved non-financial performance and reporting efficiency (Jizi, 2017). Independent and female directors had similar positive effects on NFR (Arayssi et al., 2020; Hollindale et al., 2019; Jizi, 2017). Such directors were often associated with greater alignment with GRI guidelines because of their inclination towards good citizenship and transparency and concerns about societal and environmental issues (Fuente et al., 2017). The same applies to CSR committees (Arayssi et al., 2020; Fuente et al., 2017), resulting in increased quality and credibility of non-financial reports (Amran et al., 2014; Wang et al., 2020).

Other research has shown the effects of CEO characteristics on NFR practices. CEO duality weakens board independence and its ability to monitor management teams and their non-financial initiatives (Araryssi et al., 2020; Haque & Ntim, 2018). However, CEOs with a research background and financial expertise positively affected NFR, which showed that expert CEOs are likely to improve non-financial management, performance and reporting (Shahab et al., 2020).

The companies' governance status affects the extent to which the board of directors acts in the investors' interest (Uyar et al., 2020). Companies could engage in NFR either to signal their superior non-financial performance (i.e., signalling purposes) or to improve stakeholders' perceptions about their non-financial performance (i.e., 'greenwashing'). An efficient governance structure enables companies to report what they have actually achieved in environmental, social and governance initiatives (Uyar et al., 2020).

Institutional ownership also influenced NFR practices. Research from García-Sánchez et al. (2020) showed that companies proposing NFR in line with GRI guidelines tended to integrate information from the 2030 agenda into their reports, especially if they were owned by foreign institutional investors or pension funds. Those results showed that institutional ownership fostered SDGs reporting (García-Sánchez et al., 2020).

#### **4.5 Purple Cluster—Theoretical Perspective Underlying NFR Practices**

The analysis of the literature revealed that several theories could explain the reasons underlying NFR issuance. Both signalling and greenwashing theories suggest that companies provided NFR when the benefits outweighed the associated costs.

The signalling perspective posits that companies provided NFR to enhance stakeholders' awareness of their social and environmental initiatives (Mahoney et al., 2013). The greenwashing perspective considers NFR practices a tool for manipulating stakeholders' perceptions of companies' non-financial activities (Michelon et al., 2015). When greenwashing' drives NFR, there is a discrepancy between the real and the reported non-financial performance (Mahoney et al., 2013). Mahoney et al. (2013) found support for the signalling perspective by demonstrating that companies used NFR to publicise their superior social and environmental performance to stakeholders. In contrast, Michelon et al. (2015) suggested that some companies released NFR with 'greenwashing' intentions, using non-financial reports to pose as good corporate citizens even when they did not have stronger social and environmental performance.

NFR quality analysis could help in understanding the perspective adopted in reporting (Michelon et al., 2015). NFR quality depended on how both users and companies perceived NFR quality and how their conflicting perceptions converged on the practicalities involved in preparing, disseminating, reading and understanding non-financial reports (Helfaya et al., 2019). Users did not perceive quantity as the most significant element in determining NFR quality, as they required material information rather than a large amount of disclosure. A valid measurement of NFR quality should therefore consider several aspects of reporting practices, including: (a) the content of reports, information types, measures and themes; (b) measures of credibility, represented by the adoption of reporting guidelines and assurance practices; and (c) measures of communication, such as the use of visual tools (Helfaya et al., 2019; Helfaya & Whittington, 2019). An association between NFR practices and increased reporting quality provided support for the signalling perspective. When this association does not exist, companies may use greenwashing (Michelon et al., 2015). Large

companies, subject to stock market evaluations, typically release NFR for signalling purposes. This is because these companies need high-quality reporting and active stakeholder engagement processes as a result of public scrutiny and pressure on their social and environmental practices (Michelon et al., 2015).

According to stakeholder theory, stakeholder engagement is essential to enhancing companies' non-financial strategies and sustainable development (García-Sánchez et al., 2013). Stakeholder theory suggests that corporate survival depends on the successful management of relationships with stakeholders interested in financial and non-financial performance. Stakeholders need to know the impact of corporate non-financial activities on deciding whether to continue providing resources to companies or penalise inadequate performance (García-Sánchez et al., 2013; Lokuwaduge & Heenetigala, 2017). The expectations of stakeholders about corporate behaviour are aligned with the culture. Different cultures have different values, social norms, and beliefs, generating different NFR practices (García-Sánchez et al., 2013). Companies in more feminist and collectivist countries were likely to issue reports facilitating decision making among a broad set of stakeholders, such as companies with a higher percentage of female and independent directors. These companies operate in countries where individuals want to improve their society's quality of life, rather than pursue individual benefits (García-Sánchez et al., 2013).

