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Research Article

**Two Approaches to Sustainability Reporting: A Comparative Analysis of TSRS
and CSRD/ESRS Frameworks in the Banking Sector**

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Abstract

Introduction: This study aims to conduct a comparative analysis of the Türkiye Sustainability Reporting Standards (TSRS) and the European Union Corporate Sustainability Reporting Directive (CSRD) and its associated European Sustainability Reporting Standards (ESRS) frameworks, specifically within the banking sector.

Method: The research was conducted using the document analysis method within the framework of a qualitative research approach. In this context, the 2024 sustainability reports of the Turkish subsidiaries of the BBVA and ING groups, as well as their European parent companies, were analyzed.

Results or Findings: The findings reveal a structural difference between the TSRS's single-materiality approach and the ESRS's dual-materiality approach, which decisively shapes the scope, depth, and stakeholder orientation of reporting. CSRD/ESRS reports exhibited higher evaluation scores (average difference: 1.0/5), with divergence most pronounced in materiality assessment and scenario analysis depth.

Discussion or Conclusion: The findings show that some Turkish banks exceed TSRS minimum requirements through group-level influences, demonstrating that reporting quality depends on institutional context as well as regulatory design. This empirical comparison fills a gap in the literature by showing how different regulatory approaches shape banking sector sustainability reporting practices.

Keywords: TSRS, CSRD, ESRS, sustainability reporting, banking sector

JEL Codes: M41, M48, G21

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Araştırma Makalesi

**Sürdürülebilirlik Raporlamasında İki Yaklaşım: TSRS ve CSRD/ESRS Çerçevesinin
Bankacılık Sektöründe Karşılaştırmalı Analizi**

Elçin Dalkılıç^a & Murat Kesebir^b

Öz

Giriş: Bu çalışma, Türkiye Sürdürülebilirlik Raporlama Standartları (TSRS) ile Avrupa Birliği Kurumsal Sürdürülebilirlik Raporlama Direktifi (CSRD) ve buna bağlı Avrupa Sürdürülebilirlik Raporlama Standartları (ESRS) çerçevelerini bankacılık sektörü özelinde karşılaştırmalı olarak incelemeyi amaçlamaktadır.

Yöntem: Araştırma, nitel araştırma yaklaşımı çerçevesinde doküman analizi yöntemi kullanılarak gerçekleştirilmiştir. Bu kapsamda BBVA ve ING gruplarının Türkiye iştirakleri ile Avrupa ana ortaklıklarına ait 2024 yılı sürdürülebilirlik raporları analiz edilmiştir.

Sonuçlar ya da Bulgular: Bulgular, TSRS'nin tek önemlilik yaklaşımı ile ESRS'nin çift önemlilik yaklaşımı arasında, raporlamanın kapsamını, derinliğini ve paydaş yönelimini belirleyen yapısal bir farklılık olduğunu ortaya koymaktadır. CSRD/ESRS raporları daha yüksek değerlendirme puanı almış (ortalama fark: 1,0/5) ve bu farklılık özellikle önemlilik değerlendirmesi ve senaryo analizi derinliğinde belirginleşmiştir.

Tartışma ya da Yapılan Çıkarımlar: Bulgular, bazı Türk bankalarının grup düzeyindeki etkilerle TSRS'nin asgari gerekliliklerini aştığını ve raporlama kalitesinin yalnızca düzenleyici tasarıma değil, kurumsal bağlama da bağlı olduğunu göstermektedir. Bu ampirik karşılaştırma, farklı düzenleyici yaklaşımların bankacılık sektöründe sürdürülebilirlik raporlama uygulamalarını nasıl şekillendirdiğini ortaya koyarak literatürdeki bir boşluğu doldurmaktadır.

Anahtar Kelimeler: TSRS, CSRD, ESRS, sürdürülebilirlik raporlaması, bankacılık sektörü

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Introduction

As global challenges such as climate change, the depletion of natural resources, and social inequality have intensified, sustainability reporting has evolved from being merely a tool for corporate transparency into a fundamental component of financial markets. The most evident manifestation of this transformation is the accelerating adoption of mandatory reporting frameworks implemented in recent years at both the international and national levels. Indeed, as of 2024, the shift from voluntary to mandatory reporting has emerged as a defining trend in the global sustainability reporting landscape, with the International Sustainability Standards Board (ISSB) framework and the EU's Corporate Sustainability Reporting Directive (CSRD) playing a pivotal role in shaping global standards (Amesheva & Shukla, 2025). Both sets of standards aim to ensure that sustainability information is reported in a systematic, comparable, and reliable manner; however, they differ in terms of their development processes, scopes, and implementation approaches.

International organizations play a significant role in the development of sustainability reporting. In particular, the International Sustainability Standards Board (ISSB) and the European Financial Reporting Advisory Group (EFRAG) have developed their own sets of standards to address the growing demand for transparency in sustainability disclosures. While the IFRS S1 and IFRS S2 standards developed by the ISSB establish general provisions for disclosing sustainability-related financial information required by financial markets, the ESRS prepared by EFRAG offers a framework that addresses both financial and non-financial materiality, catering to a much broader stakeholder audience under the European Union's Corporate Sustainability Reporting Directive (CSRD) (Baumüller & Sopp, 2022). In this context, TSRS is based on Türkiye's adoption of the ISSB's IFRS S1 and IFRS S2 standards as TSRS 1 and TSRS 2, whereas ESRS has been developed within the EU's CSRD framework through EFRAG's technical standard-setting work for the European Commission.

The International Sustainability Standards Board (ISSB) published the IFRS S1 and IFRS S2 standards in June 2023. Effective as of January 1, 2024, these standards require that all sustainability-related risks and opportunities be presented in an integrated manner with financial reports under IFRS S1, and that climate-related disclosures be integrated under IFRS S2 (IFRS Foundation, 2023). de Villiers et al. (2024) argue that the ISSB's framework represents a significant step toward global convergence in sustainability disclosure by building on the TCFD's four-pillar structure, while simultaneously raising concerns about implementation challenges across jurisdictions with different institutional capacities. Global adoption is accelerating: As of July 1, 2025, 16 jurisdictions have adopted ISSB standards on a voluntary or mandatory basis, while 20 jurisdictions are in the process of adoption. According to the IFRS Foundation (2025), as of June 2025, 36 jurisdictions have adopted or are otherwise using ISSB Standards, or are in the process of finalising steps to introduce them into their regulatory frameworks, with 17 jurisdictions — including Türkiye — having already finalised their approach.

On the European Union front, the CSRD entered into force on January 5, 2023, and has imposed a reporting requirement on all covered companies under the European Sustainability Reporting Standards (ESRS). Unlike the ISSB's investor-focused single materiality approach, the CSRD mandates a dual materiality approach, requiring companies to assess both the financial impacts on them from external sources and the environmental and social impacts of their own operations (Mezzanotte, 2024; Baumüller & Sopp, 2022). This distinction is not merely technical: Mezzanotte (2024) demonstrates that the impact materiality requirement introduces novel legal and reporting risks that go well beyond traditional financial disclosure

obligations. However, as part of the EU's 2025 Omnibus simplification package, the scope of the CSRD's application has been narrowed, and the deadlines for compliance have been postponed.

Türkiye has closely followed this global transformation by incorporating the ISSB standards into its national sustainability reporting framework. Published in the Official Gazette on 29 December 2023 by the Public Oversight, Accounting and Auditing Standards Authority (KGK), the Türkiye Sustainability Reporting Standards (TSRS) became mandatory for fiscal periods beginning on or after 1 January 2024 for entities within the defined scope and fully incorporate the ISSB's IFRS S1 and IFRS S2 standards. As de Villiers et al. (2024) observe, such jurisdiction-level adoption of ISSB Standards—whether through direct incorporation or functionally aligned domestic standards—is central to the ISSB's aim of establishing a global baseline for investor-focused sustainability disclosure, and Türkiye's early alignment places it among the first wave of adopting jurisdictions. The banking sector holds a particularly critical position under this regulation, and all banks subject to BDDK supervision have been included in the mandatory reporting scope without any size threshold. On the other hand, it is assessed that Turkish banks with EU-based parent companies may be indirectly exposed to the implications of CSRD obligations through such parent companies.

