REVISTA AMBIENTE CONTÁBIL
Universidade Federal do Rio Grande do Norte
ISSN 2176-9036
Vol. 18, n. 2, Jul./Dez, 2026
Sítios: https://periodicos.ufrn.br/index.php/ambiente
http://www.atena.org.br/revista/ojs-2.2.3-06/index.php/Ambiente
Article received in: May, 23th, 2025. Reviewed by pairs in: December, 26th, 2025. Reformulated in: January, 26th, 2026. Evaluated by the system double blind review.

DOI: 10.21680/2176-9036.2026v18n2ID44430

Disclosure of risk information in the explanatory notes of financial institutions in Brazil

Divulgación de información de riesgo en las notas explicativas de las instituciones financieras en Brasil

Divulgação de informações de riscos nas notas explicativas das instituições financeiras no Brasil

Authors

Lucas Ferreira de Moura
Bachelor's degree in Accounting from the University of Brasília (UnB). Address: Darcy Ribeiro University Campus, FACE Building, ZIP Code 70910-900, Brasília, Federal District, Brazil. Phone: +55 (61) 3107-0795. Identifiers (ID):
ORCID: https://orcid.org/0009-0005-2846-6181
Lattes: http://lattes.cnpq.br/2092169634702317
E-mail: 66lucas.moura66@gmail.com

Eduardo Bona Safe de Matos
PhD in Controllership and Accounting from the University of São Paulo (FEA/USP). Professor in the Department of Accounting and Actuarial Sciences at the University of Brasília (UnB). Address: Darcy Ribeiro University Campus, FACE Building, ZIP Code 70910-900, Brasília, Federal District, Brazil. Phone: +55 (61) 3107-0795. Identifiers (ID):
ORCID: https://orcid.org/0000-0001-9548-7664
Lattes: http://lattes.cnpq.br/7460796543847826
E-mail: eduardobona@unb.br

Vitor Hideo Nasu
PhD in Controllership and Accounting from the University of São Paulo (FEA/USP). Professor in the Department of Accounting and Actuarial Sciences at the School of Economics, Business, Accounting, and Actuary (FEA) of the University of São Paulo (USP). Address: 908 Luciano Gualberto Avenue, 908, ZIP Code 05508-010, São Paulo, São Paulo, Brazil. Phone: +55 (11) 3091-5820. Identifiers (ID):
ORCID: https://orcid.org/0000-0002-5176-6634
Lattes: http://lattes.cnpq.br/8721306139850571
E-mail: vnasu@usp.br

Abstract

Objective: To map and analyze the level of risk disclosure presented in the financial statements of financial institutions operating in Brazil.

Method: Checklist developed based on the guidelines of Resolution No. 4,557/2017 and the study by Basto and Marques (2024). The analysis focused on the explanatory notes included in the Consolidated Financial Statements (IFRS) of financial institutions classified in CMN's S1 and S2 segments, covering the period from 2017 to 2023, with a total of 84 documents examined through content analysis.

Results: The findings indicate that the most frequently disclosed risks were Market Risk (78%), Credit Risk (52%), and IRRBB (47%). An increase in disclosure levels was also observed during the first two years following the implementation of the Resolution, followed by relative stability and a decline over time. Variations in disclosure were noted across different periods and institutions, suggesting the absence of a consolidated standard for the sector. This highlights the need for progress in establishing clear criteria regarding which risk information is truly relevant to users.

Contribution: As a social contribution, the results contribute to the debate on transparency in the banking market. As a practical and regulatory contribution, the findings may support regulatory authorities' decisions regarding the inclusion or adjustment of minimum requirements for the disclosure of banking risks. Finally, as an academic and scientific contribution, the checklist for assessing the level of disclosure may be used in future research.

Keywords: Disclosure; Risks; Financial institutions; Credit risk; Market risk; Central Bank of Brazil.

Resumen

Objetivo: Mapear y analizar el nivel de divulgación de la información sobre riesgos presentada en los estados financieros de las instituciones financieras que operan en Brasil.

Método: Se desarrolló un checklist basado en las directrices de la Resolución n.º 4.557/2017 y en el estudio de Basto y Marques (2024). El análisis se centró en las notas explicativas presentes en los Estados Financieros Consolidados (IFRS) de las instituciones financieras clasificadas en los segmentos S1 y S2 del CMN, abarcando el período de 2017 a 2023, con un total de 84 documentos examinados mediante análisis de contenido.

Resultados: Los hallazgos indican que los riesgos divulgados con mayor frecuencia fueron: Riesgo de Mercado (78%), Riesgo de Crédito (52%) e IRRBB (47%). También se identificó un aumento en los niveles de divulgación durante los dos primeros años tras la entrada en vigor de la Resolución, seguido de cierta estabilidad y una disminución con el tiempo. Se observó variación en la divulgación entre los períodos e instituciones, lo que sugiere la ausencia de un estándar consolidado para el sector. Esto evidencia la necesidad de avanzar en la definición de criterios claros sobre qué información de riesgo es realmente relevante para los usuarios.

Contribuciones: Como contribución social, los resultados contribuyen al debate sobre la transparencia en el mercado bancario. Como contribución práctico-regulatoria, los hallazgos

pueden servir de apoyo a las decisiones de los organismos reguladores relativas a la inclusión o el ajuste de los requisitos mínimos de divulgación de los riesgos bancarios. Finalmente, como contribución académico-científica, la lista de verificación para evaluar el nivel de divulgación puede utilizarse en investigaciones futuras.

Palabras clave: Divulgación; Riesgos; Instituciones Financieras; Riesgo de Crédito; Riesgo de Mercado; Banco Central de Brasil.

Resumo

Objetivo: Mapear e analisar o nível de disclosure das informações de riscos evidenciadas nas demonstrações financeiras das instituições financeiras atuantes no Brasil.

Método: Checklist desenvolvido com base nas diretrizes da Resolução nº 4.557/2017 e no estudo de Basto e Marques (2024). A análise concentrou-se nas notas explicativas presentes nas Demonstrações Contábeis Consolidadas (IFRS) das instituições financeiras classificadas nos segmentos S1 e S2 do CMN, abrangendo o período de 2017 a 2023, totalizando 84 documentos examinados por meio de análise de conteúdo.

Resultados: Os achados indicam que os riscos mais frequentemente divulgados foram: Risco de Mercado (78%), Risco de Crédito (52%) e IRRBB (47%). Também foi identificado um aumento nos níveis de disclosure nos dois primeiros anos após a vigência da Resolução, seguido de certa estabilidade e queda ao longo do tempo. Observou-se variação na divulgação entre os períodos e instituições, sugerindo a ausência de um padrão consolidado para o setor. Isso evidencia a necessidade de avanços na definição de critérios claros sobre quais informações de risco são realmente relevantes para os usuários.

Contribuições: Como contribuição social, os resultados colaboram com o debate sobre a transparência no mercado bancário. Como contribuição prático-regulatória, os achados podem subsidiar decisões de órgãos reguladores referentes à inclusão ou ajuste dos requerimentos mínimos de divulgação de riscos bancários. E, como contribuição acadêmico-científica, o checklist de avaliação do nível de disclosure pode ser usado em pesquisas futuras.

Palavras-chave: Divulgação; Riscos; Instituições Financeiras; Risco de Crédito; Risco de Mercado; Banco Central do Brasil.