From a different perspective, legitimacy theory posits that companies receive authorisation to operate from society because of economic and social behaviour (Lokuwaduge & Heenetigala, 2017). To promote corporate image and legitimacy, managers can influence stakeholders' perceptions through communication strategies via NFR (Lai et al., 2016; Lokuwaduge & Heenetigala, 2017). Some studies have argued that NFR allows companies to overcome pressure from influential stakeholders while safeguarding their legitimacy (Lokuwaduge & Heenetigala, 2017). Other scholars have shown that companies do not adopt NFR practices to address specific legitimacy threats related to scarce non-financial performance (Lai et al., 2016).

To gain legitimacy, companies could pursue a strategic or institutional approach (Beck et al., 2017; Hahn & Lülfs, 2014). Institutional theory assumes that social norms determine corporate structure, management style, stakeholder perceptions, and evaluation of corporate activities (Beck et al., 2017). Legitimacy results from the social norms of the context to which managers conformed (Hahn & Lülfs, 2014). Under the institutional approach, integrating the GRI or IR framework could represent a shift towards achieving legitimacy, showing compliance with social norms (Beck et al., 2017). From a strategic perspective, the company could use and manipulate GRI or IR as evocative symbols to enhance the company's legitimacy (Beck et al., 2017).

GRI guidelines require companies to provide transparent, complete and balanced reports. The reporting of sustainability-related incidents was necessary but could threaten corporate legitimacy. Stakeholders might perceive the negative environmental and social consequences of corporate activities as inconsistent with social norms and withdraw companies' social permission to operate. However, not reporting negative aspects could lead stakeholders to consider the reports unreliable (Chauvey et al., 2015; Hahn & Lülfs, 2014). Even in this case, companies could adopt a strategic or institutional legitimacy approach. A company pursuing a strategic approach could seek legitimacy by picturing a negative event as negligible, justifiable, explained and validated by legitimating authorities (for example, regulatory bodies, academics and peers). Conversely, a company applying the institutional approach could mention a negative event and provide ideas, intent or measures for tackling or avoiding it in the future (Hahn & Lülfs, 2014).

The comparison among reports showed that the reporting of adverse events decreased over time, even though the extent of NFR increased. This might be because NFR practices have passed a “legitimacy test” and undertaken a “normativity process” (Chauvey et al., 2015). Normativity is the degree to which rules and procedures become accepted and standardised. The application of norms in NFR practices may result from legislative measures, making them compulsory (e.g., directive 95/204/EU) or the release of reporting standards (e.g., GRI guidelines). When normativity occurs, practices are widely adopted by companies and become part of the basic requirements for legitimacy.

#### **4.6 Aqua Cluster—NFR Assurance Practices**

The NFR assurance process comprises an audit of report content by independent auditors, assuring the quality and reliability of the information reported through an assurance statement (Boiral et al., 2019). The assurance process can imply an NFR restatement, resulting in improved NFR reliability (Michelon et al., 2019).

A reasonable level of assurance allows companies operating in environmentally sensitive industries to increase the value and relevance of NFR, even though stakeholders undervalue the adoption of NFR assurance, as the additional costs of assurance outweigh its benefits (Radhouane et al., 2020). In line with Radhouane et al. (2020), studies on companies in emerging economies showed that industry affiliation affects the adoption of assurance practices (Hassan et al., 2020; Kuzey & Uyar, 2017). Hassan et al. (2020) explained that Bangladeshi IR adopters, who were required to provide financial audits, were likely to adopt NFR assurance, as financial auditors could also handle the NFR audit, making it less costly. A study on Turkish companies showed that industry affiliation and liquidity were determinants of the adoption of assurance practices, while profitability was an inhibitor (Kuzey & Uyar, 2017). These findings were partly inconsistent with a study by Martínez-Ferrero and García-Sánchez (2017), who found that the strength of the legal system, cultural development, and industry affiliation positively affected the decision to assure NFR. However, industry affiliation was no longer significant when these factors were considered simultaneously, indicating that institutional factors exerted greater pressure on the adoption of NFR assurance than industry affiliation. The authors ascribed this result to the stronger influential effect that cultural and legal aspects had on companies and managers in their assurance decisions when compared to industry pressure. The analysis of assurance statements for GRI-based reports showed that assurance providers used optimistic rhetoric, resulting in a lack of credibility and rarely addressing the problems and weaknesses of NFR. (Boiral et al., 2019; Boiral & Heras-Saizarbitoria, 2020). The explanation lies in the use of NFR assurance as a legitimacy tool and in the low level of assurance provided (Boiral et al., 2019).