Today, discussions on sustainability are framed within the concept of a “polycrisis,” in which environmental, economic, and geopolitical crises emerge simultaneously and are interlinked. Accordingly, sustainability has evolved from being merely an environmental issue into a multidimensional transformation process that encompasses economic and social systems. The European Union has positioned corporate sustainability reporting as a central tool in this transformation and, through the CSRD regulation, has made it mandatory for companies to provide comprehensive ESG disclosures. In this context, sustainability reporting is viewed not merely as a tool for providing information, but also as a strategic mechanism that fosters transparency, accountability, and a competitive advantage (Calvo & Alpi, 2025).

One of the major challenges in international sustainability reporting is the coexistence of multiple reporting frameworks, which creates difficulties in comparability, consistency, and standardization. Although recent regulatory developments such as the ISSB Standards and the CSRD/ESRS have accelerated the shift toward mandatory sustainability reporting, prior research shows that sustainability reporting has historically evolved within a fragmented landscape of voluntary frameworks and standards (Du Toit, 2024; Hummel & Jobst, 2024). Such fragmentation leads to variations in the content and scope of reports, thereby reinforcing the need for more standardized, transparent, and comparable sustainability reporting frameworks. In this context, the compliance requirements and potential tensions arising from the concurrent application of the TSRS and CSRD/ESRS frameworks in the banking sector have emerged as a significant research issue.

However, the vast majority of existing studies either focus on a single regulatory framework or address sustainability reporting at a general conceptual level. Despite the findings of Sebastião et al. (2024), which reveal that the number of academic publications on sustainability reporting in the banking sector has grown by 29.68% annually, it is evident that studies in the Turkish literature comparing the TSRS and CSRD/ESRS frameworks specifically within the banking sector and empirically examining the reporting practices of Turkish banks subject to both systems simultaneously remain limited.

This study examines the TSRS, the CSRD, and the associated ESRS specifically within the banking sector using a comparative document analysis method, with the aim of filling this

gap. In this regard, the study aims to identify the key differences and similarities between the two frameworks in terms of legal basis, scope of application, materiality approach, disclosure requirements, and assurance obligations. Additionally, assessing the position of Turkish banks (which are indirectly exposed to the impact of the CSRD through EU subsidiaries) under the dual-framework pressure and sharing some evaluations regarding the Turkish banking sector in light of the findings are among the study's primary objectives.

The originality of this study lies in three interconnected aspects. First, it provides one of the first empirical comparisons of the TSRS and CSRD/ESRS frameworks specifically within the banking sector, drawing on actual 2024 sustainability reports rather than a purely conceptual analysis. Second, by selecting banking groups whose Turkish subsidiaries report under TSRS while their European parent companies operate under CSRD/ESRS, the study directly observes how the same institutional group navigates two structurally different reporting frameworks. Third, the study introduces an analytical scoring rubric that operationalizes key framework differences across four dimensions, enabling a structured and replicable comparison at the report level. Together, these features distinguish the study from prior work that either examines a single framework or remains at a general conceptual level.

The remaining sections of the study are organized as follows: The first section provides a comparative analysis of the TSRS and CSRD/ESRS frameworks at a conceptual level; the second section reviews the relevant literature. The third chapter explains the research methodology, while the fourth chapter presents findings derived from sustainability reports of selected Turkish and European banks. The fifth chapter discusses the findings, and the sixth chapter presents the conclusions and recommendations for future research.

TSRS and CSRD/ESRS: Conceptual Framework

This section provides a comparative analysis of the TSRS and CSRD/ESRS frameworks in terms of legal basis and organizational structure, scope of application, materiality approach, scope of reporting standards, and assurance obligations. At their core, the two frameworks reflect fundamentally different accountability philosophies: TSRS adopts a single materiality approach built on the ISSB's investor-focused architecture, whereas CSRD/ESRS operates through a double materiality logic that extends reporting obligations to a much broader stakeholder base. This distinction shapes not only what companies are required to disclose, but also whose information needs are prioritized and how sustainability is integrated into corporate decision-making. The following sub-sections examine these differences in detail, providing the conceptual foundation for the empirical findings presented later in the study.

Legal Basis and Institutional Structure

TSRS and CSRD/ESRS are based on different legal frameworks. TSRS was prepared by the Public Oversight, Accounting, and Auditing Standards Authority (KGK) based on Article 88 of the Turkish Commercial Code No. 6102, published in the Official Gazette dated December 29, 2023, and entered into force as of January 1, 2024 (Resmî Gazete, 2023). The standards are structured in two sets, fully aligned with IFRS S1 and IFRS S2: TSRS 1 covers general provisions regarding the disclosure of sustainability-related financial information, while TSRS 2 addresses climate-related disclosures.

The CSRD, on the other hand, is an EU directive published in the Official Journal of the European Union on January 5, 2023, and entered into force. The directive imposes an obligation on companies of a certain size operating in the EU to identify, report on, and have their social and environmental impacts audited. The European Sustainability Reporting Standards (ESRS),

which all companies covered by the directive are required to implement, were adopted by the European Commission on July 31, 2023 (European Commission, 2023).

Another key difference between TSRS and ESRS lies in the role of regulatory bodies and the processes for updating standards. The European Commission plays an active role alongside EFRAG in the development of ESRS, whereas the TSRS process is led by the KGK. Both organizations place importance on stakeholder participation; however, in the European Union, stakeholder participation is much more extensive, and standards can be amended in line with public opinion (Tarakcioğlu Altınay & Sardoğan, 2025).

Scope of Application

One of the most fundamental differences between the two frameworks lies in the scope of application. While the TSRS establishes a criteria-based scope, it provides for a critical exception for the banking sector: all banks subject to BDDK supervision are included in the mandatory reporting scope without any size threshold. For other companies, however, the condition is that they must meet at least two of the following criteria (number of employees: 250; total assets: 500 million TL; annual net sales revenue: 1 billion TL) in two consecutive reporting periods (Resmî Gazete, 2023).

The scope of the CSRD, however, is both broader and constantly evolving. Under the original CSRD, Wave 1 companies (large public-interest entities with more than 500 employees) began reporting in 2025 for financial year 2024, with Wave 2 companies initially scheduled to report in 2026 (European Commission, 2023). In February 2025, the European Commission proposed the Omnibus simplification package, aiming to remove approximately 80% of companies from the CSRD scope (European Commission, 2025). Following the political agreement reached between the European Parliament and the Council in December 2025, Directive (EU) 2026/470 was adopted on 24 February 2026 and entered into force on 18 March 2026, limiting the CSRD scope to EU undertakings exceeding both 1,000 employees and €450 million net turnover, and postponing reporting requirements for Wave 2 and Wave 3 entities by two years (Directive (EU) 2026/470, 2026). While both sets of standards aim to enhance transparency, accountability, and stakeholder communication, it can be stated that the ESRS, thanks to its dual materiality approach, is designed to address the information needs of a much broader stakeholder base (Baumüller & Sopp, 2022).

Materiality Approach

The concept of materiality plays a central role in sustainability reporting within both the TSRS and ESRS frameworks. However, these two sets of standards exhibit significant differences in their approaches to materiality (de Villiers et al., 2024; Mezzanotte, 2024). Materiality represents the most fundamental conceptual difference between the two frameworks. TSRS adopts the single materiality (financial materiality) principle in alignment with IFRS S1 and S2. Under this approach, reporting on a sustainability issue is mandatory only if it has the potential to affect the company's financial position, performance, or access to capital. The primary focus is on investor information. CSRD/ESRS, however, mandates the principle of double materiality. ESRS requires companies to disclose both their material impacts on people and the environment, as well as their material sustainability-related risks and opportunities (EFRAG, 2025). Consequently, the company's external impacts are assessed alongside the financial impacts on the company from external sources (financial materiality). Materiality assessment forms the starting point for sustainability reporting under the ESRS (EFRAG, 2023). This distinction emerges as a critical element in enhancing transparency and comparability in sustainability disclosures.

