

Developments and dynamics of non-financial reporting in the banking sector: the impact on the Italian context

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Abstract

Purpose – This study explores advancements in non-financial reporting (NFR) within the Italian banking sector over the past five years, assessing the influence of regulatory frameworks such as the European Taxonomy and Sustainable Development Goals (SDGs). The research aims to understand how sustainability, governance and the integration of financial and non-financial data have evolved in response to regulatory and stakeholder pressures.

Design/methodology/approach – A multi-method approach is employed, combining bibliometric analysis of NFR literature (2018–2023) with content analysis of NFR from Italian banks. Automated content analysis using Leximancer software identifies key themes, including risk management, sustainability and corporate governance. This multi-method strategy allows for a comprehensive examination of trends and regulatory impacts on NFR practices.

Findings – The findings indicate significant progress in NFR, driven by evolving regulatory requirements and growing stakeholder expectations. The integration of environmental, social and governance (ESG) criteria has expanded, enhancing transparency in sustainability practices. Governance structures are increasingly central to managing non-financial risks, and external audits play a crucial role in reinforcing the credibility of NFR reports. The study also highlights the persistent challenge of standardizing reporting frameworks to ensure comparability across institutions.

Originality/value – This research provides a focused analysis of NFR developments within the Italian banking sector, offering insights into their implications for corporate governance and sustainability reporting. By identifying key trends and challenges, the study underscores the pivotal role of NFR in advancing sustainable development in banking. The findings contribute to the ongoing discourse on improving NFR practices and aligning them with global sustainability objectives.

Keywords Non-financial reporting, Global reporting initiative, Sustainability accounting standards board, European financial reporting advisory group, Content analysis, Italian banking sector

Paper type Case report

1. Introduction

Nonfinancial reporting (NFR) is increasingly prevalent across various countries and industries, reflecting a growing interest among companies in addressing environmental,

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social, and governance (ESG) aspects as part of their transparency and stakeholder engagement approaches (Dumay *et al.*, 2019; Galletta *et al.*, 2022; Manes-Rossi *et al.*, 2020; de Villiers and Alexander, 2014). The prominence of NFR has increased in response to the growing societal and regulatory demands for enhanced transparency and accountability in corporate environmental and social performance (Crous *et al.*, 2021). Legislative mandates for non-financial disclosures exist globally, including Australia (Corporations Act, 2001 and the National Greenhouse and Energy Reporting Act, 2007), China (Security Regulatory Commission for listed companies and the Shanghai and Shenzhen Stock Exchanges markets), South Africa (King Code of Governance Principles for South Africa), North America (Securities and Exchange Commission requires in Canada in US companies), Europe (European Directive 95/2014/EU), and several Latin American countries (Colombia, Argentina, Chile, and Brazil) associated with the adoption of the Sustainable Development Goals (SDGs). Recent efforts by several institutions, such as the International Integrated Reporting Council (IIRC), Value Reporting Foundation (VRF), Sustainability Accounting Standards Board (SASB), and the European Financial Reporting Advisory Group (EFRAG), have sought to standardise NFR practices. Furthermore, the new European Directive on Taxonomy seeks to identify accounting standards that can be adopted to objectively measure sustainability efforts. In Italy, legislative decree no. 254 of 30 December 2016 mandates that public-interest entities publish non-financial statements. The obligation to publish a declaration (individual or consolidated) of a non-financial nature, known as the “Dnf”, applies to relevant public interest entities (Eipr). This includes Italian companies issuing securities listed on an Italian or European regulated market, banks, insurance companies, and reinsurance companies that, on average during the financial year, employ over 500 employees and meet at least one of the following criteria: a total balance sheet of 20,000,000 euros or total net revenue from sales and services of 40,000,000 euros. The National Commission for Society and the Stock Exchange (CONSOB) oversees compliance with these requirements. Implementing the NFR in the Italian banking sector has shown notable progress, driven by regulatory requirements and the need for enhanced transparency in sustainability practices. Recent studies indicate that Italian banks have increasingly integrated NFR into their reporting frameworks, emphasising ESG factors to meet stakeholder demands and regulatory compliance (Schróder, 2022). The quality of these reports is influenced by various determinants, including bank size, governance structure, and complexity of their operations (Khan *et al.*, 2021). Moreover, CONSOB’s supervision ensures that non-financial disclosures align with established standards, thereby enhancing the reliability and comparability of the information provided (Biondi and Bracci, 2018). This regulatory oversight is crucial, as it helps mitigate risks related to greenwashing and ensures that banks’ sustainability efforts are both credible and substantive (Mies, 2024). The significance of NFR lies in its potential to influence long-term financial results and support a comprehensive risk analysis (Flower, 2015; Secinaro *et al.*, 2020). Evidence suggests that robust NFR practices can mitigate systemic risk and foster sustainability practices within companies (Cuomo *et al.*, 2022). The increasing regulatory and societal demand for transparency in the banking sector has pushed institutions to improve their non-financial disclosures, particularly in areas such as risk management (Adelopo, 2017). Such disclosures can help stakeholders identify early signs of financial distress, which was a crucial factor in past financial crises. Furthermore, the current literature highlights the critical themes and frameworks necessary for effective NFR, emphasising the integration of financial and non-financial information to reflect a company’s true value over time (Diouf and Boiral, 2017; Rosati and Faria, 2019; De Villiers and Sharma, 2020; Vitolla *et al.*, 2019). Despite growing research interest in NFR, there is a need to explore its application and evolution within specific sectors and national contexts. This study aims to fill this gap by investigating the advancements and dynamics of the NFR within the Italian banking sector over the past five years. By analysing non-financial reports from Italian banks, this study shows the sector’s shift towards more comprehensive and transparent reporting driven by evolving regulatory standards and stakeholder demands. This study investigates the impact of

these changes on sustainability risk management and corporate governance, providing insights for academics and practitioners interested in integrating financial and non-financial aspects into their business reporting activities. Additionally, this study addresses the critical issues raised by previous studies and proposes further investigation into financial and non-financial information, intellectual capital value, and the prevention of greenwashing through external audits (Turzo *et al.*, 2022; Brescia and Campra, 2023). In doing so, it contributes to the understanding of the role of NFR in promoting sustainable development and accountability in the banking sector, offering valuable insights for future research and practice. Therefore, the analysis aimed to answer the following two main research questions:

- RQ1. What is the analysis and time evolution of NFR in the Italian banking system?
- RQ2. Which NFR themes and approaches have been adopted in the Italian banking sector, and which issues need to be explored in more detail?

The study will proceed as follows. In the next section we analyse the literature related to NFR. Section 3 provides an overview of the methodological approach utilised in the research, detailing the steps undertaken to collect and analyse the data. The results section integrates the literature on NFR approaches in the banking sector and, more specifically, on the evolution of these reporting practices in the Italian context. The final section highlights critical areas for future research and offers insights for both academics and practitioners.

2. Literature review

This section analyses the significant themes and criteria that, according to the literature, impact NFR practices. Turzo *et al.* (2022) highlighted eight clusters of implications in NFR.