1 Introduction

The identification and control of risks are essential practices to prevent negative impacts on organizational operations, especially in financial institutions, given their importance and influence on society (Biondi & Zhou, 2019; Serri et al., 2017). Accordingly, risk management and risk disclosure contribute to ensuring the sustainability of financial institutions (Linsley & Shrives, 2006).

Considering that poor risk disclosure and deficient risk management can harm both the organization and its stakeholders, the National Monetary Council (CMN) and the Central Bank of Brazil (BACEN) require institutions under their supervision to prepare managerial risk reports containing detailed information on risks and to make them available to the regulator (CMN, 2017b). However, these institutions also voluntarily disclose risk-related information in

their annual reports, prioritizing the aspects they themselves perceive as most relevant (Alves & Graça, 2013; Barbosa et al., 2016; Rufino & Monte, 2015).

In the financial sector, adequate risk management and disclosure are practices aimed at preserving trust, guiding users' decisions, minimizing information asymmetry, preventing crises, and ensuring compliance with standards and regulations, such as CPC 40 (R1) and Resolution No. 4,557/2017 (CMN, 2017b). Such management and the resulting regulation prove to be important tools for market confidence and for sustaining the sector's operations.

Although regulatory standards on risk disclosure exist, researchers still point to shortcomings in the quality and manner in which such information is reported by companies across different sectors, including the financial sector (Barbosa et al., 2016; Leuz & Wysocki, 2016). Among these deficiencies are low comparability, the lack of relevant and actionable information, as well as the reciprocal effects between information and regulation.

Furthermore, issues such as risk smoothing and data omission may lead to misleading interpretations and conceal potential negative impacts (Wang et al., 2017). In addition, difficulties in accurately measuring risks may prompt institutions to choose non-disclosure or to make inappropriate use of disclosure mechanisms (Beretta & Bozzolan, 2004; Healy & Palepu, 2001; Linsley & Shrives, 2006).

In addition to these shortcomings and deficiencies in risk disclosure that render research on the topic timely, three arguments support the existence of a research gap in the national literature. First, prior studies on banking risks have focused on specific types of risk, such as credit risk (Dantas et al., 2010; Tunico & Rodrigues, 2016), operational risk (Alves & Cherobim, 2009), and market risk (Alves & Graça, 2013). Even studies that examine multiple types of risk do not achieve a level of analytical granularity comparable to that of the present work and tend to address specific topics, such as financial instruments (Carneiro, 2008). Therefore, it is argued that there is a lack of a comprehensive and integrated analysis of banking risk disclosure in Brazil.

Second, studies typically rely on statistical techniques to assess banking risk disclosure, ranging from descriptive analyses (Leite et al., 2016; Tunico & Rodrigues, 2016) to nonparametric tests (Alves & Cherobim, 2009) and panel data models (Dantas et al., 2010). In the international literature, quantitative research on risk disclosure is also common (e.g., Wang et al., 2017; Basto & Marques, 2024). Although Leite et al. (2016) conducted a content analysis, their focus was on risk disclosure in sustainability reports. Consequently, a methodological gap remains with regard to the use of content analysis to examine the notes to the financial statements (FSs). Therefore, qualitative studies should be developed in order to complement findings of a quantitative nature.

Third, the present study fills a temporal gap. Related national studies were conducted prior to 2017 (e.g., Alves & Cherobim, 2009; Alves & Graça, 2013; Carneiro, 2008; Leite et al., 2016; Tunico & Rodrigues, 2016), a period in which the National Monetary Council (CMN) issued Resolution No. 4,557/2017 (CMN, 2017b), which strengthened banks' risk management and disclosure practices in Brazil. By assessing the period from 2017 to 2023, the present research updates the analysis within the national literature on banking risk disclosure.

Considering the foregoing debate and the identified research gap, the following research question is posed: **What is the level of disclosure, by risk category, of risk-related information reported in the Financial Statements of Financial Institutions operating in Brazil?** Accordingly, the objective of this study is to map and analyze the level of disclosure of risk-related information reported in the Financial Statements of Financial Institutions operating in Brazil.

To achieve this objective, the annual reports contained in the Consolidated Financial Statements – IFRS of financial institutions classified in segments S1 and S2 (CMN, 2017a) were analyzed for the period from 2017 to 2023, with the aim of assessing the levels of disclosure practiced. To measure disclosure, a checklist was developed and content analysis was applied, considering the main categories of risks for financial institutions identified in the literature (Basto & Marques, 2024; Linsley & Shrives, 2006) and in Resolution No. 4,557/2017 (CMN, 2017b).

Overall, the results indicate that there was an increase in disclosure levels in 2018, the year in which Resolution No. 4,557/2017 (CMN, 2017b) came into force. However, this pattern was not sustained in subsequent years. A higher frequency of disclosure was observed for financial risks compared to non-financial risks, with a predominance of qualitative information over quantitative data. Market risk and credit risk stand out as the most frequently disclosed categories. Moreover, a disparity among the institutions analyzed was identified, highlighting the need for greater uniformity to facilitate the comparability of information for users.

Finally, the present research offers several contributions. First, as a social contribution, the findings have the potential to encourage higher levels of transparency on the part of banks in order to better inform their stakeholders, thereby helping to strengthen the banking sector and the financial market. Second, as a practical–regulatory contribution, the study impacts the discussion on the effectiveness of standards that affect the disclosure practices of the various types of risks faced by banks. Based on the findings of this research, regulatory bodies may adjust risk disclosure requirements. Third, as an academic–scientific contribution, a theoretical framework for the thematic categorization of risks based on content analysis is provided. This framework can be used by future researchers seeking a pre-categorization of banking risks and also serves as an instrument to assess banks' levels of disclosure.

2 Disclosure and Risks in Financial Institutions

Risks in financial institutions encompass events, threats, exposures, or opportunities that have affected, affect, or may affect the organization, such as failures in internal processes or systems (Chernobai et al., 2011), the probability of default (Imbierowicz & Rauch, 2014), accounting irregularities and fraud (Ferreira & Lustosa, 2012), and insufficient disclosure of information to the market (Linsley & Shrives, 2006). Their identification, measurement, and management serve to preserve the competitiveness and sustainability of the financial system (Chernobai et al., 2011; Imbierowicz & Rauch, 2014; Khlif & Hussainey, 2016; Linsley & Shrives, 2006).

The risks faced by financial institutions can be classified into two categories: financial and non-financial risks. Financial risks primarily include credit risk, market risk, liquidity risk, and interest rate risk in the banking book (IRRBB), which may compromise profitability, solvency, and the stability of the system (Altman & Saunders, 1997; Diamond & Rajan, 2001; Imbierowicz & Rauch, 2014). Non-financial risks, such as operational, social, and reputational risks, directly affect operations, image, and competitiveness vis-à-vis users and stakeholders (Chernobai et al., 2011; Clarkson et al., 2008; Coombs, 2007).

Among the main risks reported by financial institutions, credit risk stands out (Haveroth et al., 2018), which refers to the possibility of financial losses caused by a counterparty's failure to comply with the agreed terms. This risk may result in the devaluation of the contract, reduced profits due to concessions in renegotiations, recovery costs, and other losses arising from the borrower's default.