The impact of this difference on the banking sector can be illustrated in concrete terms. Under the TSRS, a Turkish bank assesses climate risk solely in terms of its loan portfolio and financial stability, whereas under the CSRD, a European bank is also required to report on the environmental impact of the activities it finances.

Scope and Structure of Reporting Standards

TSRS is based on the four pillars of the TCFD framework—governance, strategy, risk management, and metrics and targets. IFRS S1 covers general sustainability disclosures, while IFRS S2 addresses climate-related risks and opportunities. As de Villiers et al. (2024) note, this four-pillar architecture represents a deliberate design choice by the ISSB to build upon the widely adopted TCFD framework and ensure interoperability with existing climate reporting practices. Tumewang et al. (2025), in their systematic review of 230 TCFD-related studies, similarly emphasize that the transfer of this four-pillar structure into IFRS S2 provides continuity for companies already reporting under TCFD recommendations. This two-standard structure provides a relatively narrow yet focused framework. The ISSB Standards aim to establish a global foundation for sustainability disclosures by synthesizing the TCFD recommendations, the CDSB's climate-related disclosure standards, and the SASB's sector-specific guidance, thereby consolidating multiple pre-existing voluntary frameworks into a single investor-focused baseline (de Villiers et al., 2024).

The ESRS, on the other hand, is based on a much broader framework. Consisting of a total of 12 standards—two cross-cutting standards (ESRS 1 and ESRS 2) and ten thematic standards—the ESRS encompasses five environmental standards covering climate change, pollution, water and marine resources, biodiversity, and the circular economy, as well as four social standards addressing own workforce, workers in the value chain, affected communities, and consumers (EFRAG, 2023). The TSRS, by contrast, follows the ISSB's investor-oriented approach by requiring entities to disclose material information about sustainability-related risks and opportunities that could reasonably be expected to affect cash flows, access to finance, or the cost of capital over the short, medium, or long term. Although this approach is centred on sustainability-related financial information, IFRS S1 also requires entities to consider sustainability-related risks and opportunities beyond climate, including topics identified through industry-based guidance such as the SASB Standards. While ESRS 1 establishes the general principles to be applied in reporting, ESRS 2 sets out the mandatory requirements that all companies must disclose, regardless of sector (EFRAG, 2023). Dragomir et al. (2024) emphasize that ESRS 2's cross-cutting disclosure architecture operationalizes the double materiality principle by requiring entities to systematically document both their impact on stakeholders and the financial implications of sustainability matters. This structure creates a broader disclosure architecture than the TSRS framework, not merely because ESRS contains more standards, but because it combines cross-cutting requirements with detailed environmental, social, and governance-related topical disclosures under a double materiality logic.

Assurance Requirements

In terms of assurance requirements, both frameworks require mandatory audits, but the standards and processes they apply differ from one another. All companies covered by the CSRD must obtain limited assurance from a third-party assurance provider starting from the first year their reporting obligations begin. According to the Institute of Chartered Accountants in England and Wales (ICAEW, 2024), the European Commission is expected to adopt a common limited assurance standard at the EU level by October 1, 2026; until that date, member

states may apply their own national standards. To guide implementation during this transition period, the Committee of European Auditing Oversight Boards (CEAOB) has published non-binding guidance principles on limited assurance (CEAOB, 2024).

Türkiye has adopted a similar approach in this area. Pursuant to the decision of the Public Oversight, Accounting, and Auditing Standards Board dated September 2, 2024, it has been decided that sustainability reports prepared in accordance with TSRS for financial periods beginning on or after January 1, 2024, shall be subject to assurance audits starting from the first year they are issued (Resmî Gazete, 2024). Assurance audits will be conducted in accordance with GDS 3000 and GDS 3410 standards until SGDS 5000 is published, and a limited assurance level will be applied. As Venter and Krasodomska (2024) document, ISAE 3000 and ISAE 3410—on which the Turkish GDS 3000 and GDS 3410 are modelled—have historically served as the main international standards for sustainability assurance engagements, although the IAASB's newly approved ISSA 5000 is expected to replace ISAE 3000 as the overarching framework for sustainability assurance going forward.

Literature

Sustainability reporting has evolved substantially over the past three decades, transforming from narrowly focused environmental disclosures into a multidimensional practice that integrates environmental, social, and governance considerations. Drawing on a PRISMA-based bibliometric review of 1,957 peer-reviewed articles from 1994 to 2024, Du Toit (2024) documents this evolutionary trajectory and identifies persistent gaps in the field, notably the lack of standardized reporting frameworks, challenges in data comparability, and limited evidence on the relationship between sustainability disclosure and corporate financial performance. These persistent gaps provide the broader context in which current mandatory frameworks—ISSB Standards and the CSRD/ESRS—have emerged as structural responses.

Building on this broader trajectory, the literature on sustainability reporting reveals a clear shift in recent years from voluntary disclosure practices toward mandatory and standardized reporting frameworks. While key drivers of this shift include company size, sector dynamics, and increasing regulatory pressures, the impact of legal requirements has become particularly pronounced in recent years (Hahn & Kühnen, 2013; Hummel & Jobst, 2024). Hummel and Jobst (2024) systematically document how the European Union has moved from the voluntary guidance of the Non-Financial Reporting Directive toward a comprehensive set of mandatory and interconnected sustainability disclosure requirements—including the CSRD, the Taxonomy Regulation, the SFDR, and the Pillar 3 ESG disclosures for credit institutions—marking a decisive regulatory turning point for corporate reporting practices.

One of the most significant debates regarding sustainability reporting during this transformation process is the issue of incompatibility and comparability among different reporting frameworks. Particularly in the banking sector, the significant divergence of ESG indicators across different frameworks such as ESRS, SFDR, and SASB complicates both materiality assessments and the comparability of reports (Sikacz et al., 2025). This situation has further highlighted the need for a single, integrated reporting framework on a global scale. Indeed, the literature emphasizes that the binding nature of reporting frameworks has evolved over time from voluntary to mandatory, and that during this process, interconnected mandates and standard-setting initiatives have converged toward more institutional sustainability reporting regimes (Hummel & Jobst, 2024).

The most significant response to this need at the international level is the IFRS S1 and S2 standards developed by the ISSB, along with the CSRD and the associated ESRS framework

implemented by the European Union. While ISSB standards adopt an investor-focused single-materiality approach, focusing on financial risks and opportunities relevant to enterprise value creation (de Villiers et al., 2024), the ESRS offers a broader stakeholder perspective that encompasses both financial materiality and the company's impacts on people and the environment, in line with the dual-materiality principle (Baumüller & Sopp, 2022; Mezzanotte, 2024). This distinction demonstrates that sustainability reporting is not merely a technical application, but also a structural choice reflecting different understandings of accountability. In this regard, IFRS S2 reflects the ISSB's investor-oriented reporting logic by requiring disclosures on climate-related risks and opportunities, including both physical risks arising from climate change and transition risks associated with the move toward a lower-carbon economy. The development of IFRS S1 and IFRS S2 through exposure drafts and stakeholder feedback further indicates that these standards were shaped through an international due-process mechanism rather than a purely technical standard-setting exercise. In this context, the sustainability reporting literature shows that the concept of materiality is being reconsidered within the framework of double materiality, which incorporates both financial materiality and social and environmental impacts, as well as regulatory and standard-setting developments (Jørgensen et al., 2022).