The main objective was to identify the dominant frameworks and constructs that help to explain the evolution, structure, and implementation of NFR, particularly within the banking sector.

The theoretical foundations underpinning NFR practices are essential to understand the rationale behind the adoption and evolution of reporting standards in the banking sector. Legitimacy theory posits that organisations disclose non-financial information as a means to align with societal expectations and maintain their social licence to operate (Hahn and Lülfes, 2014). In the context of banks, which are under continuous scrutiny by regulators and the public, this disclosure serves to enhance trust and reduce reputational risk. The institutional theory further supports this view by explaining how regulatory pressures, norms, and mimetic behaviours shape the adoption of sustainability-oriented practices, such as those codified in NFR frameworks (Luo *et al.*, 2017). Stakeholder Theory also plays a vital role by framing NFR as a tool to meet the information needs of diverse stakeholders, including investors, regulators, employees, and civil society (Nicolò *et al.*, 2023; Zyznarska-Dworczak, 2018). These theories directly relate to the objective of this study, which aims to assess how NFR practices in the Italian banking sector have evolved in response to regulatory, institutional, and stakeholder pressures.

In this context, the research questions, particularly RQ2, which explores themes and approaches in NFR, are analysed through the lens of these theoretical perspectives, which researchers adopt to interpret and explain the observed practices. The aim is not to claim that these theories guide NFR practices but to use them as conceptual tools for understanding how banks' reporting evolves in response to regulatory, institutional, and stakeholder dynamics.

NFR supports governance by fostering greater gender diversity on boards, creating internal committees to maintain the quality and truthfulness of the information represented, and driving the institutional adoption of the Sustainable Development Goals (SDGs) (Nicolò *et al.*, 2023; Shahab *et al.*, 2020; Uyar *et al.*, 2020). This framework enhances corporate governance by promoting inclusivity, verifying data quality, and aligning with global sustainability objectives (Hahn and Lülfes, 2014; Mahoney *et al.*, 2013; Manes-Rossi and Nicolò, 2022; Michelon *et al.*, 2019). NFR affects insurance activities by creating various benefits, including insurance of real corporate value and reduced risk and costs, owing to a greater representation of reality

(Boiral *et al.*, 2019; Boiral and Heras-Saizarbitoria, 2020). Studies show that forward-looking risk disclosures, as part of NFR, positively impact firm performance by offering clearer insights into future risks (Adelopo, 2017; Crous *et al.*, 2021; Mies, 2024). This is particularly relevant in the banking sector, where effective risk management is essential for maintaining stability and trust (Degregori *et al.*, 2025). Furthermore, adopting NFR practices significantly reduces managers' reporting efforts by simplifying the entire process and eliminating redundancy in collecting and using financial and non-financial data (Luo *et al.*, 2017; Marano *et al.*, 2017). The growing body of literature on sustainable banking reflects the increasing recognition of the role banks play in advancing sustainability goals, particularly in terms of governance and product offerings (Aracil *et al.*, 2021). The report should highlight the bank's efforts to address environmental challenges as required by the Global Reporting Initiative (GRI) standards, including data on greenhouse gas emissions, energy consumption, and the use of resources. Thus, banks can enhance their positive image within the community and gain legitimacy for sustainability initiatives (Braam *et al.*, 2016; Radu *et al.*, 2020). Brescia and Campra (2023) confirmed the themes identified and integrated by Turzo *et al.* (2022). NFR should contain sustainability approaches to investment practices (Adams and Mueller, 2022), external audits to ensure the authenticity of the reported information (Zaman *et al.*, 2021), and the truthfulness of the elements reported following GRI criteria, with special attention placed on the impact of green investments (Birindelli and Palea, 2023; Brescia *et al.*, 2023).

In light of this, the present study aims to fill a double gap: (1) conceptually, by mapping the evolution of key NFR themes and frameworks in the academic literature, and (2) empirically, by examining how these elements have been integrated into the actual reporting practices of Italian banks over the last five years. This dual aim directly supports the study's research questions and contributes to a more nuanced understanding of NFR's development within a highly regulated sector.

3. Method

This study adopts a single research design characterised by a multi-method approach structured into two main parts to ensure a comprehensive analysis of NFR within the Italian banking sector.

First, a bibliometric analysis was conducted to identify, map, and categorise academic contributions related to NFR from 2018 to 2023, with a specific focus on the banking sector. This step helped frame the theoretical landscape and identify gaps in the literature. Second, a content analysis was performed on the actual NFR documents of 30 Italian banks over a three-year period (2020–2022), to empirically validate and extend the insights gathered from the literature. The integration of these two phases allows for a longitudinal, sector-specific understanding of how NFR practices are evolving both theoretically and practically. The bibliometric phase utilises VosViewer for mapping key themes, while the content analysis employs Leximancer software to extract and visualise core concepts from real-world disclosures.

3.1 Bibliometric analysis method

The analysis was based on the evidence provided by Brescia and Campra (2023) and Turzo *et al.* (2022) using the same keywords dedicated to Non-Financial Disclosure to identify related studies, which the authors for the banking sector then customised. This customisation differentiates our study from previous works and allows for a more targeted examination of NFR practices within a critical sector, such as the banking system. The selection of keywords was developed based on the main themes that emerged from the literature and aligned with the study's aim to explore NFR in the banking sector. While we started with a foundation from Brescia and Campra (2023), Turzo *et al.* (2022) we extended and refined the keywords to ensure broader coverage and alignment with sector-specific terminology. These included references to ESG, SDGs, GHG, and other sustainability-related disclosure frameworks. The

final list was shaped by iterative testing and validation to capture a wide range of relevant academic articles. We selected the Scopus database as our source because of its extensive peer-reviewed coverage and its compatibility with bibliometric software tools. Focusing specifically on the banking sector, this study provides insights into how banks align with NFR requirements to integrate Environmental, Social, and Governance (ESG) factors into their evaluation and reporting frameworks. This sector-specific approach highlights the unique regulatory impacts, stakeholder demands, and governance structures that influence the NFR. We used the following keyword research strings:

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*' AND 'Bank'*.

The period under analysis spans from 2018 to 2023. Italian law on NFR became mandatory in 2016 with the issuance of Legislative Decree 254/2016 on 31 December 2016, which adopted Directive 2014/95/EU. This marked the beginning of formal NFR obligations for public-interest entities in Italy, including banks. While 2017 saw the first adoptions and studies on NFR in Italy, the full implementation and widespread effects of the law, particularly with regard to integrating the Paris Pact and expanding it to include broader environmental indicators, only started to materialise in 2018 (Rosa *et al.*, 2022). As a result, our study focuses on the period starting in 2018 as it represents the point at which significant legislative integration and tangible changes in reporting practices began to take effect in the Italian banking sector. By focusing on this period, we can capture the most relevant developments and effects in response to these regulatory shifts.