The literature also highlights operational risk in the financial sector, characterized by losses resulting from human, technological, or internal process failures, as well as from external events. This risk category also includes legal risk, associated with contracts that, by violating rules or regulations, generate penalties or indemnities (CMN, 2017b).

Overall, risks in financial institutions have been widely studied, with emphasis on the relevance of integrated approaches to risk management and disclosure, which are essential for maintaining the stability and sustainability of the financial system (Linsley & Shrives, 2006). Cardoso et al. (2019), for example, analyzed – using quantitative techniques – the impact of liquidity risk and its relationship with standards and regulations, showing how regulation influences financial stability. Such analysis contributes to a better understanding of risks and, consequently, to the mitigation of systemic crises, loss of confidence, and economic instability.

Muller et al. (2020), using questionnaires administered to bank managers, investigated the relationship between contingency variables and risk management processes, demonstrating that factors such as environment, strategy, and technology influence how financial institutions manage risks. This shows that risks are variable and related to the perceptions of different users. Therefore, the comprehensive disclosure of such information enhances the quality of the decision-making process.

Finally, Korontai and Fonseca (2020) developed a study on corporate governance practices for risk mitigation. Using quantitative techniques and panel data analysis, the study found evidence that governance practices positively influence organizational performance and reduce liquidity and operational risks. The authors further argue that governance practices are directly related to regulation, highlighting the importance of appropriate regulation tailored to the different sizes and characteristics of institutions.

These studies converge in highlighting the importance of risk management and disclosure as elements that promote transparency and improve the quality of accounting information, thereby benefiting users, the market, and financial institutions. In this context, disclosure functions as a mechanism to reduce information asymmetry between managers, regulators, and investors (Healy & Palepu, 2001), which arises from inequalities in access to information between internal members of the organization and external agents (Giner et al., 2020; Hooi, 2007; Khlif & Hussainey, 2016).

Risk-related information disclosed by financial institutions is relevant for external users because it enables a more accurate assessment of their risk profile, facilitates the identification of threats and opportunities, and clarifies the main challenges faced as well as the policies adopted to mitigate these risks (Giner et al., 2020). All of these aspects are important to users' decision-making processes.

Risk disclosure is particularly important in financial institutions, given the influence of uncertainty on managerial decisions, trust building, and the transparency of the information provided to users, in addition to contributing to the stability of the economic system (Linsley & Shrives, 2006). It is also driven by firms' internal characteristics, such as size, which directly affect the transparent management of operational policies, profitability, and the risks faced throughout the growth process (Diamond & Verrecchia, 1991; Healy & Palepu, 2001; Linsley & Shrives, 2006).

Financial institutions must comply with various standards and regulations, including those related to banking risks. To ensure greater transparency for stakeholders, they are encouraged to disclose, through the notes to the financial statements, information on the financial and non-financial risks to which they are exposed. In Brazil, standards and regulations on risks for financial institutions are established mainly by the Central Bank of Brazil (BACEN)

and the National Monetary Council (CMN), which are aligned with international guidelines (e.g., Basel III), with appropriate adaptations to the national context.

Among the existing regulations on the subject, Resolution No. 4,553/2017 (CMN, 2017a) stands out, as it sets forth the criteria for the segmentation of financial institutions, ranging from Segment 1 (S1) to Segment 5 (S5). S1 comprises institutions whose size is equal to or greater than 10% of Gross Domestic Product (GDP) or that have significant international operations. S2 includes institutions whose size is less than 10% and equal to or greater than 1% of GDP. S3 encompasses institutions whose share of GDP is less than 1% and equal to or greater than 0.1%. S4 consists of institutions whose size is less than 0.1% of GDP. Finally, S5 is composed of institutions whose size is less than 0.1% (one-tenth of one percent) of GDP and that use optional simplified methods to calculate the minimum requirements for Regulatory Capital (PR), Tier 1 Capital, and Common Equity Tier 1, with some exceptions. In the present research, the focus is on S1 and S2 institutions, due to their national and international relevance and because they are subject to more stringent prudential rules.

Likewise, Resolution No. 4,557/2017 (CMN, 2017b) is noteworthy, as it requires, for example, that institutions classified from S1 to S4 implement a continuous and integrated risk and capital management framework, in addition to adopting an information disclosure policy. Such management frameworks must be aligned with the business model, the scale and relevance of risk exposures, the adequacy of the risk profile, the institution's systemic importance, and its capacity to assess risks arising from macroeconomic and market circumstances within its operating context. The implementation of these risk management structures strengthens prudential management and the solvency of financial institutions in Brazil.

In addition, Resolution No. 4,606/2017 (CMN, 2017c) provides for an optional simplified methodology to calculate the minimum requirement for Simplified Regulatory Capital applicable to S5 institutions. In particular, it addresses operational risk (Section II, Article 22), defined as the "possibility of losses resulting from external events or from the failure, deficiency, or inadequacy of internal processes, people, or systems" (p. 10), and credit risk (Section III, Article 25), which represents the possibility of losses arising from a counterparty's failure to comply with agreed terms (item I), the devaluation or reduction of expected remuneration and gains from financial instruments (item II), the restructuring of financial instruments (item III), the costs of recovering exposures to impaired assets (item IV), or disbursements to honor financial guarantees (item V).

Taken together, these regulatory resolutions require the preparation of managerial reports on integrated risk and capital management for each type of financial institution segment, using either conventional or simplified methodologies. Despite this, in annual financial statements, risk disclosure still assumes a predominantly voluntary character.

Given the relevance of risk-related information in annual financial statements, studies have sought to understand the content disclosed. Oliveira et al. (2011) investigated the relationship between the quality of accounting information and the level of voluntary disclosure by companies listed in the Bovespa Mais segment. They employed content analysis using data extracted from financial statements and information disclosed by the companies, which were analyzed through descriptive statistics, the Euclidean Distance Metric, and Kendall's correlation. The results indicated that no company fully met the criteria of the analyzed metrics and suggested a positive, albeit weak, relationship between accounting information quality and voluntary disclosure.

In turn, Khlif and Hussainey (2016) examined the determinants of corporate risk disclosure through a meta-analysis of 42 empirical studies, in light of the heterogeneity of findings observed in the literature. Their objective was to verify whether these differences stem

from random error or from institutional, legal, and methodological factors. The results indicated that legal systems, disclosure regimes, industry types, levels of uncertainty avoidance, and the proxies used influence the relationships between firm size, leverage, profitability, and risk disclosure. The study discusses implications and proposes directions for future research.

Linsley and Shrives (2006) analyzed corporate risk disclosure practices through a content analysis of 79 annual reports from UK companies, seeking to address gaps in the empirical literature. The results indicate a significant association between the volume of risk disclosures and firm size, as well as with the level of environmental risk. However, no relationship is observed with other measures of financial risk. The analyses show a predominance of qualitative information, limited monetary measurement, and a greater focus on forward-looking risks. The lack of coherence in the narratives suggests the existence of an information gap that hinders stakeholders' assessment of risk. Other similar studies can be found in the prior literature (Basto & Marques, 2024; Giner et al., 2020; Hooi, 2007; Nahar & Jahan, 2021; Wang et al., 2017).