Tekin (2025) shows that sustainability- and climate-related issues are increasingly integrated into the strategies of Turkish banks through green financing products, disclosure and reporting practices, greenhouse gas emissions monitoring, and energy-efficiency measures. This finding suggests that sustainability reporting in the banking sector should not be viewed as an isolated disclosure activity, but rather as part of a broader strategic response to climate-related risks, transition finance, and stakeholder expectations. Studies on European banks, meanwhile, reveal that during the initial phase of ESRS implementation, climate change and governance issues were prioritized; however, significant shortcomings persist regarding the application of dual materiality, data integrity, and reporting consistency (Dragomir et al., 2024; Fedele et al., 2025). Dragomir et al. (2024), in their empirical examination of 20 large Romanian companies, found that most firms disclose information about their materiality assessment process and inside-out impacts, while disclosures on financial materiality and stakeholder engagement with financial capital providers remain notably limited—suggesting that the operationalization of double materiality is still an emerging and uneven practice among first-wave reporters. Additionally, it is shown that banks' environmental disclosures remain limited, particularly in areas such as biodiversity, and that reporting gaps persist (Broniewicz et al., 2024; Brescia et al., 2026). However, it is emphasized that ESG regulations are transforming banking business models, sustainable financing tools are becoming more widespread, and ESG is increasingly becoming a mandatory strategic component (Kosztowniak, 2023; Menicucci & Paolucci, 2023). Indeed, Menicucci and Paolucci (2023), in their empirical investigation of 105 Italian banks over 2016–2020, demonstrate that banks' commitment to ESG activities significantly affects financial performance, underscoring that ESG practices have moved from discretionary initiatives to a structural component of banking strategy.

With the introduction of mandatory sustainability reporting, another prominent debate in the literature concerns the quality and reliability of reporting. Studies indicate that an increase in reporting does not always correspond to structural performance improvements and that sustainability disclosures may, in some cases, be associated with symbolic compliance behaviors (Tarakcıoğlu Altınay & Sardoğan, 2025; Gündüz & Gündüz, 2025). Similarly, recent research suggests that the relationship between sustainability or ESG performance and financial performance is not automatic, but varies depending on contextual, methodological, and measurement-related factors (Bahadır & Akarsu, 2024; Shrestha et al., 2025). This suggests

that sustainability reporting practices, sustainability-oriented actions, and measurable financial outcomes may not always move in parallel.

On the other hand, the increasing technical complexity and standardization of sustainability reporting also bring new challenges. In the case of Türkiye, while the first reports published under IFRS S2 demonstrate a high level of technical compliance, their low readability indicates a tension between the informational value and accessibility of the reports (Erdoğan et al., 2026). Furthermore, firms' tendency to adopt similar reporting templates reinforces the impact of corporate isomorphism pressures on reporting practices.

The sustainability reporting landscape in Türkiye is undergoing a significant regulatory transformation following the mandatory implementation of the Türkiye Sustainability Reporting Standards (TSRS), which incorporate the ISSB Standards into the national reporting framework for entities within the defined scope. This development positions Türkiye within the broader global movement toward standardized sustainability-related financial disclosures. At the same time, the international literature emphasizes that sustainability reporting frameworks are not fully homogeneous, particularly due to the conceptual differences between the ISSB's financial materiality-oriented approach and the EU's broader double materiality perspective. Within the Turkish banking sector, recent evidence shows that major banks increasingly adopt green banking strategies through green financing products, disclosure and reporting practices, greenhouse gas emissions monitoring, and energy-efficiency measures (Tekin, 2025). This transformation is particularly relevant for banks, as prior research shows that climate-related risks are closely associated with climate disclosure quality, credit risk exposures, and loan quality, making their integration into risk management and reporting practices increasingly important (Caby et al., 2020; Di Febo et al., 2026).

Different regulatory approaches to sustainability reporting differ not only in terms of technical reporting requirements but also in terms of companies' understandings of accountability and their stakeholder orientations. In this respect, the distinction between the TSRS, which adopts an investor-focused single-materiality approach, and the CSRD/ESRS framework, which mandates a dual-materiality approach based on a broader stakeholder perspective, is decisive in determining the scope and depth of sustainability reporting. Consequently, how different regulatory frameworks shape companies' reporting practices can be viewed not merely as a matter of technical compliance, but also as a reflection of corporate orientations and strategic choices.

However, it is evident that the vast majority of existing studies either focus on a single regulatory framework or address sustainability reporting at a general conceptual level. Despite the findings of Sebastião et al. (2024), which reveal that the number of academic publications on sustainability reporting in the banking sector has grown by 29.68% annually, it is understood that there are limited studies comparing the TSRS and CSRD/ESRS frameworks specifically within the banking sector and empirically examining the reporting practices of Turkish banks subject to both systems simultaneously. This study aims to fill this gap by presenting a comparative analysis of the TSRS and CSRD/ESRS frameworks based on bank reports.

Against this backdrop, the present study is motivated by two interconnected observations. First, despite the rapid growth of sustainability reporting research in the banking sector, comparative empirical studies that simultaneously examine institutions subject to both TSRS and CSRD/ESRS remain scarce in the Turkish literature. Second, the structural differences between the two frameworks—particularly regarding materiality approach, disclosure depth, and stakeholder orientation—have not yet been empirically tested at the report

level within the banking sector. This study addresses both gaps and can be said to contribute to the literature in the following respects:

- It provides one of the first empirical comparisons of TSRS and CSRD/ESRS frameworks in the banking sector, grounded in actual 2024 sustainability reports.
- It demonstrates how the single materiality versus double materiality distinction translates into measurable differences in reporting scope, depth, and stakeholder orientation.
- It shows that reporting quality within the same regulatory framework can vary substantially depending on parent-group influence and institutional capacity.
- It introduces a four-dimensional analytical scoring rubric that can serve as a replicable tool for future comparative studies in sustainability reporting.

Method

This section provides a detailed explanation of the research methodology. It systematically outlines the research design, sample selection, data sources, and analysis process.

Research Design

This study was conducted using the document analysis method, which is rooted in the tradition of qualitative research. Document analysis is a research technique in which existing written materials are systematically examined to identify meaning, patterns, and relationships (Bowen, 2009). Document analysis is not merely a data collection method but is also considered a systematic analytical process, requiring the researcher to examine texts in a structured manner according to specific themes and categories. This method offers a particularly valuable option in situations where researchers cannot conduct direct field research or where certain ethical constraints apply (Morgan, 2022). Document analysis is a methodologically appropriate choice for the research question of this study for several reasons. The primary research objective, which is to compare how two regulatory frameworks are reflected in actual reporting practices, requires a close and systematic reading of the reports themselves rather than survey-based or quantitative approaches. Furthermore, since the TSRS reporting obligation began only in 2024, the number of available reports is limited, making in-depth qualitative analysis more suitable than large-sample statistical methods. This approach is consistent with the broader methodological tradition in sustainability reporting research, where qualitative and comparative methods are commonly employed in the literature (Tolani et al., 2025).

The study is based on a two-phase design. In the first phase, the TSRS and CSRD/ESRS frameworks were analyzed comparatively across four dimensions. In the second phase, the study examined how these framework differences are reflected in bank reporting. This design makes it possible to reveal how differences at the framework level manifest at the application level.

Sample and Data Sources

Purposive sampling was adopted in this study. Purposive sampling is an approach based on the deliberate selection of cases that are directly relevant to the research question and rich in information, and is consistent with the fundamental logic of qualitative research (Campbell et al., 2020). Three criteria were considered in the selection of the sample: (1) the bank group under examination must operate in both Türkiye and the European Union, (2) the Turkish

subsidiary must have published a TSRS-compliant report for the 2024 fiscal year, and (3) the parent company must have published a sustainability statement under the CSRD.

Based on these criteria, two banking groups were selected: the BBVA Group (parent company: Spain) and the ING Group (parent company: the Netherlands). These two groups represent the only banking groups in Türkiye that met all three criteria simultaneously as of the 2024 reporting period, as other foreign-owned banks operating in Türkiye either lack a CSRD-reporting parent company or had not yet published a TSRS-compliant report at the time of data collection. The 2024 reports of both groups' Turkish subsidiaries and their European parent companies were included in the analysis, and the study's dataset consists of four reports (see Table 1).