This study adopted a scientific workflow to develop the method using the following five steps (Zupic and Čater, 2015):

- (1) Study design
- (2) Data collection
- (3) Data analysis
- (4) Data evaluation
- (5) Interpretation

The main themes were identified thanks to the representation of the co-occurrence representation of the themes through VosViewer (Secinaro *et al.*, 2022; Van Eck and Waltman, 2020).

Following Zupic and Čater (2015), we applied a structured bibliometric workflow involving study design, data collection, analysis, and interpretation. The bibliometric visualisations were developed using VosViewer, which enables the construction and visualisation of bibliometric maps based on co-occurrence of keywords, providing insights into thematic clustering and trend development over time (Van Eck and Waltman, 2020).

3.2 Content analysis and case studies

The content analyses NFR created and published by 30 banks in Italy in the three years from 2020 to 2022 (with the last publication in 2023) under the supervision of CONSOB. The banks included in the analysis were selected based on the following criteria: (1) classification as public interest entities under Legislative Decree 254/2016, which mandates the publication of non-financial reports (in Italy DNF); (2) availability of three consecutive years of reports (2020–2022); and (3) supervision by CONSOB (the Italian financial markets authority). These criteria ensure the inclusion of a homogeneous group of financial institutions compliant with

national and EU non-financial disclosure obligations. The final sample comprises 30 banks that met all these conditions.

The reference context was homogeneous to avoid generating differentiation linked to different countries (Yu, 2020). As detailed by Massaro *et al.* (2018), content analysis utilised Leximancer software. As described by Brescia *et al.* (2023), Leximancer conducts automated content analysis by recognising key concepts and references linked to a central theme within the text. This approach ensures the identification of inferences within a text using a valid and replicable methodology (Krippendorff, 2018). Leximancer further facilitates visual content representation and positioning of concepts on a map according to their relative significance. To ensure replicability, the content analysis was conducted independently by three researchers using a systematic process. The reports were pre-processed to ensure format uniformity, after which Leximancer was used to extract key themes and concepts. Each researcher independently reviewed the automated outputs, and results were cross-validated through a triangulation process to resolve discrepancies. This collaborative approach reduced subjectivity and ensured the consistency and reliability of the findings. All steps, including software configuration and inclusion parameters, were documented to support future replication of the study. The connections between concept circles on the map signify the most frequent co-occurrences, with potential additional connections (Hristov *et al.*, 2021).

4. Results

The analysis adopts a multi-methodological approach, the first to integrate the existing literature on NFR in the banking sector through a bibliometric analysis of the sources of the last five years and the second through a content analysis over three years, allowing a multi-year perspective (Lewis, 2007) in the Italian context.

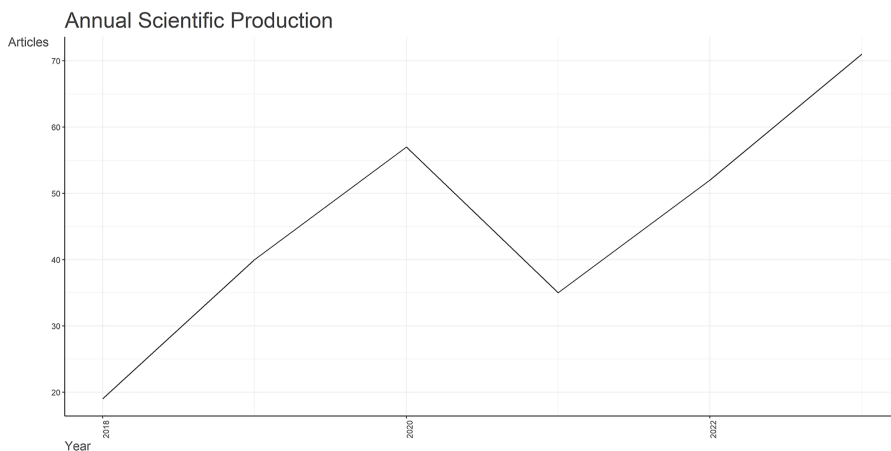
4.1 Bibliometric analysis of literature

In the initial analysis, 531 results were selected. The sample size was reduced to 360 from 2018 to 2023 (Table 1). Only 287 articles were selected, 277 of which were in English. Eliminating duplicates reduced the sample size to 274 documents, with an annual growth of 30.17%. The average document age was three years, and each document received an average of 13.29 citations. Regarding content, 356 keywords (keywords plus) were identified as the most frequent within the articles under analysis. The analysis included the contributions of 739 authors. Collaboration played a significant role, with an average of 3.03 co-authors per document, and 30.66% of the studies involved international co-authorships. All documents considered for analysis were articles.

Interest in this topic has increased in recent years (Figure 1). This increase in academic production highlights the growing relevance of NFR in the banking sector, especially after the introduction of Legislative Decree No. 254 of 30 December 2016 in Italy, which made it mandatory for relevant public-interest entities, including banks, to publish individual or consolidated non-financial declarations. This legal obligation, monitored by CONSOB, along with voluntary adoption by other institutions, has contributed to a significant rise in research and institutional interest. Figure 1 illustrates this trend, visually confirming the sharp increase in scientific production as a proxy for the broader institutional and academic engagement with sustainability and ESG disclosure practices in the financial sector. The slight decrease in the period between 2020 and 2021 likely reflects the broader impact of the COVID-19 pandemic on academic productivity and institutional focus, as researchers and institutions initially shifted attention to crisis management and operational adaptation. However, the strong growth observed in 2022 and 2023 suggests a renewed and intensified interest in sustainability reporting, driven by regulatory evolution, including the European Green Deal, the new Corporate Sustainability Reporting Directive (CSRD), and the implementation timeline of the

Table 1. Main information

Description	Results
<i>Main information about data</i>	
Timespan	2018:2023
Sources (Journals, Books, etc)	156
Documents	274
Annual growth rate %	30.17
Document average age	3
Average citations per doc	13.29
References	1
<i>Document contents</i>	
Keywords Plus (ID)	356
Author's keywords (DE)	862
<i>Authors</i>	
Authors	739
Authors of single-authored docs	28
<i>Authors collaboration</i>	
Single-authored docs	30
Co-Authors per Doc	3.03
International co-authorships %	30,66
<i>Document types</i>	
Article	274
Source(s): Authors' elaboration	

**Figure 1.** Annual scientific production on non-financial reporting in the banking sector (2018–2023). Source: Created by authors

updated 2021 GRI Standards. This rebound underlines the resilience of academic engagement with NFR and its increasing alignment with SDGs.

Co-occurrence analysis identified six main groups of keywords (Figure 2).

The first group (highlighted in red) refers to the THEORIES associated with nonfinancial information for the banking sector. The main ones adopted by the current literature to explain the adoption of NFR documents are classic ones, including legitimacy theory (Maama, 2021;

The second macro-area (highlighted in yellow) focuses on DISCLOSURE PRACTICES IN THE BANKING SECTOR. This group highlights how banks produce sustainability and integrated reports to improve transparency and enhance risk management (Quick and Inwinkl, 2020; Yurtsever and Frat, 2021). The content relates to how ESG factors are disclosed and their implications on operational decisions. Unlike pure investment analysis, this group reflects internal processes (e.g. energy efficiency, climate change strategies, and social initiatives) and their subsequent disclosure through structured reports. These disclosures contribute to shaping a public image of responsibility, influencing customer relationships and compliance (Di Nallo *et al.*, 2023; Hassan *et al.*, 2023).