Despite regulatory requirements, risk disclosure is understood as a strategy that goes beyond mere regulatory compliance, contributing to the building of trust, transparency, and the legitimacy of the information disclosed (Healy & Palepu, 2001; Linsley & Shrives, 2006). The adoption of well-established disclosure practices reinforces institutions' image of soundness and responsibility, promoting greater sustainability and development in the financial sector (Healy & Palepu, 2001).

3 Methodological Procedures

3.1 Sample Composition

To achieve the research objective, the notes to the Consolidated annual reports – IFRS of the largest financial institutions operating in Brazil were examined from 2017 to 2023. The sample included institutions classified by the CMN in segments S1 and S2 throughout the entire period. This segmentation allows for the application of standards more appropriate to institutions' size, risk profile, and international operations.

Institutions classified as S1 and S2 are those with a share of GDP of 1% or more and with relevant international operations, according to the criteria set out in Resolution No. 4,553/2017 (CMN, 2017a). Their selection is also related to studies showing that firm size is associated with the quality of risk disclosure in financial institutions (Khlif & Hussainey, 2016; Linsley & Shrives, 2006; Oliveira et al., 2011). Therefore, these are the institutions with the best conditions to provide high-quality risk disclosure, which constitutes the focus of this research.

In addition to the selection aspects described, the exclusion of the other segments is related to the nature of regulation. Smaller institutions, by virtue of their classification, are subject to proportionality in prudential regulation. For example, institutions classified in S3 are subject to simplified rules for the risk management framework and for specific risks, such as market risk and interest rate risk in the banking book (IRRBB).

Finally, the remaining segments represent institutions that, in general, are not exposed to all the risks mapped by the CMN, which could lead to a misleading interpretation of disclosure quality, since the absence of risk-related information could be due to the nonexistence of such risk at the institution rather than to low disclosure quality per se.

Based on the criteria described, a total of 12 institutions classified in segments S1 and S2 were selected for the analyzed period, resulting in the examination of 84 documents, as presented in Table 1.

Table 1
Research's Sample Composition

Institution	2017	2018	2019	2020	2021	2022	2023	Total
Banco do Brasil	S1	S1	S1	S1	S1	S1	S1	7
Bradesco	S1	S1	S1	S1	S1	S1	S1	7
BTG Pactual	S1	S1	S1	S1	S1	S1	S1	7
Caixa	S1	S1	S1	S1	S1	S1	S1	7
Itaú	S1	S1	S1	S1	S1	S1	S1	7
Santander	S1	S1	S1	S1	S1	S1	S1	7
Banrisul	S2	S2	S2	S2	S2	S2	S2	7
Banco do Nordeste	S2	S2	S2	S2	S2	S2	S2	7
BNDES	S2	S2	S2	S2	S2	S2	S2	7
Citibank	S2	S2	S2	S2	S2	S2	S2	7
Safra	S2	S2	S2	S2	S2	S2	S2	7
Votorantim	S2	S2	S2	S2	S2	S2	S2	7
Total	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**84**

Source: *Research data.*

The choice of the analysis period is grounded in the entry into force of Resolution No. 4,557/2017 (CMN, 2017b), which establishes guidelines for risk management and information disclosure by financial institutions authorized to operate in Brazil. Accordingly, the study covers the years following the issuance of the regulation, with the aim of observing institutions' behavior and adaptation with respect to risk disclosure.

3.2 Research Instrument and Description of the Analysis

The annual reports, prepared in accordance with IFRS, of the selected institutions were used. The analysis focused specifically on the notes to the financial statements related to risks. The choice of these documents is justified by the fact that they are widely consulted by users, as they provide an integrated view of the company's accounting, financial, and non-financial information. Although there are specific reports required by regulators, the financial statements were chosen based on the principle of relevance, which prioritizes the disclosure of information deemed useful to external users by the issuers themselves (CPC 00 (R2), 2019).

Additionally, publicly traded companies are legally required to disclose information that is subject to independent audit, thereby conferring greater credibility on the data presented. Prior studies have also used financial statements as the basis for analysis, highlighting their ease of access, the standardization of information, and the increased comparability and relevance for stakeholders over time (Linsley & Shrives, 2006; Oliveira et al., 2011; Wang et al., 2017; Weber & Müßig, 2022).

The development of the analysis instrument was based on a prior study that examined the relationship between the national culture of European Union banks and voluntary disclosures on operational risk (Basto & Marques, 2024). That study used a checklist designed to guide manual data collection and the content analysis of disclosures made by financial institutions.

Thus, in the present research, the previously used technique was adapted in order, initially, to define the disclosure criteria based on Resolution No. 4,557/2017 (CMN, 2017b), which specifies the disclosure requirements for financial institutions. Although managerial risk reports concentrate the required information, the financial statements contain notes to the financial statements with the data deemed most relevant by each company, in accordance with CPC 00 (R2) (2019). Accordingly, the checklist used in this research was constructed based on the items and risks set forth in the aforementioned resolution, resulting in the following checklist, as shown in Table 2:

Table 2

Description of the Research Instrument

Risk / Category	Code	Description / Subcategory
1. Credit Risk	1.0	Definition of credit risk.
	1.1	Counterparty's failure to meet its obligations under the agreed terms.
	1.2	Devaluation, reduction of remuneration, and expected gains on a financial instrument resulting from the deterioration of the counterparty's, intermediary's, or risk mitigator's credit quality.
	1.3	Restructuring of financial instruments.
	1.4	Recovery costs of exposures classified as impaired assets.
2. Market Risk	2.0	Definition of market risk.
	2.1	Risk arising from variations in interest rates and stock prices for instruments classified in the trading book.
	2.2	Risk arising from exchange rate variations and commodity prices for instruments classified in the trading book or in the banking book.
3. IRRBB	3.0	Definition of interest rate risk in the banking book (IRRBB).
	3.1	Assessment and control of its main determinants, including mismatches between assets and liabilities in terms of maturities, rates, indexers, and currencies.
	3.2	Identification, measurement, and control of this risk based on methodologies consistent with the characteristics of the banking book and that consider the maturity, liquidity, and risk sensitivity of instruments classified in that book.
4. Operational Risk	4.0	Definition of operational risk.
	4.1	Internal fraud.
	4.2	External fraud.
	4.3	Labor claims and deficient workplace safety.
	4.4	Inadequate practices relating to end users, clients, products, and services.
	4.5	Damage to physical assets owned or used by the institution.
	4.6	Events that cause interruption of the institution's activities or continuity of the services provided, including payment services.
	4.7	Failures in information technology systems, processes, or infrastructure.
	4.8	Failures in execution, meeting deadlines, or managing the institution's activities, including those related to payment arrangements.
5. Liquidity Risk	5.0	Definition of liquidity risk.
	5.1	Possibility that the institution may not be able to efficiently meet its expected and unexpected, current and future obligations, including those arising from the posting of collateral, without affecting its daily operations and without incurring significant losses.
	5.2	Possibility that the electronic money issuing institution may not be able to convert it into physical or book-entry money at the time of the user's request.
	5.3	Possibility that the institution may not be able to trade a position at market price due to its large size relative to the normally traded volume or due to some market discontinuity.