Table 1

Reports Included in the Analysis

Report	Framework	Publisher	Period
Garanti BBVA 2024 Integrated Annual Report	TSRS	Garanti BBVA A.Ş.	Jan 1–Dec 31, 2024
ING Bank A.Ş. 2024 TSRS-Compliant Sustainability Report	TSRS	ING Bank A.Ş.	Jan 1–Dec 31, 2024
BBVA Group 2024 Annual Report	CSRD/ESRS	BBVA S.A.	Jan 1–Dec 31, 2024
ING Group 2024 Annual Report	CSRD/ESRS	ING Groep N.V.	Jan 1–Dec 31, 2024

Note. Created by the authors based on the publicly available reports of the selected banks for the 2024 reporting period. Reports were classified according to the reporting frameworks explicitly adopted by each institution, namely TSRS and CSRD/ESRS.

All reports were obtained from the publicly available digital sources of the relevant institutions. The reports on Türkiye were accessed via the official portal of the Public Oversight, Accounting, and Auditing Standards Authority (KGK), while the reports on Europe were accessed via the investor relations pages of the relevant companies.

Analytical Framework and Scoring

The reports were evaluated using a four-dimensional analytical framework derived from the research question. The selection of these four dimensions was guided by two considerations. First, each dimension corresponds directly to a core disclosure area required under both the TSRS and CSRD/ESRS frameworks, ensuring that the analytical framework captures the most structurally significant points of comparison between the two regulatory approaches. Second, the dimensions reflect key determinants of sustainability reporting quality identified in the literature, thereby grounding the framework in the core disclosure requirements shared across both regulatory approaches. Accordingly, the four dimensions are: (1) materiality approach, (2) climate risk management, (3) reporting depth, and (4) governance structure. A five-point scale was adopted because it provides sufficient granularity to distinguish between meaningfully different levels of disclosure quality, ranging from the complete absence of a practice to its exemplary implementation, while remaining practical for application to qualitative document analysis.

Each dimension was scored on a scale ranging from 1 to 5: 1 = None/Very inadequate; 2 = Superficial/Partial; 3 = Standard level; 4 = Comprehensive; 5 = Aligned with international best practices, exemplary level. Each dimension was evaluated based on multiple sub-criteria, and the dimension score was calculated as the arithmetic mean of the relevant sub-criteria. The

overall evaluation score reflects the average of the four dimensions. Reference indicators for each score are presented in Table 2.

During the scoring process, the relevant sections of each report were read holistically and systematically compared against the framework requirements. To enhance reliability, the scoring criteria were operationally defined in advance, and the analysis process strictly adhered to these criteria (Morgan, 2022). The rubric and criteria developed to enhance the reliability of the scoring process were reviewed by the study's second author; the criteria were finalized based on feedback regarding the evaluation process. In this study, which is primarily based on qualitative content analysis, the scoring approach was evaluated as an analytical tool that supports the systematic comparison of relative differences between reports rather than as a quantitative measurement.

Table 2

Analytical Evaluation Rubric

Score	Materiality (Approach/Stakeholder Engagement)	Climate Risk (Risk Management/Scenario Analysis)	Reporting Depth (Data/Framework/Assurance)	Governance (Board Role/Strategy Integration)
1	No assessment / Stakeholder engagement not defined	Climate risk not addressed / No scenario	No data / No framework disclosure / No assurance	Structure not defined / No strategy linkage
2	Superficial reference / Internal stakeholders only	General description, no quantitative data / Limited scenario	Partial data / Single framework / No assurance	General responsibility attribution / Weak integration
3	Single materiality with defined thresholds / Limited external stakeholders	Physical/transition risks distinguished / Single scenario	Basic ESG metrics / At least one framework / Limited assurance	Committee structure and board role defined / Partial integration
4	Dual prioritization / Multi-stakeholder engagement with surveys	Portfolio alignment methodology / Multi- dimensional scenarios	Comprehensive data / Multiple frameworks / Independent assurance	Multi-layered hierarchy with defined roles / Clear strategy linkage
5	EFRAG-aligned double materiality with strategic integration / Systematic inclusion of all stakeholders	Terra/PCAF methods, IEA/NGFS scenarios / Sector-based stress testing	Systematic dataset / Extensive framework disclosure / Detailed assurance report	Integration into remuneration / Three lines of defense, full institutional integration

Note. Developed by the authors based on document analysis, the rubric assesses reporting alignment on a scale from 1 (limited) to 5 (advanced) across four dimensions. EFRAG: European Financial Reporting Advisory Group; PCAF: Partnership for Carbon Accounting Financials; IEA: International Energy Agency; NGFS: Network for Greening the Financial System; Terra: ING Group's portfolio climate alignment methodology; PACTA: Paris Agreement Capital Transition Assessment; Board: Board of Directors.

Limitations of the Study

This study has several limitations. First, the analysis is limited to publicly available sustainability reports; therefore, it is not possible to directly assess corporate processes and

internal decision-making mechanisms that are not included in the reports (Bowen, 2009). Second, the study covers a limited number of banking groups and is based on an in-depth comparative analysis of four reports. While this limits the generalizability of the findings, examining banking groups subject to different regulatory frameworks simultaneously allows for a clearer illustration of how these framework differences manifest at the implementation level. Third, since the reporting obligation under the TSRS for Turkish banks began in 2024, it was not possible to conduct a time-series analysis. This situation limits the ability to assess the evolution of reporting practices over time. Finally, the analytical framework and evaluation process used in the study incorporate a certain degree of researcher interpretation. However, the fact that the scoring criteria were predefined and applied systematically contributes to ensuring consistency in the evaluation process (Morgan, 2022).

Findings

In this section, the findings derived from the evaluation of the four reports within the analytical framework are presented under four subheadings: materiality approach, climate risk management, reporting depth, and governance structure. Under each subheading, TSRS and CSRD/ESRS reports are examined in a comparative manner, highlighting how differences in the frameworks translate into practice.

Materiality Approach

The most notable difference in terms of the materiality approach among the four reports covered by the analysis directly reflects the fundamental design choices of the TSRS and CSRD/ESRS frameworks.

Table 3

Comparison of Materiality Approach under TSRS and CSRD/ESRS

Dimension Criteria	/	Garanti BBVA TR (TSRS)	ING Bank TR (TSRS)	BBVA Group (CSRD/ESRS)	ING Group (CSRD/ESRS)
Materiality Approach	–	4/5 Based on ESRS, ISSB, and GRI. A dual prioritization model is applied, going beyond TSRS requirements.	3/5 Single materiality with clearly defined thresholds. No risks identified as material—consistent with TSRS, yet open to interpretation.	5/5 Double materiality in line with EFRAG guidelines. Climate change, natural capital, and business ethics identified as material topics.	5/5 Double materiality required under CSRD. Transition from GRI to ESRS is documented. Climate and biodiversity identified as material.
Stakeholder Engagement		4/5 Stakeholder surveys including employees, customers, NGOs, and investors. UNEP FI Portfolio Impact Analysis applied.	2/5 Engagement limited to internal stakeholders. External stakeholder involvement is not systematically defined within the sustainability context.	4/5 Multi-stakeholder process aligned with ESRS. Includes customers, regulators, and civil society.	5/5 Most comprehensive stakeholder engagement. Employees, customers, NGOs, regulators, and suppliers are addressed separately.

Note. Created by the authors based on document analysis of publicly available sustainability and integrated reports for the 2024 reporting period. Scores (1–5) reflect the level of alignment with the analytical evaluation rubric developed in this study.

Both group reports under the CSRD/ESRS framework fully apply the principle of double materiality within the scope of the reports under review. In its 2024 report, the BBVA Group conducted its materiality assessment process in accordance with the EFRAG guidance and identified climate change, natural capital, and business ethics as material topics. ING Group, on the other hand, clearly documented its transition from a previous GRI-based approach to ESRS, declaring both climate and biodiversity as material issues. Neither report treats dual materiality merely as a compliance requirement. Rather, it is evident that this approach has been integrated into strategic decision-making processes.