The third group (blue) focuses on SUSTAINABLE DEVELOPMENT AND ESG REPORTING. While it appears partially overlapping with the fourth group, its distinguishing feature lies in the integration of ESG factors into broad sustainability strategies and performance disclosures (Moneva *et al.*, 2023). Central themes include ESG compliance, sustainable finance, climate risks, and transparent banking operations. The group connects broader SDG commitments with specific ESG metrics, revealing an emerging alignment between global goals and the internal policies of banks.

The fourth group (purple) centres on GOVERNANCE APPROACHES TO SUSTAINABILITY. Unlike the third group, which emphasises ESG content, this cluster highlights the mechanisms through which governance bodies operationalise sustainability (Aguado-Correa *et al.*, 2023; Ramos *et al.*, 2022). This includes sustainability committees, stakeholder engagement procedures (e.g. materiality assessments), board-level sustainability oversight, and reward systems linked to sustainability KPIs. This group confirms how the governance infrastructure directly shapes sustainability performance and disclosure credibility (Ding *et al.*, 2022; Formisano *et al.*, 2018).

The fifth group (green) refers to the connection between corporate social responsibility and FINANCIAL PERFORMANCE (Chang *et al.*, 2023; Crous *et al.*, 2021; Gutiérrez-Ponce and Wibowo, 2023; Sapiri and Putra, 2023; Zahid *et al.*, 2020). Key Performance Indicators (KPIs) based on financial and non-financial themes and machine learning can support governance and stakeholders in their choices. The green Financing portfolio affects the Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), and Operating Expenses to Operating Income (BOPO), as well as the CO₂ emissions of companies that purchase green bonds, thus reducing emissions. Furthermore, Legal, Philanthropic, and Ethical dimensions positively affect financial performance. Within this group, it is possible to identify themes such as profitability (Bidari and Djajadikerta, 2020; Hermawan and Gunardi, 2019; Munjal and Sharma, 2019; Supriyadi *et al.*, 2019) and focus on commercial banks (Akhter *et al.*, 2023; Halid *et al.*, 2021; Kolsi *et al.*, 2023) and Islamic banks (Mahmuda and Muktadir-Al-Mukit, 2023; Probahudono *et al.*, 2022), by examining the effects related to the corporate social responsibility. Commercial banks play a catalytic role in the adoption of reports linked to environmental sustainability by the companies they finance and interact with. At the same time, Islamic banks are oriented towards ethical investments with a greater financial return, in which the risk is shared as long as NFR provides sufficient information between the parties.

The last group (highlighted in light blue) focuses on issues related to the adoption of REGULATIONS IN THE EUROPEAN UNION and the associated performance criteria and ESG indicators (Gazzola *et al.*, 2020; Gutiérrez-López and Abad-González, 2020; Komarnicka and Komarnicki, 2022; Santos and Rodrigues, 2021; Schröder, 2022). Adopting standards based on ESG factors remains inconsistent and requires adaptation and harmonisation with sector specificity, which the European Community still needs to develop (Kumari and Naresh, 2023).

To complement previous analyses, a trend topics analysis was performed using the Bibliometrix R package, which allows the visualisation of the average year of occurrence for each keyword and its frequency. While the previous figure (Figure 2) identifies clusters of thematically connected terms, Figure 3 provides a diachronic perspective that reveals when certain themes became more prevalent within the literature. The keywords plotted in the trend topics chart are not arbitrarily selected but derived directly from the author keywords and

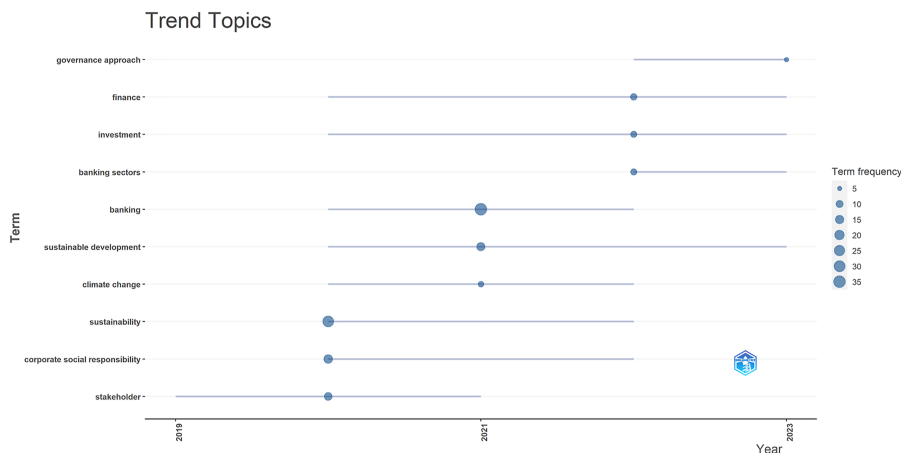


Figure 3. Trend topics in the banking NFR literature (2019–2023). Note: Bubble size indicates frequency and horizontal placement indicates average year of occurrence. Source: Created by authors

keywords plus metadata fields of the articles retrieved from the Scopus database. Their placement along the timeline corresponds to the average publication year of the documents in which they appear. This methodological integration allows for a better understanding of the evolution of academic interest on specific topics over the years and directly supports the identification of emerging and declining areas of research. By analysing the trend topics (Figure 3), it is possible to identify significant elements that allow us to grasp the direction of international debate. From 2018 to 2021, the relationship between NFR and stakeholders will be prioritized among these themes. According to scholars, bank stakeholders play a central role in the information provided through NFR (Herold *et al.*, 2020). The Global Reporting Initiative supports an approach based on the stakeholder theory of involving various subjects in defining the material topics to be represented in a document (Macini *et al.*, 2022). However, this approach is merely linked to standards and requires continuity to date. Between 2020 and 2022, it will be possible to conduct systematic analyses of the meaning of corporate social responsibility in banks associated with the environmental aspects of sustainability and climate change, identifying the critical issues that have emerged in representing these themes (Breeze and Fernández Vallejo, 2020; Maama and Gani, 2022; Santos and Rodrigues, 2021; Yang *et al.*, 2021). The research trends that have begun in recent years and are still engaging in the academic community refer to sustainability, which is mainly linked to investments and financing. These include banks' difficulty reporting and measuring ESG aspects associated with sustainable finance and changes in the approach that should lead to green investments to stimulate pollution reduction (Dong *et al.*, 2021). These include banks' difficulty reporting and measuring ESG aspects associated with sustainable finance (Komarnicka and Komarnicki, 2022). The analysis of investments also concerns how banks report the different types of activities linked to investments in specific sectors (e.g. alcohol, tobacco, weapons) and the social sustainability approaches promoted (Bonifácio Neto and Branco, 2019). Simultaneously, the latest analyses explore the impact of new reporting standards associated with investments in NFR (environmental and social) performance (Kolsi *et al.*, 2023). An emerging topic in the literature concerns the relationship between governance activities and performance capabilities, including financial and non-financial results (es. SDGs) and analysis of the activities carried out (Chagas *et al.*, 2022; Gutiérrez-Ponce and Wibowo, 2023).