6. Social Risk	6.0	Definition of social risk.
	6.1	Acts of harassment, discrimination, or prejudice based on personal attributes such as ethnicity, race, color, socioeconomic condition, family status, nationality, age, sex, sexual orientation, gender identity, religion, belief, disability, genetic or health condition, and ideological or political positioning.
	6.2	Practices related to work under conditions analogous to slavery.
	6.3	Irregular, illegal, or criminal exploitation of child labor.
	6.4	Practices related to human trafficking, sexual exploitation, or the criminal profiteering from prostitution.
	6.5	Non-compliance with social security or labor legislation, including legislation related to occupational health and safety.
	6.6	Irregular, illegal, or criminal acts that negatively impact traditional peoples or communities, including Indigenous and Quilombola communities, such as invasion or irregular, illegal, or criminal exploitation of their lands.
	6.7	Harmful acts against public property, historical heritage, cultural heritage, or the urban order.
	6.8	Irregular, illegal, or criminal practices associated with food or products potentially harmful to society, subject to specific legislation or regulation, including pesticides, addictive substances, nuclear or radioactive materials, firearms, and ammunition.
	6.9	Irregular, illegal, or criminal exploitation of natural resources, involving violations of fundamental rights or guarantees or harmful acts to the common interest, including water, forest, energy, and mineral resources, including, where applicable, the installation and dismantling of the respective facilities.
	6.10	Irregular, illegal, or criminal processing of personal data.
	6.11	Environmental disaster resulting from human intervention, involving violations of fundamental rights or guarantees or harmful acts to the common interest, including dam failures, nuclear accidents, or the spillage of chemicals or waste into waters.
	6.12	Changes in legislation, regulation, or governmental action associated with a fundamental right or guarantee or a common interest that negatively impact the institution.
	6.13	Acts or activities that, although regular, legal, and non-criminal, negatively impact the institution's reputation because they are considered harmful to the common interest.
7. Environmental Risk	7.0	Definition of environmental risk.
	7.1	Irregular, illegal, or criminal conduct or activities against fauna or flora, including deforestation, forest fires, degradation of biomes or biodiversity, and practices associated with trafficking, cruelty, abuse, or mistreatment of animals.
	7.2	Irregular, illegal, or criminal pollution of air, water, or soil.
	7.3	Irregular, illegal, or criminal exploitation of natural resources, involving environmental degradation, including water, forest, energy, and mineral resources, including, where applicable, the installation and dismantling of the respective facilities.
	7.4	Non-compliance with environmental licensing conditions.
	7.5	Environmental disaster resulting from human intervention, involving environmental degradation, including dam failures, nuclear accidents, or the spillage of chemicals or waste into soil or waters.
	7.6	Changes in legislation, regulation, or governmental action resulting from environmental degradation that negatively impact the institution.
	7.7	Acts or activities that, although regular, legal, and non-criminal, negatively impact the institution's reputation as a result of environmental degradation.
8. Climate Transition Risk	8.0	Definition of transition risk.
	8.1	Changes in legislation, regulation, or governmental action associated with the transition to a low-carbon economy that negatively impact the institution.

	8.2	Technological innovation associated with the transition to a low-carbon economy that negatively impacts the institution.
	8.3	Changes in the supply or demand for products and services associated with the transition to a low-carbon economy that negatively impact the institution.
	8.4	Unfavorable perception by clients, the financial market, or society at large that negatively impacts the institution's reputation regarding its degree of contribution to the transition to a low-carbon economy.
9. Physical Climate Risk	9.0	Definition of physical climate risk.
	9.1	Extreme climatic conditions, including drought, flooding, storms, cyclones, frost, and wildfires.
	9.2	Permanent environmental changes, including sea level rise, scarcity of natural resources, desertification, and changes in rainfall or temperature patterns.
10. Country and Transfer Risk	10.0	Definition of country risk and transfer risk.
	10.1	Exposure assumed to the central government of a foreign jurisdiction.
	10.2	Event related to a foreign jurisdiction different from that where the counterparty or the issuer of a risk mitigation instrument is located, when the counterparty or issuer may be significantly impacted by such event.
	10.3	Possibility of obstacles to the currency conversion of resources necessary to settle an obligation to the institution when such resources are located in a jurisdiction different from that where the respective settlement will take place.
11. Risk Appetite	11.0	Definition of risk appetite.
	11.1	Presents how risk appetite is defined within the institution, as well as how it is managed so that the activities carried out do not exceed the defined level.
12. Reputational Risk	12.0	Definition of reputational risk.
	12.1	Develops ways to prevent and control reputational risk, presenting factors that may aggravate the occurrence of this type of risk.
13. Compliance	13.0	Definition of compliance.
	13.1	Develops ways to prevent and control compliance risk.

Source: *Research data.*

Based on the guidelines set forth in Resolution No. 4,557/2017 (CMN, 2017b), categories were defined to assess the content voluntarily disclosed in the notes to the financial statements of financial institutions. The analysis followed the principles of content analysis (Bardin, 2018), and the instrument was adjusted as the data analysis progressed, following the subsequent stages: organization of the analysis and material exploration; coding; categorization; and inference.

These procedures enabled the continuous construction of the instrument, which was constantly refined throughout the analysis. Adjustments to the instrument occurred mainly during the stages of organizing the analysis and exploring the material, as well as during the categorization process itself. It is emphasized that the entire process was carried out manually, with the support of electronic spreadsheets such as Excel. For methodological grounding, in addition to the instrument presented in Table 2, a reference document was prepared including the regulations that guided each of the risks (categories) and descriptions (subcategories), as well as the definitions of the risks (categories) according to each of the respective standards.

During the material exploration phase, all notes to the FSs that directly described risks were selected through a full reading of the annual reports. Subsequently, the specific notes were read in detail, with the identification of patterns and the main topics addressed. As a result, additional categories – Risk Appetite, Reputational Risk, and Compliance – were created. Although these categories are not mandatory disclosure criteria, they were added due to their recurring appearance during the exploration of the notes to the FSs.

Specifically, the Risk Appetite category, although not a risk itself, was included because it is stipulated in the study's baseline resolution (CMN, 2017b) and because it frequently appears in the annual reports of financial institutions. The remaining categories were selected due to their relevance and connection with other themes addressed: voluntary disclosure may mitigate Reputational Risk, whereas Compliance represents adherence to the regulatory requirements analyzed in this research.

Finally, during the coding classification process, it was observed that some excerpts in the notes to the FSs did not fit into any existing category, which led to the inclusion of "definition" categories for each type of risk. Although definitions are not required by the regulation and were not included in the base study (Basto & Marques, 2024), their presence was observed in the notes to the FSs of the analyzed institutions and, for this reason, they were incorporated into the instrument.

Based on the final checklist, data tabulation was carried out through a full reading and analysis of each FS disclosed, recording the presence (or absence) of each subcategory, provided that it directly addressed the point in question. The mere presence of charts and/or tables without sufficient accompanying textual explanations to contextualize the subcategories was disregarded (coded as absent). Therefore, for data tabulation and code classification, the premise adopted was the existence of textual content that was not limited to tables or images.

As in the construction of the research instrument, the coding and classification stages of the content analysis were carried out through manual tabulations within the FS files themselves and in Excel. For this purpose, all textual excerpts from the selected notes to the FSs were transformed into base codes for analysis. In the files, the excerpts were marked and classified using tags corresponding to each of the codes presented in Table 2. The intention was for all excerpts to receive some classification; that is, all files were 100% coded with respect to risk-related content.