The findings of the literature showed that corporate governance factors and the adoption of NFR assurance affected each other. On one hand, companies with a larger, more gender-diverse board and separated CEO and board chairperson roles were likely to assure their NFRs. Higher diversity leads executives to better manage non-financial activities and appreciate how assurance practices enhance information quality and stakeholder confidence (Liao et al., 2018). On the other hand, companies adopting NFR assurance are likely to include sustainability-related targets in CEO compensation contracts to motivate CEOs to engage in actions that lead to good non-financial performance (Al-Shaer & Zaman, 2019).

#### **4.7 Orange Cluster—The Relationship between Institutional Factors and NFR Decoupling Practices**

Companies comply with governmental and non-governmental standards on appropriate corporate activities, such as NFR regulations, to gain political legitimacy. Political legitimacy is the extent to which the government perceives compliance with corporate activities, norms and laws. Political legitimacy is also a strategic resource for companies because it provides greater access to public resources. Political legitimacy therefore makes decoupling more likely (Marquis & Qian, 2014).

NFR decoupling is a part of greenwashing, comprising a full divergence between policies and the implementation of programmes or between the implementation of programmes and the results of these programmes. NFR decoupling is a common practice in emerging economies, where low levels of economic development, institutional quality and living standards favour the misuse of NFR (Marano et al., 2017). Research using a sample of Chinese companies has shown that how companies respond to mandatory NFR varies with their dependency on the government, together with the likelihood of government monitoring (Luo et al., 2017; Marquis & Qian, 2014). Factors such as CEO membership in political bodies, political legacy and availability of financial resources can shape a company's legitimacy position, making NFR decoupling likelier. However, CEO experience as a government official exposed the company to increased government monitoring, discouraging NFR decoupling and encouraging the issuance of high-quality NFR (Graafland & Smid, 2019; Luo et al., 2017; Marquis & Qian, 2014).

NFR quality also changed according to the companies' geographical location. Luo et al. (2017) explained that Chinese companies usually have to deal with institutional complexity, namely, "the incompatible institutional demands arising from the central government and local governments" (p. 321). In terms of NFR, institutional complexity arose from the conflicting requests of local governments that prioritised GDP growth and central governments asking for NFR compliance (Luo et al., 2017). Companies in more institutionally developed regions issued substantive, high-quality NFRs as they needed to show compliance with central government requirements to maintain institutional legitimacy and access to capital (Luo et al., 2017; Marquis & Qian, 2014). Companies in less developed regions aiming to increase manufacturing production are likely to engage in "policy–practice decoupling" (Graafland & Smid, 2019) through symbolic, low-quality NFR. Thus, such companies prioritise the requirements of local governments to gain access to the resources they control, such as land, infrastructure and permits (Luo et al., 2017).

The geographical location of the companies also influenced their chances of achieving global legitimacy. Multinational companies in China or other developing economies often incur the "liabilities of origin," a form of negative stereotyping by foreign stakeholders because of a negative perception of institutional conditions in developing countries (Marano et al., 2017; Tashman et al., 2019). To overcome liabilities of origin and gain legitimacy, these companies adopt international best practices, such as NFR, which allow them to show foreign stakeholders their alignment with international expectations and guidelines (Marano et al., 2017; Tashman et al., 2019).

Liabilities of origin arise from institutional voids in the home countries of multinational companies. These voids limit companies' capacity to achieve remarkable non-financial performance and, together with their need for legitimacy, increase the likelihood of engaging in NFR decoupling, at least at the beginning of their international expansion (Tashman et al., 2019). When they reach a



higher level of internationalisation, multinational companies are exposed to greater scrutiny from global stakeholders. Thus, the likelihood that global stakeholders will uncover misrepresentations in NFR increases. If this were to occur, multinational companies would risk losing their global legitimacy and, consequently, having access to different resources, such as capital and customer support. As a result, a higher level of internationalisation motivates multinational companies to reduce NFR decoupling (Tashman et al., 2019).

#### **4.8 Black Cluster—Environmental Reporting**

Environmental reporting is a corporate response to public pressure to decrease pollution levels and achieve the sustainable development goals proposed by the 2030 agenda. Environmental reports described corporate environmental strategies, which included carbon strategy (Radu et al., 2020). These reports allowed companies to communicate their commitment to environmental and climate issues to stakeholders (Talbot & Boiral, 2018).