Table 2 highlights the themes and approaches adopted in the literature, confirming and integrating the elements of NFR within the banking sector. The left-hand column highlights core

Table 2. Integration of literature on NFR based on bibliometric analysis

NFR variables (Turzo <i>et al.</i> , 2022; Brescia and Campra, 2023)	Bibliometric analysis
SDGs	x
Financial and non-financial and value	
IIRC six capital	x
Intellectual capital and value	
IIRC framework affects high quality of corporate information	
Forecasting	x KPI and new technologies (such as machine learning)
Social legitimacy	
Support decision-making process	x and reduces risk or grant loans
Gender diversification of the board	x
Internal committees and quality of information	
Institutional push for SDG adoption	
Managerial approach to report non-financial activities	
Adoption of mandatory rules to legitimise activities and reduce risks of greenwashing	
Reduce insurance costs and risks	
Decoupling information and access to unique data	
Environment and GRI adoption	x
Gas emissions, energy consumption, and use of materials	
Presentation of investment	
External audit to guarantee information	
Disclosure and measurement of green investment	x based on taxonomy Common standard (es. GRI) for materiality Common standard (es. GRI) for comparability Common standard (es. GRI) to detect benchmark Standard approach of communication and employee satisfaction based on graduates' approach Taxonomy and circular economy Green Bond Portfolio Legal, Philanthropic, and Ethical dimensions effects on financial results ESG harmonization indexes in Europe

Source(s): Authors' elaboration

themes identified in prior studies (e.g. (Brescia and Campra, 2023; Turzo *et al.*, 2022)) while the right-hand column indicates whether these themes also emerged from the bibliometric analysis carried out in this study. The aim is to visually map the alignment (or gaps) between existing academic research and the current state of scholarly production on NFR, providing a reference framework to understand which areas are well-established and which deserve further empirical or theoretical attention. For instance, strong alignment is observed in themes such as the adoption of the IIRC's six-capital framework, the role of KPIs and machine learning, and gender board diversity. In contrast, other relevant themes, such as the valuation of intellectual capital, the implementation of internal committees, and the impact of external audits, are underrepresented in the recent academic output. This comparison provides a useful guide for researchers and practitioners, highlighting both validated trends and avenues for future research, particularly in areas where practice is evolving faster than scholarly exploration.

4.2 Results of content analysis: Italian banking context

The analysis of 30 banking groups that have published NFR in Italy over the past three years aims to identify key themes and any variation in these elements over time, which influence the content and overall value of the reports.

In 2020, content analysis identified four themes (Table 3). Each theme was associated with a co-occurrence that defined the relationship among themes developed during the year (Figure 4).

Risk is associated with work, sustainability, control, matter, society, system, process, evaluation, level, safety, model, and risk management. Risk is typically managed through internal audits, regulatory compliance, anti-money laundering, risk management, and internal supervisory models. Procedures link these models and systems and define delegation of responsibility, information systems, staff incentives, and remuneration systems. The report

Table 3. Main variables regarding NFR in 2020 published in 2021 in Italian banking context

Theme	Hits
Risk	21,624
Services	14,224
Activities	12,392
GRI	1,554

Source(s): Authors' elaboration

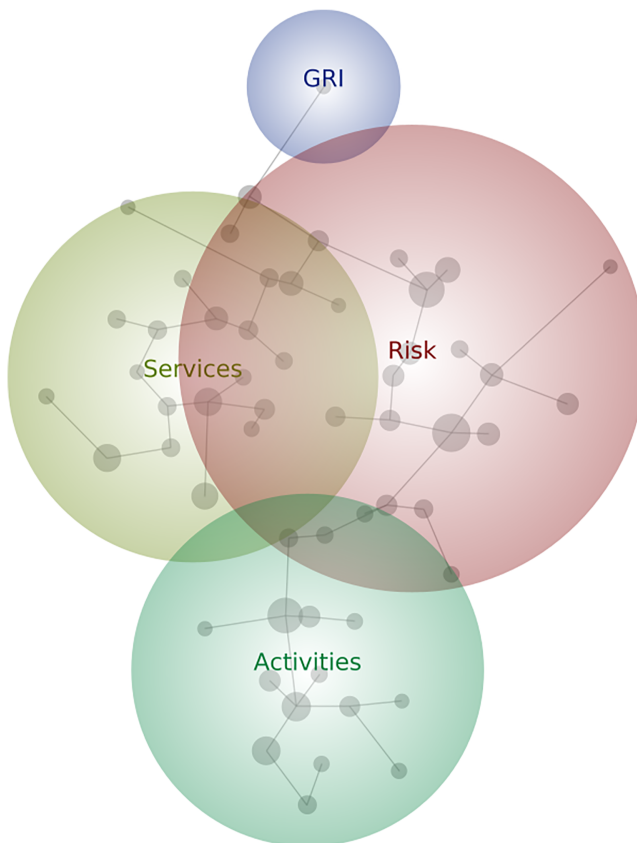


Figure 4. Concept map of main themes and co-occurrences in Italian banks' NFR 2020 (reports published in 2021). Source: Created by authors

describes the function of the risk management system, evaluates the Risk Appetite Framework (RAF), and supports management in defining business models, strategic plans, risk appetite, tolerance thresholds, risk limits, risk governance policies, and the reference processes necessary to define and implement them.

The service theme is related to customers, development, products, social initiatives, and the environment. Banks describe their sustainability initiatives, including efforts to promote electric mobility, reduce plastic use in business operations, and support environmentally sustainable projects, such as financing the installation of photovoltaic panels. In several cases, reference is made to activities implemented and services offered, analysing the social, environmental, and economic impacts without quantifying the impact itself but rather concentrating on the quantity of services provided.

These activities are associated with financial assets, values, credit, economics, and accounts. This Report describes the impact of COVID-19 on the adjustment of the value of loans based on the perspectives defined by the European Central Bank. The Report considers and focuses significantly on the distribution of dividends among shareholders based on the adopted balance sheet criteria and highlights the main adjustments linked to sales and amortisation. Other stakeholders were excluded.

The GRIs do not correlate with the other terms. This highlights how banks adopt the core option, which describes the minimum elements selected by the organisation without specifically describing the connection and derivation with the materiality matrix. The adopted GRI standards were based on the 2016 version.

Five main topics can be identified in banks' 2021 NFR practices (Table 4 and Figure 5).

The risk theme is associated with management, sustainability, services, matter, development, control, work, products, safety, systems, employees, initiatives, objectives, training, principles, businesses, and information. Compared to the previous year, some distinctive and characteristic elements of an evolutionary path have been added. Risk management models introduce some social aspects, including personnel management; gender equality; dialogue with social stakeholders; internal communication oriented towards a balance between private, family, and work life; employee support activities; and dedicated welfare plans. In many cases, diversity and inclusion have been introduced into policies that impact the moral code. Training programmes are also implemented to improve workplace safety and the well-being of external collaborators and management, focusing on promoting employee diversity. These efforts are aligned with the SDGs associated with these areas.