Reports under the TSRS framework, however, present a divergent picture. ING Bank Türkiye has applied the single materiality approach prescribed by TSRS and did not identify any climate risks or opportunities as material during the 2024 reporting period. While this outcome is technically compliant with the fundamental requirements of the TSRS framework, it can be considered a notable finding regarding the extent to which the de-materialization of climate risks is contextually justifiable. Garanti BBVA, however, took a different approach by going beyond the single materiality framework required by the TSRS and implemented a two-way prioritization model based on ESRS, ISSB, and GRI standards. This indicates that the regulatory obligations of its parent company, BBVA, under the CSRD have shaped reporting practices at the subsidiary level.

A clear divergence is also observed among the frameworks in terms of stakeholder engagement. Based on the reports reviewed, ING Group has implemented the most comprehensive stakeholder engagement process. In this context, the company has engaged separately with employees, customers, civil society organizations, regulatory authorities, and suppliers. BBVA Group and Garanti BBVA have also conducted comprehensive stakeholder surveys. In contrast, external stakeholder engagement is not systematically defined within the context of sustainability in ING Bank Türkiye's report.

Climate Risk Management

The structural differences between the two frameworks in terms of climate risk become particularly evident in the depth of scenario analysis.

Table 4

Comparison of Climate Risk Management and Scenario Analysis under TSRS and CSRD/ESRS

Dimension / Criteria	Garanti BBVA TR (TSRS)	ING Bank TR (TSRS)	BBVA Group (CSRD/ESRS)	ING Group (CSRD/ESRS)
Climate Risk	4/5 Physical and transition risks addressed. PACTA methodology applied. RCP 8.5 scenario and sector-specific impact analyses (tourism and agriculture) included.	4/5 Five transition and three physical risks analyzed in detail. ESR scoring system integrated into lending processes. Terra methodology applied.	5/5 Full alignment with ESRS E1. Includes sector-based emission targets, financed emissions, and a decarbonization plan. Integrated into remuneration systems.	5/5 ESRS E1 and E4 (biodiversity) identified as material. Terra methodology and PCAF data applied. Double materiality fully integrated.
Scenario Analysis	3/5 RCP 8.5 and climate comfort scenarios applied.	4/5 Oxford Economics "Delayed Transition" and	5/5 IEA 1.5°C, NZE, and STEPS scenarios applied.	5/5 NGFS scenarios applied. Transition and physical risk

Financial impacts are partially undisclosed due to TSRS transitional exemptions.	“Net Zero” scenarios applied. Stress tests for credit, liquidity, and operational risks presented with quantitative results.	Differentiated by country and sector. Includes portfolio alignment analysis.	stress tests conducted. Terra-based portfolio alignment analysis across 12 sectors.
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Note. Created by the authors based on document analysis of publicly available sustainability and integrated reports for the 2024 reporting period. Scores (1–5) reflect the level of alignment with the analytical evaluation rubric developed in this study.

CSRD/ESRS reports address climate risk through both portfolio alignment analysis and multi-dimensional scenario frameworks. BBVA Group applied the IEA’s 1.5°C, Net Zero, and STEPS scenarios by breaking them down by country and sector; it conducted its portfolio alignment analysis within this framework and integrated sustainability targets into its executive compensation system. ING Group, on the other hand, utilized NGFS scenarios and conducted stress tests for transition and physical risks across 12 sectors under the Terra methodology. Additionally, it developed a specialized physical risk measurement tool covering 4 chronic and 9 acute physical risks.

There is also a notable difference among the TSRS reports. ING Bank Türkiye used the “Delayed Transition” and “Net Zero” scenarios developed by Oxford Economics; it presented stress tests related to credit, liquidity, and operational risk along with their numerical results. While Garanti BBVA applied the RCP 8.5 and climate comfort scenarios, its use of the TSRS transition exemption to omit certain financial impacts could be seen as a factor limiting the report’s analytical depth. This situation highlights a significant difference in the depth of scenario analysis even between two Turkish banks operating under the same framework; it demonstrates that differences in institutional capacity at the implementation level under the TSRS directly affect the quality of reporting.

From a climate risk management perspective, both TSRS reports systematically address physical and transition risks. While Garanti BBVA applies the PACTA methodology, ING Bank Türkiye has integrated the ING Group’s Terra methodology and ESR scoring system into its lending processes. This finding demonstrates that in sustainability reporting, it is not only regulatory frameworks but also risk management tools developed at the group level that play a decisive role.

Reporting Depth

The depth of reporting was assessed based on three sub-criteria: data and metric quality, framework compliance, and assurance level.

Table 5

Comparison of Reporting Depth under TSRS and CSRD/ESRS

Dimension / Criteria	Garanti BBVA TR (TSRS)	ING Bank TR (TSRS)	BBVA Group (CSRD/ESRS)	ING Group (CSRD/ESRS)
Data & Metrics	4/5 Greenhouse gas metrics reported. TRY 291 billion in sustainable finance. Financial data (FO) audited by EY,	4/5 Scope 1 and 2 emissions (502 tCO ₂ e) disclosed. €3,983 million in sustainable finance. Full alignment with	5/5 €304 billion in sustainable finance mobilization. Comprehensive dataset including financed emissions,	5/5 €130 billion in sustainable finance. Financed emissions calculated using the PCAF methodology.

	with audited figures clearly indicated in the report.	SASB Commercial Banks metrics..	biodiversity, and social indicators.	Extensive ESG metrics provided.
Framework Alignment	5/5 Aligned with TSRS 1&2, GRI, UNEP FI, UNGC, WEPs, Integrated Reporting Framework, and SASB—broadest framework alignment among the four reports.	3/5 Aligned with TSRS 1&2, SASB Commercial Banks Standard, ISO 14001, and ISO 50001. No formal alignment with additional international frameworks.	5/5 Aligned with CSRD/ESRS, TCFD, GRI, PRB, UNGC, and the Dow Jones Sustainability Index.	5/5 Aligned with CSRD/ESRS, PRB, TCFD, Terra, PCAF, NGFS, and the Poseidon Principles (shipping sector).
Assurance	4/5 Limited assurance by EY under ISAE 3000 and ISAE 3410. Audited financial data explicitly identified in the report.	4/5 Limited assurance by EY under ISAE 3000 and ISAE 3410. Scope and limitations of assurance clearly defined.	4/5 Limited assurance by Deloitte. Separate independent assurance report provided for non-financial information (NFIS).	4/5 Limited assurance by KPMG. Separate assurance report provided for selected financial indicators.

Note. Created by the authors based on document analysis of publicly available sustainability and integrated reports for the 2024 reporting period. Scores (1–5) reflect the level of alignment with the analytical evaluation rubric developed in this study.

In terms of data and metrics, CSRD/ESRS reports provide clearly systematic and comparable datasets. The BBVA Group has reported on its mobilization of 304 billion euros in sustainable finance, alongside financed emissions, biodiversity metrics, and social indicators. ING Group, meanwhile, has supported its 130 billion euro in sustainable finance data with financed emissions calculations based on the PCAF methodology. While TSRS reports meet a standard level of data quality, their scope is narrower; both Turkish banks have taken advantage of the transition exemptions offered in the first reporting year and have not disclosed Scope 3 emissions data.

A notable finding regarding framework alignment is that Garanti BBVA TR achieved a framework alignment score equivalent to that of CSRD/ESRS reports. The report references the GRI, UNEP FI, UNGC, WEPs, IR Framework, and SASB frameworks in addition to TSRS 1 and 2, and it can be stated that it has the highest number of referenced frameworks among the four reports. This reflects Garanti BBVA's concrete effort to incorporate the BBVA Group's global sustainability approach into its Turkish reporting. On the other hand, ING Bank Türkiye received the lowest score in this category; its report is limited solely to the TSRS and SASB Commercial Banks guidelines.

There is no significant difference among the four reports in terms of assurance. All reports were audited at a limited assurance level; Turkish banks covered by the TSRS were audited by EY in accordance with GDS 3000 and GDS 3410 standards, while group reports covered by the CSRD were audited by Deloitte and KPMG, respectively. This finding demonstrates that the structure of TSRS, which mandates assurance audits from its first year, has been effectively implemented in practice and that the assurance requirements of the TSRS and CSRD frameworks have converged to a significant extent.