An analysis of the environmental reports of companies in environmentally sensitive industries showed that disclosed data are often confusing and inconsistent with GRI requirements, even when companies apply the highest level of GRI guidelines and adopt assurance practices. These companies used different impression management strategies aimed at hiding information about the methods used to formulate carbon reporting. This is true for the sources of greenhouse gas emissions considered. Companies also justify the results by minimising the impact of greenhouse gas emissions and proposing intentions for future commitments (Talbot & Boiral, 2018). However, the extent and quality of environmental reports depended on companies' greenhouse gas emissions, water consumption and assurance adoption. Companies in environmentally sensitive industries are more prone to reporting verifiable environmental information and to assure their environmental reports to enhance stakeholders' confidence and build legitimacy (Braam et al., 2016).

The content of environmental reporting may vary with institutional constraints. Companies from civil law countries spend the most significant effort providing their key stakeholders with information about greenhouse gas emissions and water consumption. Companies in common law countries focus mainly on energy consumption and material usage (Gallego-Alvarez et al., 2017). Looking specifically at greenhouse gas reporting, Chithambo et al. (2020), showed that regulatory, customer and social stakeholder pressures exerted a positive influence on reporting quality. However, creditor and shareholder pressures had a negative effect. These findings show that companies adapt their behaviour to the institutional environment to gain institutional legitimacy (Gallego-Alvarez et al., 2017).

### **5. Discussion and Future Research Avenues**

This paper proposes a systematisation of the most influential literature on NFR that has been published in the last decade.

Scholars have extensively investigated different NFR research topics, often obtaining partial or ambiguous results. This created some research gaps that were made clear during our comprehensive literature review. Our research sample suggests that scholars have mostly examined

NFR in large listed for-profit companies. Some studies have highlighted a limited amount of research focusing on NFR on small-and medium-sized companies and NGOs (Hahn & Kühnen, 2013).

The following table (Table 4) summarises the main managerial implications of the NFR between 2012 and 2020.

**Table 4:** Exemplary references and managerial implications

Cluster	Exemplary references	Key managerial implications
<i>Red</i> – Content of non-financial reports	Adams, 2015; Diouf & Boiral, 2017; Rosati & Faria, 2019	<ol style="list-style-type: none"> <li>1. Including SDGs in non-financial reports is useful for managers in showing to stakeholders how the company is committed to the achievement of the SDGs.</li> <li>2. Including financial and non-financial information in a single report allows capital providers to understand how a company creates value over the time.</li> </ol>
<i>Green</i> – The Integrated Reporting framework	de Villiers & Sharma, 2020; Dumay et al., 2019; Vitolla, Raimo, et al., 2020	<ol style="list-style-type: none"> <li>1. IR promotes the reduction of information asymmetries between companies and stakeholders.</li> <li>2. High-quality IR improves stakeholders' perception of corporate non-financial performance compared to stand-alone NFR.</li> <li>3. IR should include high-quality intellectual capital disclosure, which contributes to decrease the cost of capital.</li> </ol>
<i>Blue</i> – The effect of NFR on firm-level accounting variables	Chen et al., 2018; Dhaliwal et al., 2012; Schreck & Raithel, 2018	<ol style="list-style-type: none"> <li>1. NFR has a positive effect on analysts' forecast accuracy.</li> <li>2. NFR helps companies to build their social legitimacy.</li> <li>3. High-quality non-financial reports generate an improvement in earnings quality.</li> </ol>
<i>Yellow</i> – The relationship between governance and NFR practices	Arayssi et al., 2020; Shahab et al., 2020; Uyar et al., 2020	<ol style="list-style-type: none"> <li>1. A higher gender-diversified board implies a greater alignment of non-financial reports to GRI guidelines.</li> <li>2. The presence of a CSR committee leads to an improvement in quality and credibility of NFR.</li> <li>3. Institutional ownership promotes the inclusion of SDGs information in NFR.</li> </ol>
<i>Purple</i> – Theoretical perspective underlying NFR practices	Hahn & Lülfs, 2014; Mahoney et al., 2013; Michelin et al., 2015	<ol style="list-style-type: none"> <li>1. The approach of managers to NFR influences stakeholders' perception of non-financial corporate activities, which is crucial for companies' legitimacy.</li> <li>2. Both signalling and greenwashing perspective in NFR are used to achieve legitimacy, although the first perspective is less risky than the second.</li> <li>3. To be effective, NFR should conform to the formal and informal institutional requirement of the country where the company operates.</li> </ol>
<i>Aqua</i> – NFR assurance practices	Boiral et al., 2019; Boiral & Heras-Saizarbitoria, 2020; Martínez-Ferrero & García-Sánchez, 2017	<ol style="list-style-type: none"> <li>1. Managers should carefully assess the value added coming from the adoption of NFR assurance, as assurance costs can easily outweigh the benefits.</li> <li>2. The value relevance of NFR enhances firm value.</li> <li>3. NFR assurance is less expensive when companies adopt IR as reporting form.</li> </ol>
<i>Orange</i> – The relationship between institutional factors and	Luo et al., 2017; Marano et al., 2017; Marquis & Qian, 2014	<ol style="list-style-type: none"> <li>1. Managers should avoid NFR decoupling, as its detection can limit the access to financial and non-financial resources.</li> </ol>