These activities are associated with assets, finances, customers, value, credit, and economics and have been developed as in the previous year.

Company themes were developed independently. In NFR, the support for social and environmental change banks provide to companies is introduced and enhanced. The two most-valued themes concern support in changing corporate governance for greater female representation and support in systems that quantify the environmental footprint.

As in the previous year, GRIs are described with the adoption of core and greater attention to the topics reported, including the dematerialisation of processes probably driven by the

Table 4. Main variables regarding NFR in 2021 published in 2022 in Italian banking context

Theme	Hits
Risk	28,181
Activities	19,105
Companies	2,736
GRI	1,485
Councils	1,458

Source(s): Authors' elaboration

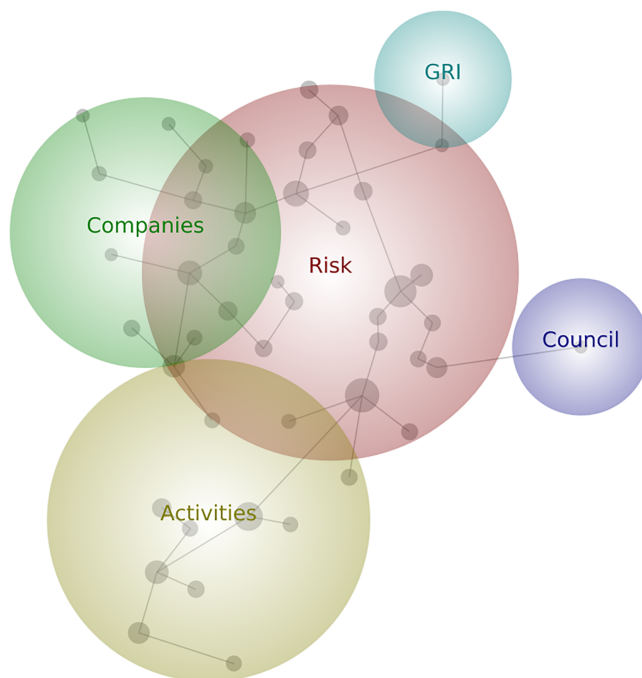


Figure 5. Concept map of main themes and co-occurrences in Italian banks' NFR 2021 (reports published in 2022). Source: Created by authors

impact of the pandemic. The theme linked to the council (Board of Directors) describes the greater awareness and involvement of decision-makers in evaluating the material issues identified and describing the processes of dialogue and transparency towards their stakeholders (Beretta *et al.*, 2023).

For 2023, it was possible to identify four main themes in a report published in 2022 (Table 5 and Figure 6).

The topic related to Management is linked to risks, sustainability, services, materials, work, products, control, initiatives, safety, training, employees, and social and environmental factors. For the first time, bank management activities were conditioned by ESG criteria, which enter ethical codes, providing attention to the preservation of the natural environment, the fight against climate change, the promotion of health and work-life balance, the well-being of the entire community, and the protection of the system of social relationships. When managing customer relations, more attention is paid to the orientation of investments based on sustainability measurements. Furthermore, the issue of materiality is managed by evaluating

Table 5. Main variables regarding NFR in 2022 published in 2023 in Italian banking context

Theme	Hits
Management	26,893
Activities	24,690
Business	2,979
Councils	1,634

Source(s): Authors' elaboration

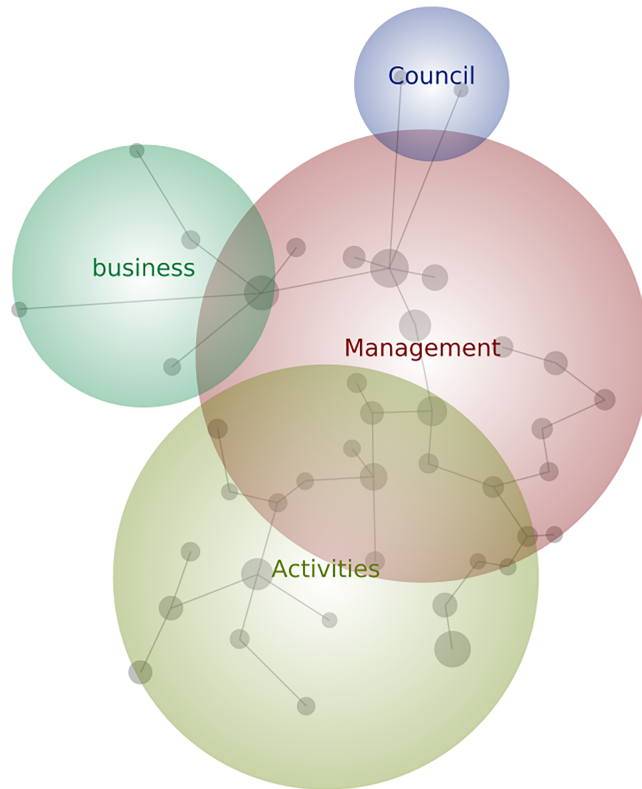


Figure 6. Concept map of main themes and co-occurrences in Italian banks' NFR 2022 (reports published in 2023). Source: Created by authors

both current and potential positive and negative impacts, highlighting the process change in the evaluation of the context and relationships with all stakeholders in the dialogue. This result is evidence of the 2021 GRIs introduced in 2023, the year of publication of the 2022 information. In the dialogue and analysis of the potential impacts, greater attention was paid to salary issues, potential internal conflicts, and potential risks at work. The potential social and environmental impacts considered also invoke issues such as the conservation of underlying ecosystems of the entire economic and social settings in which the bank operates (e.g. in terms of quality of the atmosphere, soil, and bodies of water and in terms of availability of material resources, energy, and water, and health and well-being of local communities).

The theme of the activities is associated with customers, courses, financial value, projects, and companies. The attention and valorisation of intangible elements emerged for the first time. The remuneration activities of even small investors are valued based on experimental ESG criteria and metrics. Through pilot projects, customers become more involved in evaluating results and reorganising information processes, including the consideration of these aspects.

The adoption of measuring sustainable investments through European taxonomy emerged in the redefinition of business models. NFR has become a tool for disclosing compliance by reclassifying financial statement elements based on sustainable investments.

The Council (Board of Directors) is not only responsible for the processes of collection, aggregation, validation, and sending of data and information but also plays a new role in due diligence processes aimed at mitigating the risks generated by banks to customers (Beretta

et al., 2023). According to reporting practices, for the first time, the Board of Directors is involved in analysing processes that consider the value chain and mitigation activities relating to suppliers and creating internal sustainability committees to monitor activities that might lead to environmental and social impacts.

The Board is also required to designate the audit body, or another external entity authorised to certify the mandatory information presented in the disclosure, which includes the new ESG-oriented processes and, where adopted, the new GRIs.