After this stage, the data were transferred to Excel, enabling the classification and inference of the information. During this transfer, a file was created containing detailed information, such as the note to the FS used in each document, the document code, the institution's segment, year, audit firm, and page numbers; for each of the codes in Table 2, a "Yes" or "No" field was included. Once fully completed, the dataset enabled the inferences reported in the results of this research. In summary, 84 annual reports from 12 financial institutions covering the period from 2017 to 2023 were tabulated across 64 subcategories (Table 2), totaling 5,376 tabulations on institutional disclosure.

4 Results and Analyses

4.1 Analysis of Disclosure by Type of Risk

Based on the procedures described and the application of the checklist to the FSs of the selected companies, certain types of risk exhibited higher levels of disclosure, indicating heterogeneity in the distribution of disclosure across categories. Table 3 presents the ranking and the percentage frequency of presence for each risk, calculated as the sum of its subcategories. In this table, only percentage values are reported due to the differing numbers of subcategories across the various risks. This approach allows for comparability among the different risk categories.

Table 3

Frequency Ranking by Risk Category

Code	Category / Years	2017	2018	2019	2020	2021	2022	2023	Total	Ranking
2	Market Risk	72%	83%	78%	81%	81%	81%	72%	78%	1st
1	Credit Risk	45%	50%	58%	55%	55%	52%	47%	52%	2nd
3	IRRBB	44%	56%	56%	56%	50%	39%	31%	47%	3rd
5	Liquidity Risk	31%	48%	44%	46%	46%	40%	35%	41%	4th
11	Risk Appetite	33%	38%	33%	38%	38%	25%	8%	30%	5th
4	Operational Risk	15%	29%	28%	24%	24%	20%	18%	22%	6th
13	Compliance	8%	13%	13%	13%	13%	13%	13%	12%	7th
12	Reputational Risk	4%	4%	17%	13%	13%	8%	8%	10%	8th
9	Physical Climate Risk	6%	6%	6%	3%	0%	0%	0%	3%	9th
7	Environmental Risk	4%	3%	3%	2%	1%	2%	3%	3%	10th
10	Country and Transfer Risk	2%	2%	2%	2%	2%	4%	2%	2%	11th
8	Climate Transition Risk	3%	3%	3%	2%	0%	0%	0%	2%	12th
6	Social Risk	2%	2%	1%	2%	1%	1%	1%	1%	13th
	Total	**16%**	**21%**	**21%**	**20%**	**19%**	**17%**	**15%**	**18%**	

Source: *Research data.*

An increase in the frequency of disclosure is observed – both by category and in total – after the first year of effectiveness of Resolution No. 4,557/2017 (CMN, 2017b), followed by a decline from 2019 onward. This indicates that, although there was an initial boost, a consistent pattern was not maintained over time. The decrease in disclosure levels may limit the standardization expected by the market or, alternatively, may indicate an adjustment toward a more efficient and less excessive model of information presentation.

Financial institutions tend to disclose Market Risk, Credit Risk, IRRBB, Liquidity Risk, Risk Appetite, and Operational Risk more frequently, indicating that these are considered the most relevant categories. Prior studies argue that credit risk is the most voluntarily disclosed risk, driven by the need for transparency, the reduction of information asymmetry, and its relevance to financial stability (Beretta & Bozzolan, 2004; Linsley & Shrives, 2006). In non-financial firms, market and liquidity risks stand out, as disclosures aim to demonstrate solidity and managerial consolidation (Elshandidy et al., 2013). Overall, market and credit risks are the most relevant for financial institutions (Hassan & Marston, 2010), which reinforces the findings of this study.

The results of this research may be explained by the still-emerging stage of the Brazilian market and its relative instability, which generates a disclosure pattern that differs from studies conducted in other contexts, with a greater emphasis on risks external to the institution. In contrast, categories such as Compliance, Reputational Risk, Climate Risks (Physical and Transition), Environmental Risk, Country and Transfer Risk, as well as Social Risk, exhibited lower levels of disclosure.

The lower frequency of these categories may be related to the absence of regulatory requirements, limited user pressure for such information, the fact that these categories already appear in specific reports – such as sustainability or Environmental, Social, and Governance (ESG) reports – as well as difficulties in measurement and standardization and limited technical resources. In addition, there is a tendency to prioritize data with direct and short-term financial impact (Gray, 2006; Hahn & Kühnen, 2013; Kolk, 2008). With the advancement of ESG discussions in recent years, these themes have gained prominence. However, studies indicate

that the level of ESG-related disclosure is still lower than that of financial risks (Eccles & Klimenko, 2019; Khan et al., 2016; Kolk, 2010).

After the aggregated analysis, the discussion turns to the category-level analysis. Credit Risk was present in all annual reports analyzed, having been addressed in at least one of the listed subcategories. In Table 4, Credit Risk is disaggregated by subcategory, both in absolute and percentage terms.

Table 4

Frequency Analysis of Credit Risk Subcategories

Subcategory / Years	2017	2018	2019	2020	2021	2022	2023	Total	Rank
1.0 Definition of credit risk	8	8	9	8	8	8	8	57	2nd
	67%	67%	75%	67%	67%	67%	67%	68%	
1.1 Counterparty default	10	11	11	11	11	11	11	76	1st
	83%	92%	92%	92%	92%	92%	92%	91%	
1.2 Losses from deterioration of credit quality	6	7	8	8	8	7	6	50	3rd
	50%	58%	67%	67%	67%	58%	50%	60%	
1.3 Restructuring of financial instruments	2	3	5	5	5	3	2	25	4th
	17%	25%	42%	42%	42%	25%	17%	30%	
1.4 Recovery costs of impaired assets	1	1	2	1	1	2	1	9	5th
	8%	8%	17%	8%	8%	17%	8%	11%	
Total – Credit Risk	**27**	**30**	**35**	**33**	**33**	**31**	**28**	**217**	
	45%	**50%**	**58%**	**55%**	**55%**	**52%**	**47%**	**52%**	

Source: *Research data.*

Within the Credit Risk category, subcategories 1.1 and 1.2 were the most recurrent. This can be explained by the relevance of the financial impacts arising from borrowers' contractual non-compliance, which may compromise the recovery of principal and interest, thereby directly affecting profitability. As this constitutes the core activity of these institutions, it is also considered the risk with the greatest potential impact (Altman & Saunders, 1997; Drehmann et al., 2010). Moreover, the existence of standards such as IFRS 9 (CPC 48), which require the recognition of expected losses based on reliable default estimates, establishes a direct link between risk and accounting figures, reinforcing the need for disclosure in the notes to the FSs.

Criteria 1.3 and 1.4, which address contract renegotiations and credit recovery costs, exhibited lower levels of disclosure in the analysis. This is due to the fact that such situations involve specific adjustments to contractual terms in order to support distressed counterparties, representing a lower level of risk exposure. In addition, as noted by prior studies, institutions tend to prioritize the disclosure of qualitative information, avoiding detailed quantitative data on operational costs arising from default (Beretta & Bozzolan, 2004; Linsley & Shrives, 2006).

Categories 2 (Market Risk) and 3 (IRRBB) stand out as relevant risks according to the research results. Market Risk involves fluctuations in interest rates, equity prices, exchange rates, and commodities in the trading or banking books, whereas IRRBB refers exclusively to interest rate variations in the Banking Book. Table 5 presents the levels of disclosure for these categories.