NFR decoupling practices		2. NFR decoupling, if detected, has a negative impact on a company's internationalisation process.
<i>Black</i> – Environmental reporting	Braam et al., 2016; Radu et al., 2020; Talbot & Boiral, 2018	<ol style="list-style-type: none"> <li>1. Environmental reports should be consistent with GRI requirements.</li> <li>2. Environmental reports should include a complete set of information about companies' environmental performance, including, but not limited to, greenhouse gas emissions, water consumption, energy consumption, and material usage.</li> <li>3. Reliable environmental reporting has a beneficial effect on corporate image and legitimacy.</li> </ol>

In the future, additional research is needed on the relationship between market expectations and NFR content. Studies have often stressed the importance of meeting the information needs and expectations of all stakeholder groups, but few have examined the process of stakeholder engagement (de Villiers et al., 2014). Our analysis highlights that NFR is mainly shareholder oriented and widely ignores the informational needs of other stakeholders (Flower, 2015). A more advanced and integrated view of the business recognises that stakeholder concerns can influence long-term financial returns (Flower, 2015) while presenting considerable risk if not addressed. Future studies should pay more attention to additional categories of stakeholders who require NFR.

The IR framework has recently become more relevant to academic studies. Future research could consider underexamined topics, such as the determinants of the quality of IR and the role of intellectual capital disclosure within the reporting process (Dumay, 2016). These factors are relevant for understanding whether and how IR can increase firm value (Salvi, Vitolla, Raimo, et al., 2020; Vitolla et al., 2019; Vitolla, Salvi, et al., 2020).

Several studies have examined the impact of NFR practices on firm-level accounting variables. While the relevance of this topic is widely recognised, additional research is needed to verify its persistence in relation to the recent move from voluntary to mandatory NFR practices. In addition, companies with superior non-financial performance have often used voluntary NFR as a strategic tool to increase their market value. One of the major issues of the NFR is the absence of a mandatory common standard framework.

Policymakers should also pay attention to NFR compliance with their legislative requirements. Do companies assume an attitude of mere compliance with regulatory obligations? Has normativity already occurred? Are there differences between mandatory NFR early adopters (e.g., South Africa) and other countries?

While the relationship between governance and NFR has frequently been debated in the literature, future research could explore more in-depth how internal board committees or the personal traits of board directors (e.g., education or religiosity) affect NFR. For example, is the religiosity of the CEO or board members reflected in NFR practices?

It could also be useful to employ new theories to provide a clearer and more complete interpretation of the characteristics, determinants and effects of NFR. For instance, social norm theory posits that individuals tend to conform to the behavioural norms of their community. Social norms contribute to the distinction between right and wrong behaviour. They also generate expectations for compliance with norms. Do companies engage in NFR only to comply with social expectations? Do social norms prevent unethical behaviours, such as greenwashing?

## **6. Conclusions**

In the present paper, we propose a comprehensive analysis of the NFR literature from 2012 to 2020. The present study also offers methodological best practices for conducting literature reviews grounded on bibliometric analysis through a ten-step process, which also guarantees the reproducibility of the study by applying quality assurance protocols from the medical field.

In analysing the whole field of NFR, we are required to limit our analysis to a restricted but representative selection of papers composed of the upper 90<sup>th</sup> percentile of each cluster. This approach inevitably reduces the richness within each cluster in favour of a handy picture of the NFR field of study. Consequently, we invite scholars and practitioners to consider the analysis proposed for each cluster as a springboard for exploring the content of each cluster using the full list of papers available in the supplementary material.

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