Governance Structure

In terms of governance, both reports under the CSRD/ESRS framework share the highest score for both sub-criteria. Among the TSRS reports, ING Bank Türkiye stands out with a score of 5/5 for the Board of Directors role sub-criterion; it has detailed the multi-layered governance hierarchy extending from the Board of Directors to the Sustainability Department through job descriptions, authority limits, and competency criteria, and has stated that it reports to the Board of Directors at least four times a year. However, in the strategy integration dimension, both TSRS reports received a score of 4/5, falling short of the CSRD/ESRS reports.

Table 6

Comparison of Governance Structure under TSRS and CSRD/ESRS

Dimension / Criteria	Garanti BBVA TR (TSRS)	ING Bank TR (TSRS)	BBVA Group (CSRD/ESRS)	ING Group (CSRD/ESRS)
Board Role	4/5 The Sustainability and Responsible Banking Committee is linked to the Board of Directors. The board's oversight role is clearly defined, with meetings held twice per year.	5/5 A clearly structured hierarchy: Board of Directors – Corporate Governance Committee – Risk Committee – Sustainability Committee – Sustainability Department. Roles and responsibilities are formally documented. Reporting to the Board occurs at least four times annually.	5/5 ESG responsibility established at board level. Remuneration is linked to sustainability targets, including both annual and long-term variable components.	5/5 SB-ESG Committee (established as permanent in 2024), Risk Committee, and fully documented three lines of defense model.
Strategy Integration	4/5 A 15-year strategic framework focusing on climate action and inclusive growth. Includes coal phase-out commitment and net-zero target for 2050.	4/5 ING Group's net-zero targets (2035 for operations, 2050 for portfolio) are integrated into Turkish operations. Terra-based sectoral targets are embedded in lending processes.	5/5 Sustainability is one of six strategic priorities. Decarbonization strategy is fully integrated across all business lines.	5/5 Sustainability is one of two core strategic priorities. Net-zero banking is fully integrated into the portfolio and linked to remuneration.

Note. Created by the authors based on document analysis of publicly available sustainability and integrated reports for the 2024 reporting period. Scores (1–5) reflect the level of alignment with the analytical evaluation rubric developed in this study.

The CSRD/ESRS reports share the highest score for both sub-criteria under the governance dimension. At BBVA Group, sustainability is managed within the framework of the General Sustainability Policy, which is approved at the Board of Directors level; ESG responsibility is carried out across the entire corporate structure through the Executive Committee, Risk and Compliance Committee, Audit Committee, and Remuneration Committee. Remuneration integration covers both annual and long-term variable pay

components, and sustainability has been integrated into all business lines as one of six strategic priorities alongside the decarbonization strategy. At ING Group, sustainability is managed through a separate ESG Committee, which was transitioned from a temporary to a permanent status in 2024. The three lines of defense model is comprehensively documented, and the net-zero banking target has been integrated into the entire portfolio and reflected in the compensation system. While both models demonstrate comparable depth in terms of governance maturity, their structural preferences differ: BBVA Group integrates ESG responsibility into all existing committees, whereas ING Group has opted to establish a separate committee dedicated to this purpose.

Under the TSRS framework, Garanti BBVA has established a Sustainability and Responsible Banking Committee reporting to the Board of Directors; within the framework of its 15-year strategic plan, priorities such as combating the climate crisis and promoting inclusive growth are maintained, and the commitment to phase out coal and the 2050 net-zero target are upheld. At ING Bank Türkiye, the ING Group's net-zero targets have been integrated into Turkish operations, and Terra's sectoral targets have been reflected in credit approval processes. These findings demonstrate that sustainability governance differs not merely by the existence of organizational structures, but by the degree to which these structures are integrated into decision-making and performance management processes. In this context, it is assessed that the governance structures under the ESRS demonstrate a more holistic and performance-oriented integration, whereas under the TSRS (excluding ING Bank Türkiye's high documentation quality) governance remains largely at the structural level.

Overall Evaluation

When the findings across the four dimensions are evaluated together, a significant difference of 1.0 points on average is observed between reports prepared under the CSRD/ESRS and those under the TSRS (CSRD average: 4.85/5; TSRS average: 3.85/5). It is noteworthy that this difference is particularly pronounced in the dimensions of materiality approach and scenario analysis. This divergence stems largely from the TSRS's reliance on a single materiality principle and the transition exemptions specific to the first reporting year.

Table 7

Overall Comparison Scores of Banks under TSRS and CSRD/ESRS

Dimension / Criteria	Garanti BBVA TR (TSRS)	ING Bank TR (TSRS)	BBVA Group (CSRD/ESRS)	ING Group (CSRD/ESRS)
Average Score	4.0 / 5	3.7 / 5	4.8 / 5	4.9 / 5

Note. The dataset was constructed by the authors based on document analysis of publicly available sustainability and integrated reports. The reported averages were calculated by aggregating the scores across dimensions using standard statistical procedures.

However, the findings reveal two significant exceptions that demonstrate that framework-based differentiation is not absolute. First, it is observed that Garanti BBVA, through its two-way prioritization model and multi-framework alignment, has gone beyond the minimum requirements under the TSRS and achieved a framework alignment score equivalent to that of CSRD/ESRS reports in terms of reporting depth. Second, it was determined that ING Bank Türkiye stands out among TSRS reports, particularly in terms of the quality of documentation regarding its governance structure and the depth of its scenario analysis; this

performance is largely attributed to the transfer of the ING Group's methodologies and tools to its Turkish operations.

These findings clearly demonstrate that sustainability reporting is not determined solely by regulatory frameworks; it is also shaped by group-level corporate influences and methodological transfer mechanisms. This situation indicates that sustainability reporting within international banking groups can go beyond the minimum requirements set by standards, and that corporate structures play a decisive role in this process.

Discussion

The findings of this study indicate that the differences between the TSRS and CSRD/ESRS frameworks are reflected not only at the conceptual level but also in reporting practices in the banking sector. In particular, the distinction between single materiality and double materiality appears to shape the scope, depth, and stakeholder orientation of sustainability disclosures. This result is consistent with the literature emphasizing that ISSB-based standards are primarily built around an investor-oriented financial materiality logic, whereas the ESRS adopts a broader stakeholder-oriented perspective through double materiality (Baumüller & Sopp, 2022; Mezzanotte, 2024; de Villiers et al., 2024). In this sense, the study supports the argument that materiality is not simply a technical reporting criterion, but one of the main factors determining what is disclosed and how it is prioritized.

The findings also show that the ESRS framework leads to broader and more detailed reporting than ISSB-aligned standards. In the reports examined, the banks reporting under the CSRD/ESRS framework addressed climate change, biodiversity, natural capital, and business ethics within a wider materiality perimeter, whereas the TSRS reports remained more closely tied to financially relevant risks and opportunities. This pattern is in line with de Villiers et al. (2024) and Mezzanotte (2024), who highlight the conceptual divergence between IFRS Sustainability Disclosure Standards and European Sustainability Reporting Standards, and with Jørgensen et al. (2022), who discuss the tensions between financial materiality and broader stakeholder-oriented materiality in sustainability reporting and point to the growing relevance of double materiality. The present study therefore extends these conceptual discussions by showing how this divergence becomes visible in bank-level reporting practices.

Regarding climate risk reporting and scenario analysis, the results show that reports prepared under the ESRS make use of more comprehensive and multi-layered scenario frameworks, whereas TSRS reports, although technically compliant, remain relatively narrower in analytical depth, partly because of transitional exemptions. Unlike the European banks examined, which applied IEA, NGFS, and Terra-based scenarios in a systematic and sector-differentiated manner, the Turkish banks in the sample either relied on single-scenario approaches or omitted certain financial impact disclosures under transitional provisions. This contrast directly reflects the structural difference between a framework that mandates double materiality from the outset and one that permits a more gradual implementation pathway. This is broadly consistent with studies showing that European sustainability reporting has moved toward more structured and comprehensive disclosure requirements (Hummel & Jobst, 2024; Dragomir et al., 2024), and aligns with Dragomir et al. (2024) and Fedele et al. (2025), who highlight the difficulties associated with implementing double materiality during the early phase of CSRD adoption. The findings are also in line with Broniewicz et al. (2024) and Brescia et al. (2026), who show that climate-related disclosures in the European banking sector are becoming more systematic, although important limitations remain in some thematic areas.