These findings show an incremental and structured progression in the adoption and internalisation of NFR principles within the Italian banking sector over the three-year period. Specifically, they confirm that ESG-related criteria have become increasingly embedded in both management practices and governance structures. The growing inclusion of materiality assessments, due diligence, and sustainability-oriented metrics indicates a shift from formal compliance towards strategic integration, supporting the conclusions drawn in this study regarding the centrality of governance, stakeholder engagement, and standardisation challenges in NFR practices.

5. Discussion

NFR has evolved, which can be noticed both in the literature and its implementation in Italian banking. A bibliometric analysis of the literature confirms the relevance of certain key themes (Table 6). In the banking sector, NFR focuses primarily on adopting the SDGs. However, further analysis is required to explore how institutional theory shapes the adoption of these goals. Some studies have examined the development of reports using the IIRC six-capital framework. There is a need to further investigate the relationship between the different types of capital represented and the quality of these reports in the banking sector (Khan *et al.*, 2021). Additionally, the role of intellectual capital and the integration of financial and non-financial values requires a more in-depth examination in this context. Both the general literature and research specific to the banking sector emphasise the importance of decision-making processes that support management in making proactive choices. This is achieved by utilising Key Performance Indicators (KPIs) and machine learning technologies to guide future decisions. Moreover, this study aimed to offer guidance for assessing the decisions undertaken during the implementation of NFR, considering the factors and changes linked to its adoption. However, the literature lacks an analysis of risk-management models and the reduction in insurance costs related to these activities.

Gender within the NFR is addressed in the composition of bank boards and the effect this aspect has on the content and quality of representation of the group (Beretta *et al.*, 2023). This topic is associated with a new trend in studies that consider the gender aspect of the legal, philanthropic, ethical, and financial issues addressed by the banking sector. The banking sector also supports studies on standards for reporting green investments in line with the European taxonomy. The analysis of the banking sector literature expands upon topics covered in general NFR in Italy (Turzo *et al.*, 2022; Brescia and Campora, 2023), focusing on materiality frameworks, comparability standards, and common benchmarks. This sector-specific focus highlights how banking literature has made more progress in addressing some structural issues compared to the general NFR literature. However, more attention should be paid to these topics in the NFR literature. In the banking sector, academic research has not sufficiently addressed relevant issues such as the creation of financial and non-financial value, valuation of intellectual capital, application of legitimacy theory to the topic, the role of internal committees in ensuring the quality of reported information, and adoption of mandatory regulations to reduce greenwashing (Beretta *et al.*, 2023; Khan *et al.*, 2021). Furthermore, based on the conducted analysis, among the emerging themes or those that find continuity in the literature are governance approaches, the analysis of financial activities oriented towards sustainable development, investments analysis, and banking sector impacts.

Table 6. Correlation table between literature analysis and practical cases

NFR variables (Turzo <i>et al.</i> , 2022; Brescia and Campra, 2023)	Bibliometric analysis	Italian bank NFR 2021 on y. 2019 Italian banks	Italian bank NFR 2022 on y. 2021 Italian banks	Italian bank NFR 2023 on y. 2022 Italian banks
SDGs	x	X	X	X
Financial and non-financial and value		X Only financial value for shareholders (value of loans and distribution of dividends)	X	X
IIRC six capital	x	X	X	X
Intellectual capital and value				
IIRC framework affects the quality of corporate information				
Forecasting	X KPI and new technologies (such as machine learning)			
Social legitimacy			X (partial)	X
Support decision-making process	X and reduces risk or grant loans	X	X (adding view of social aspects such as personnel management, gender equality, and dialogue with stakeholders)	x
Gender diversification of the board	x		X	X
Internal committees and quality of information				X
Institutional push to adopt SDGs				X (management of the bank affected by ESG)
Managerial approach to report non-financial activities				X

(continued)

Table 6. Continued

NFR variables (Turzo et al., 2022; Brescia and Campra, 2023)	Bibliometric analysis	Italian bank NFR 2021 on y. 2019 Italian banks	Italian bank NFR 2022 on y. 2021 Italian banks	Italian bank NFR 2023 on y. 2022 Italian banks
Adoption of mandatory rules to legitimise activities and reduce risks of greenwashing	X and reduces risk or grant loans			
Reduce insurance costs and risks				
Decoupling information and access to unique data Environment and GRI adoption	x		X (focus on the impact of digitalization of the system)	X (supporting system for due diligence) X
gas emissions, energy consumption, and use of materials		X (focusing on electric mobility, use of clean energy, elimination of plastic materials)	X	X (based on GRI standards social and environmental aspects as use of energies)
Presentation of investment External audit to guarantee information		X	X	X (based on ESG criteria and metrics) X (based on mandatory information and considering SDGs)
Disclosure and measurement of green investment	X based on taxonomy			X (reclassifying financial statement elements based on sustainable investments)
	Common standard (es. GRI) for materiality		X (involving stakeholders in the decision-making process)	X (considering positive and negative impacts involving stakeholders in the dialogue)
	Common standard (es. GRI) for comparability	X GRI 2016	X GRI 2016	X GRI 2021
	Common standard (es. GRI) to detect benchmark			

(continued)

Table 6. Continued

NFR variables (Turzo <i>et al.</i> , 2022; Brescia and Campra, 2023)	Bibliometric analysis	Italian bank NFR 2021 on y. 2019 Italian banks	Italian bank NFR 2022 on y. 2021 Italian banks	Italian bank NFR 2023 on y. 2022 Italian banks
	Standard approach of communication and employee's satisfaction based on graduates' approach Taxonomy and circular economy Green Bond Portfolio Legal, Philanthropic, and Ethical dimensions affect financial results		X (internal communication oriented towards a balance between private, family and work life, employee support activities, and welfare plans)	X
	ESG harmonization indexes in Europe		X Moral code and introduction of diversity as value (associated with training on corporate employee diversity) + Corporate governance and gender equity	X X Ethical code (attention to the natural environment, climate change, health, work, well-being of the entire community, protection of social relationships) X (only based on loans and energy intensity index) and due diligence approach and value chain mitigation activities relating to suppliers

Source(s): Authors' elaboration

These emerging themes are directly supported by the multi-year content analysis of Italian NFR practices, which confirms a progressive alignment with international reporting standards and increasing stakeholder engagement. The bibliometric and content analyses thus converge in identifying governance, ESG orientation, and materiality as key elements shaping the evolution of NFR in the banking sector.

Several recurring themes are identified in the multi-year analysis of the Italian banking sector, including banks and funds that utilise non-financial reports verified by CONSOB. This analysis highlights the evolution of these reports over time, together with the impact of these themes and the changes in reporting approaches within the Italian banking system (Table 6). The first year of the NFR analysis applies some approaches that emerged from the literature (NFR, 2021). Initially, the content analysis verified the application of indicators and elements associated with the SDGs, which are represented through the IIRC's six capitals and GRI frameworks. The first year of the analysis highlights the value generated for shareholders with little consideration given to the benefits to other stakeholders, although some elements of value creation are represented through the application of the 2016 GRI standards. The second year of NFR implementation emphasised including elements that reflect a partial shift towards social legitimacy by engaging various stakeholders in different categories and supporting decision-making processes by integrating non-financial capital. This study presents the first analysis representing intangible elements such as social aspects that consider personnel management, gender equality, stakeholder dialogue, gender diversification on boards, gas emissions, and energy consumption.