Table 5

Frequency Analysis of Market Risk and IRRBB Subcategories

Subcategory / Years	2017	2018	2019	2020	2021	2022	2023	Total	Rank
2.0 Definition of market risk	8 67%	10 83%	9 75%	9 75%	9 75%	9 75%	8 67%	62 74%	3rd
2.1 Variation in interest rates in the trading book	9 75%	10 83%	10 83%	10 83%	10 83%	10 83%	9 75%	68 81%	1st
2.2 Exchange rate variation	9 75%	10 83%	9 75%	10 83%	10 83%	10 83%	9 75%	67 80%	2nd
Total – Market Risk	**26 67%**	**30 77%**	**28 72%**	**29 74%**	**29 74%**	**29 74%**	**26 67%**	**197 78%**	
3.0 Definition of IRRBB	3 25%	4 33%	4 33%	4 33%	2 17%	0 0%	0 0%	17 20%	3rd
3.1 Assessment and control of its determinants	5 42%	7 58%	7 58%	7 58%	7 58%	6 50%	5 42%	44 52%	2nd
3.2 Measurement and control through methods	8 67%	9 75%	9 75%	9 75%	9 75%	8 67%	6 50%	58 69%	1st
Total - IRRBB	**16 67%**	**20 75%**	**20 75%**	**20 75%**	**18 75%**	**14 67%**	**11 50%**	**119 47%**	

Source: *Research data.*

Based on subcategories 2.1, 2.2, and 3.2, it can be observed that the primary form of mitigating Market Risk and IRRBB involves the application of measurement techniques. Methodologies such as stress testing, Value at Risk (VaR), Economic Value of Equity (EVE), and Sensitivity Analysis are employed, along with limits for Earnings Management and Financial Exposure. Institutions detail the functioning of these tools, methodologies, and controls, as well as their exposure to different indexers according to the portfolio analyzed (Alves & Graça, 2013).

The importance of these items is evidenced by the high disclosure percentages in the subcategories of Market Risk and IRRBB, even surpassing the aggregate disclosure of other risks. Operational risk, by contrast, is generally addressed with a focus on qualitative information. In light of the above, Table 6 presents the representativeness and absolute values of the information disclosed on operational risk.

Table 6

Frequency Analysis of Operational Risk Subcategories

Subcategory / Years	2017	2018	2019	2020	2021	2022	2023	Total	Rank
4.0 Definition of operational risk	6 50%	8 67%	8 67%	7 58%	7 58%	7 58%	5 42%	48 57%	1st
4.1 Internal fraud	4 33%	7 58%	6 50%	6 50%	6 50%	6 50%	5 42%	40 48%	2nd
4.2 External fraud	2 17%	3 25%	2 17%	3 25%	3 25%	3 25%	3 25%	19 23%	3rd
4.3 Labor risks	0 0%	2 17%	2 17%	2 17%	2 17%	2 17%	2 17%	12 14%	6th
4.4 Inadequate practices with users	0 0%	1 8%	1 8%	1 8%	1 8%	0 0%	0 0%	4 5%	8th
4.5 Damage to physical assets	0 0%	1 8%	1 8%	1 8%	1 8%	0 0%	0 0%	4 5%	8th
4.6 Interruption of activities	2 17%	4 33%	4 33%	2 17%	2 17%	1 8%	1 8%	16 19%	4th
4.7 Technological failures	2	3	4	2	2	1	1	15	5th

	17%	25%	33%	17%	17%	8%	8%	18%	
4.8 Failure in the execution of activities	0 0%	2 17%	2 17%	2 17%	2 17%	2 17%	2 17%	12 14%	6th
Total – Operational Risk	**16** **15%**	**31** **29%**	**30** **28%**	**26** **24%**	**26** **24%**	**22** **20%**	**19** **18%**	**170** **23%**	

Source: *Research data.*

Among the most recurrent subcategories are those related to internal and external fraud (4.1 and 4.2), which are often associated with major crises, such as that of Enron. Operational risks in financial institutions – specifically fraud – can affect a wide range of users, including shareholders, depositors, clients, suppliers, employees, and creditors, among others (Sanusi et al., 2015). Beyond the directly affected parties, such risks generate potential spillover effects for the market due to the monetary magnitude of these institutions, which has led – and may again lead – to systemic crises. As an example, the case of the investment bank Lehman Brothers illustrates how inadequate operational practices triggered the subprime crisis, with global repercussions.

In this sense, fraud disclosure was found to be present, albeit with lower representativeness than other subcategories. In Brazil, real cases of fraud remain in the sector's memory, such as Banco Panamericano with accounting fraud (Ferreira & Lustosa, 2012) and Banco Santos with financial misappropriation fraud, which underscores the ongoing need for disclosure regarding the risks involved and how the entity is acting to mitigate such risks. Moreover, this topic is expected to gain further relevance due to the recent case currently being discussed in Brazil involving Banco Master, which may foster increased disclosure by other market participants.

With technological advancement and the growth of digital service delivery, subcategories 4.6, 4.7, and 4.8 – linked to failures in systems and processes – have gained greater prominence. However, during and after the pandemic, a reduction in the relevance attributed to these risks by institutions was observed. This finding contrasts with current discussions, which highlight technological issues as one of the main risks faced by companies.

Following the analysis of the most relevant categories, Table 7 presents the levels of disclosure for each liquidity risk subcategory.

Table 7

Frequency Analysis of Liquidity Risk Subcategories

Subcategory / Years	2017	2018	2019	2020	2021	2022	2023	Total	Rank
5.0 Definition of liquidity risk.	6 50%	9 75%	9 75%	8 67%	8 67%	8 67%	7 58%	55 66%	2nd
5.1 Inability to meet obligations	8 67%	10 83%	10 83%	10 83%	10 83%	10 83%	9 75%	67 80%	1st
5.2 Currency conversion problems	0 0%	1 8%	0 0%	1 8%	1 8%	0 0%	0 0%	3 4%	4th
5.3 Difficulty in trading assets	1 8%	3 25%	2 17%	3 25%	3 25%	1 8%	1 8%	14 17%	3rd
Total – Liquidity Risk	**15** **31%**	**23** **48%**	**21** **44%**	**22** **46%**	**22** **46%**	**19** **40%**	**17** **35%**	**139** **41%**	

Source: *Research data.*

Despite legal and regulatory requirements, the disclosure of liquidity risk varies significantly across institutions. Frequently, the information is insufficient, with a lack of detail regarding available funding sources in situations of liquidity shortage, in addition to a

predominance of qualitative data, which limits users' understanding (Lemos et al., 2024; Passoni et al., 2018). Nevertheless, the importance of this topic is evidenced by the 80% disclosure rate in subcategory 5.1.

Although it is not a mandatory disclosure category, the presence of risk appetite disclosure was observed to be more representative than that of other categories addressed by Resolution No. 4,557/2017 (CMN, 2017b). In this regard, Table 8 presents the levels of disclosure related to information on institutions' risk appetite.