Beyond framework-level differences, the findings point to an important institutional dimension. The variation observed between Garanti BBVA and ING Bank Türkiye, despite both operating under the TSRS framework, indicates that institutional capacity, internal methodological tools, and parent-group influence also play an important role in shaping reporting quality. Garanti BBVA voluntarily adopted a dual materiality model and referenced multiple international frameworks, while ING Bank Türkiye applied group-level tools such as Terra and Oxford Economics scenarios that go well beyond what TSRS formally requires. This result can be read together with studies emphasizing that sustainability reporting is shaped not only by regulation but also by organizational capabilities and strategic orientation (Menicucci & Paolucci, 2023; Kosztowniak, 2023). In this respect, the study adds an important nuance to the literature by showing that even within the same national reporting framework, reporting practices may differ substantially depending on corporate structure and international group integration.

These observations connect to a broader debate on the limits of standardization. Jørgensen et al. (2022) emphasize that sustainability reporting involves tensions between different understandings of materiality, particularly financial materiality and broader stakeholder-oriented materiality. In the present study, this tension is reflected in the relatively high level of formal TSRS compliance among Turkish banks, alongside more limited disclosure depth in areas such as materiality assessment and climate scenario analysis. This is particularly important in the banking sector, where climate-related risks are closely associated with credit risk exposures, loan quality, and disclosure practices (Caby et al., 2020; Di Febo et al., 2026). In this sense, the first year of TSRS implementation appears to represent a transition phase in which formal compliance has been achieved to a considerable extent, but full reporting maturity has not yet been reached.

The findings can also be discussed in relation to Tekin (2025), who shows that major Turkish banks increasingly adopt green banking strategies, particularly through green financing products, disclosure and reporting practices, greenhouse gas emissions monitoring, and energy-efficiency measures. In this respect, the relatively strong governance-related disclosures observed in the present study suggest that Turkish banks have begun to integrate sustainability into their strategic and organizational structures. However, the limitations identified in the breadth of materiality assessments and the depth of climate scenario analysis indicate that the transition from sustainability-oriented strategies to analytically comprehensive TSRS reporting remains incomplete. In other words, while sustainability and climate-related issues are increasingly reflected in Turkish banks' strategic practices, their translation into comprehensive, comparable, and analytically detailed sustainability reporting remains uneven.

At a broader level, the findings also speak to the literature on symbolic versus substantive reporting. Tarakcıoğlu Altınay and Sardoğan (2025) and Gündüz and Gündüz (2025) suggest that sustainability reporting may, in some cases, function more as a symbolic compliance practice than as an indicator of deeper structural transformation. Although the present study does not directly test symbolic disclosure, the results partially support this line of discussion: under the TSRS framework, the coexistence of formal compliance and relatively limited analytical depth suggests that regulatory alignment and substantive reporting quality should not automatically be treated as the same thing.

Finally, the study supports the broader literature suggesting that sustainability reporting in banking is increasingly becoming a strategic issue rather than merely a disclosure exercise. The influence of group-level methodologies such as Terra, PACTA, and portfolio alignment tools on reporting practices is consistent with studies showing that ESG regulation is reshaping

banking business models and risk management structures (Kosztowniak, 2023; Menicucci & Paolucci, 2023). In this sense, the findings suggest that sustainability reporting in the banking sector is evolving into an area where regulatory compliance, strategic governance, and institutional capacity intersect.

Overall, the discussion of the findings in relation to the literature suggests that this study confirms the main distinction drawn in prior research between investor-oriented and stakeholder-oriented sustainability reporting frameworks. At the same time, it also provides an important implementation-level insight: in the banking sector, reporting outcomes are shaped not only by the formal logic of the regulatory framework, but also by the organizational context in which that framework is applied.

Conclusion

This study comparatively examined the TSRS and CSRD/ESRS frameworks in the banking sector and showed that the differences between the two frameworks do not stem solely from technical reporting requirements, but also reflect different understandings of accountability and stakeholder priorities. The findings indicate that the main divergence lies in the materiality approach, and that this divergence directly affects the scope, depth, and orientation of sustainability reporting.

One of the main conclusions of the study is that the single materiality structure adopted under TSRS, with its focus on financial materiality, produces a narrower reporting framework, particularly for climate-related disclosures. In contrast, the double materiality approach under CSRD/ESRS supports a broader and more integrated disclosure structure. This difference is especially visible in the dimensions of materiality assessment and scenario analysis, where ESRS-based reports performed more strongly. This suggests that the choice of reporting framework shapes not only how information is presented, but also which issues become visible and to what extent sustainability is integrated into decision-making processes.

At the same time, the study shows that differences between reporting frameworks do not fully explain reporting outcomes on their own. Some banks reporting under TSRS were able to go beyond minimum requirements through parent-group influence, methodological transfer, and stronger institutional capacity. This is an important finding, as it suggests that reporting quality depends not only on the formal structure of standards, but also on the organizational context in which they are implemented.

When considered in relation to the literature, the results show that the conceptual distinction between investor-oriented and stakeholder-oriented sustainability reporting is also reflected in banking practice. In this sense, the study demonstrates how differences that have mostly been discussed at a conceptual level in the literature can now be observed more clearly in actual reporting practices. It also shows that the effects of regulatory differences may be reinforced or partly moderated by institutional and group-level dynamics.

For Türkiye, the findings suggest that TSRS has initiated an important transformation in sustainability reporting, but that this transformation is still at an early stage. Although the first reporting year reflects a relatively strong level of formal compliance, differences remain in terms of disclosure depth, scenario analysis capacity, and data completeness. This points to the need for more detailed implementation guidance, stronger data infrastructure, and more sector-specific direction, particularly for the banking sector.

The study has certain limitations that should be acknowledged. First, the analysis is confined to publicly available sustainability reports, which means that internal processes and decision-making mechanisms not reflected in the reports cannot be directly assessed. Second, the study covers only two banking groups and four reports, which limits the generalizability of the findings, though this design choice enables a more in-depth comparison across regulatory frameworks. Third, as the TSRS reporting obligation began in 2024, a time-series analysis was not possible, limiting the assessment of how reporting practices evolve over time. Finally, the analytical framework and scoring process involve a degree of researcher interpretation; however, the use of predefined and systematically applied criteria contributes to consistency in the evaluation process.

Future research could expand the sample and time period in order to assess whether the differences observed here persist over time. Longitudinal studies tracking TSRS reporting beyond the first year would be particularly valuable in assessing whether disclosure depth improves as institutional capacity develops. Additionally, comparative research extending the analysis to other financial sectors or employing quantitative disclosure metrics could further test the generalizability of the observed patterns.

This study makes several contributions to the existing literature. By comparing the actual 2024 sustainability reports of banking groups that simultaneously operate under both TSRS and CSRD/ESRS, it has shown empirically how two structurally different regulatory frameworks translate into different reporting outcomes at the institutional level. The analysis has demonstrated that the single versus double materiality distinction is not merely a conceptual difference but produces measurable divergence in disclosure scope, stakeholder orientation, and the depth of climate scenario analysis. At the same time, the study has revealed that reporting quality is not determined by regulatory design alone: even within the same national framework, institutional capacity and parent-group influence can lead to substantially different reporting practices. Together, these findings advance the literature by moving beyond framework-level comparisons and offering an implementation-level perspective on how sustainability reporting standards operate in practice within the banking sector.

Overall, the distinction between single materiality and double materiality should be understood not simply as a technical reporting difference, but as part of a broader difference in how sustainability is defined, whose information needs are prioritized, and how sustainability is linked to corporate decision-making. In this respect, the banking sector offers a particularly useful setting for observing how different regulatory frameworks translate into reporting practice.

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