We also highlight the impact of technologies due to the COVID-19 pandemic and lockdown on the NFR approach, information collection practices, and materiality analysis. The internal communication approach promotes a balance between personal, family, and work lives, along with employee support initiatives and welfare programs. This approach allows for a more effective assessment and representation of employee satisfaction. The third year of NFR for the banking sector reveals an evolution in the system, characterised by adoption of new principles driven by European taxonomy and the updated 2021 GRI standards. For the first time, this approach considers integrated elements that address risk reduction and the management of internal relationships, evaluating both financial and environmental aspects holistically and socially consciously. Social aspects such as gender equality, employee well-being, and external relations have become significant elements for understanding the institutional evolution of organisations. These new approaches also led to the development of due diligence processes in Italy based on ESG results reviewed by the board, with effective stakeholder involvement recognised as a priority in the reporting process. The change in the materiality approach is evident in the increased attention paid to meaningful stakeholder involvement in production processes through collecting relevant evidence and identifying key priorities.

It is important to note that while our analysis highlights the first formal disclosure of the Board of Directors' involvement in evaluating sustainability practices such as value chain impacts and due diligence, this does not imply that these activities were entirely absent in earlier years. Rather, our findings are based on documented evidence within the published NFR documents, and the observed changes reflect the timing of public disclosure rather than the initial occurrence of such practices.

Organisational change also reflects the adoption of standards to assess the impact of loans and energy consumption and map the direct and indirect effects along the company's value chain. However, specific indicators must be developed for this sector to measure its actual social impact. Investments in green funds have been reported and represented simultaneously under several circumstances.

An analysis of the gap between academic research and the actual implementation of NFR in Italy revealed several areas that require further investigation or practical application. Although the six-capital representation framework has been mentioned, there is a need for a deeper analysis of the relationship between the quality of NFR and the content presented.

Furthermore, the role of intellectual capital, a key element in the Italian banks' NFR, has not been adequately explored in the literature. Greater attention should also be paid to internal control and reporting processes designed to prevent greenwashing. NFR documents must demonstrate the impact of external audits on validating the information reported. Although the literature emphasises comparative standards, they are not unified within the banking sector, except for the CAPEX and OPEX indicators defined by the European taxonomy based on sustainable environmental investments. Moreover, despite sustainability-oriented approaches, there are no clear requirements or in-depth analyses of the development of technologies adopted to facilitate NFR practices.

Thus, the convergence between literature findings and empirical evidence presented through the content analysis reinforces the validity of the study's claims, offering a structured and evidence-based view of how NFR practices in banking are evolving in response to regulatory, strategic, and stakeholder-driven imperatives.

6. Conclusion

This study comprehensively investigates NFR, which is driven by regulatory frameworks and stakeholder expectations, and underscores its growing importance in the Italian banking sector. Focusing on core elements, such as sustainability, governance, and regulatory compliance, this study offers valuable insights into how Italian banks integrate NFR into their reporting frameworks.

6.1 Theoretical, managerial and societal implications

Theoretically, this study enriches the existing literature on NFR by highlighting research gaps, particularly in areas such as the integration of financial and non-financial data, intellectual capital assessment, and greenwashing prevention through external auditing activities (Brescia and Campra, 2023; Khan *et al.*, 2021; Turzo *et al.*, 2022). These results underscore the need for further exploration of the relationship between NFR quality and the content represented, along with the emerging role of governance and its influence on NFR (Beretta *et al.*, 2023).

In addition, this study makes a significant theoretical contribution by reinforcing the role of stakeholder theory in understanding the evolution of non-financial reporting practices. The increasing disclosure of stakeholder-related themes – such as materiality, due diligence, board-level ESG oversight, and sustainability-linked investments – reflects a shift towards a model of governance that actively incorporates stakeholder expectations and feedback. Our multi-year findings suggest that banks are progressively moving from compliance-oriented reporting to engagement-driven disclosure, a transformation that aligns with legitimacy theory by responding to societal pressures for greater transparency and accountability. The patterns identified through content analysis demonstrate how regulatory developments and normative frameworks, such as the EU Taxonomy and the updated GRI Standards, are institutionalising NFR practices, confirming the influence of institutional theory in shaping organisational behaviour. By grounding empirical evidence in these theoretical frameworks, the study contributes to a deeper understanding of the mechanisms through which banks respond to external pressures, enhance legitimacy, and strategically engage stakeholders through non-financial disclosures.

From a practical perspective, this study provides insights into how banks align their reporting practices with European taxonomy and the SDGs. It also emphasises the importance of addressing inconsistencies in ESG factors and the need for banks to adopt standardised indicators across sectors (Khan *et al.*, 2021). Moreover, emerging technologies such as machine learning are crucial in enhancing decision-making processes and improving NFR accuracy (Secinaro *et al.*, 2020). Managers must ensure that internal reporting processes are sufficiently robust to prevent greenwashing and that external audits play a significant role in legitimising NFR data (Schröder, 2022).

Furthermore, in the Italian context, the findings of this study highlight actionable insights for regulatory authorities, managers, and policy-makers in the banking sector. Italian banks operate under the supervision of CONSOB and within a European framework that increasingly demands transparent and standardised sustainability disclosures. Our analysis suggests that banks should invest in dedicated sustainability governance bodies – such as ESG committees or task forces – better to manage the growing complexity of non-financial disclosure obligations. Moreover, banks should implement sector-specific KPIs that reflect Italian regulatory expectations while aligning with the European taxonomy. Practically, the study encourages institutions to engage more actively with stakeholders through formalised consultations and materiality assessments that go beyond compliance and become a strategic lever for value creation (Gutiérrez-López and Abad-González, 2020). These practical implications are particularly relevant for medium-sized Italian banks, which may lack structured NFR processes and risk lagging behind larger institutions in adapting to evolving sustainability standards. The adoption of these practices can not only enhance reputational capital and stakeholder trust but also serve as a driver for more sustainable investment and risk management strategies across the Italian financial system (Moneva *et al.*, 2023).

6.2 Limitations and future research avenues

Although this study provides valuable insights into the adoption and evolution of the NFR in the Italian banking sector, it has some limitations. In particular, the analysis considers the Italian banking sector, which may affect the generalisability of the findings to other countries and industries. Future research could expand the scope to include comparative studies across different countries and sectors to capture wider trends in NFR implementation. Moreover, future studies could delve into integrating advanced technologies, such as artificial intelligence, to improve NFR quality and accuracy, an underexplored area. Finally, while this study touches on stakeholder engagement and the role of external audits in legitimising NFR content, future research could investigate the effectiveness of these practices in reducing greenwashing and enhancing transparency.

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