Table 8

Frequency Analysis of Risk Appetite Subcategories

Subcategory / Years	2017	2018	2019	2020	2021	2022	2023	Total	Rank
11.0 Definition of appetite risk	4 33%	4 33%	4 33%	4 33%	4 33%	3 25%	1 8%	24 29%	2nd
11.1 Definition of value and how it is managed	4 33%	5 42%	4 33%	5 42%	5 42%	3 25%	1 8%	27 32%	1st
Total – Appetite Risk	**8** **33%**	**9** **38%**	**8** **33%**	**9** **38%**	**9** **38%**	**6** **25%**	**2** **8%**	**51** **30%**	

Source: *Research data.*

The disclosure of information related to risk appetite proves to be important for the risk management process in the financial sector, especially for governance and organizational monitoring purposes. As argued in the context of operational risk, a consistent risk appetite has the capacity to provide information that helps predict and understand financial crises (Vilela et al., 2023). It should be emphasized that the disclosure of risk appetite criteria does not constitute a risk per se, but rather a strategy to inform how the entity manages its risks and establishes pathways for tolerable limits, thereby ensuring organizational sustainability.

In this sense, disclosure enables users to understand how the entity monitors its risks and the perspective of governance bodies on the matter. Even at the international level, risk appetite definitions are understood to still be under development, and there remains a path to be traveled toward faithful and high-quality information; nevertheless, managers and members of governance bodies recognize that control through risk appetite is necessary in financial institutions (Gontarek & Bender, 2019).

Based on the results, it is observed that most financial institutions do not detail the parameters used to define their risk appetite, limiting themselves to generic information. The lack of standardization hinders comparability across organizations, although the presence of the topic indicates its recognized relevance. In light of this, it becomes necessary to question what should actually be disclosed to users, since it is contradictory to consider the topic important while, at the same time, failing to present clear information on value definitions, control mechanisms, and mitigation strategies.

Among the benefits of risk appetite disclosure, one can argue for the strengthening of risk governance, the enhanced ability to integrate risks into the decision-making process, the reinforcement of a risk culture within the organization, and the importance attributed by management to the effective monitoring of risks. Such aspects can contribute both internally and externally, and it is suggested that regulators require greater disclosure on this subject.

Finally, Table 9 presents the subcategories that were identified as the most frequent within the analysis conducted, regardless of the risk category to which they refer.

Table 9

Analysis of the Most Frequent Subcategories in the Study

Code / Subcategory	2017	2018	2019	2020	2021	2022	2023	Total	Rank
1.1 Counterparty default	10 83%	11 92%	11 92%	11 92%	11 92%	11 92%	11 92%	76 91%	1°
2.1 Variation in interest rates in the trading book	9 75%	10 83%	10 83%	10 83%	10 83%	10 83%	9 75%	68 81%	2°
2.2 Exchange rate variation	9 75%	10 83%	9 75%	10 83%	10 83%	10 83%	9 75%	67 80%	3°
5.1 Inability to meet obligations	8 67%	10 83%	10 83%	10 83%	10 83%	10 83%	9 75%	67 80%	3°
2.0 Definition of market risk	8 67%	10 83%	9 75%	9 75%	9 75%	9 75%	8 67%	62 74%	5°
3.2 Measurement and control through methods	8 67%	9 75%	9 75%	9 75%	9 75%	8 67%	6 50%	58 69%	6°
1.0 Definition of credit risk	8 67%	8 67%	9 75%	8 67%	8 67%	8 67%	8 67%	57 68%	7°
5.0 Definition of liquidity risk	6 50%	9 75%	9 75%	8 67%	8 67%	8 67%	7 58%	55 66%	8°
1.2 Losses from deterioration of credit quality	6 50%	7 58%	8 67%	8 67%	8 67%	7 58%	6 50%	50 60%	9°
4.0 Definition of operational risk	6 50%	8 67%	8 67%	7 58%	7 58%	7 58%	5 42%	48 57%	10°

Source: *Research data.*

It was observed that risk definitions frequently appear as introductory elements to the topics, accounting for four of the ten most recurrent subcategories in the study. Although they do not add significant informational value – since these definitions are already set out in Resolution No. 4,557/2017 (CMN, 2017b) – their presence is relevant due to the frequency observed rather than their intrinsic nature. Still, given that companies are required to report information that is useful to users (CPC 00 (R2), 2019), the high volume of occurrences denotes their perceived importance. It is worth noting that this information is not required even in the specific integrated risk management reports (CMN, 2017b), but was included due to the researchers' analytical judgment during the analysis.

From the perspective of annual reports disclosure, the risks considered most relevant to users are those associated with the core activities of financial institutions, especially the subcategories of Credit Risk and Market Risk. This pattern is similar to that identified in studies conducted in other countries (Beretta & Bozzolan, 2004; Khlif & Hussainey, 2016; Linsley & Shrives, 2006; Oliveira et al., 2011), which point to higher levels of disclosure for financial risks. In the case of Market Risk, its three subcategories are among the ten most recurrent, reflecting the typical challenges of a developing economy such as Brazil.

4.2 Analysis of Disclosure by Institution

Next, the level of risk disclosure by financial institution is assessed, as presented in Table 10.

Table 10

Analysis of the Level of Disclosure by Financial Institutions

Institution	Segment	2017	2018	2019	2020	2021	2022	2023	Total	Rank
Santander	S1	7 11%	24 38%	18 28%	23 36%	23 36%	19 30%	18 28%	132 25%	1º
Banco do Brasil	S1	4 6%	21 33%	24 38%	24 38%	24 38%	16 25%	16 25%	129 25%	2º
Banrisul	S2	20 31%	20 31%	20 31%	16 25%	16 25%	16 25%	2 3%	110 24%	3º
Bradesco	S1	13 20%	13 20%	17 27%	16 25%	16 25%	14 22%	14 22%	103 20%	4º
Itaú	S1	15 23%	15 23%	15 23%	15 23%	11 17%	11 17%	11 17%	93 18%	5º
Safra	S2	14 22%	14 22%	14 22%	14 22%	13 20%	13 20%	11 17%	93 18%	6º
Citibank	S2	13 20%	13 20%	13 20%	13 20%	13 20%	11 17%	11 17%	87 17%	7º
BNDES	S2	14 22%	13 20%	12 19%	11 17%	11 17%	11 17%	11 17%	83 16%	8º
Banco do Nordeste	S2	11 17%	11 17%	11 17%	11 17%	10 16%	10 16%	9 14%	73 14%	9º
Votorantim	S2	6 9%	6 9%	6 9%	6 9%	6 9%	6 9%	6 9%	42 8%	10º
BTG Pactual	S1	6 9%	4 6%	4 6%	4 6%	4 6%	4 6%	4 6%	30 6%	11º
Caixa	S1	0 0%	5 8%	5 8%	0 0%	0 0%	0 0%	0 0%	10 2%	12º
Total		**123** **16%**	**159** **21%**	**159** **21%**	**153** **20%**	**147** **19%**	**131** **17%**	**113** **15%**	**985** **18%**	

Source: *Research data.*

Just as heterogeneity was observed in the distribution of disclosure across risk categories, it was also present across institutions. Some institutions reach approximately a 25% level of disclosure, while others exhibit less than 10%. Although there is no requirement for full disclosure of all information, this discrepancy reveals differing perceptions regarding the relevance of the topic. This highlights the need for greater reflection by institutions on their transparency and disclosure practices, with a view to enhancing their reputation and the quality of information provided to stakeholders.

Although some institutions exhibit lower levels of disclosure compared to others, they still provide information. However, in this research, tables without explanatory text were disregarded, as were purely theoretical contents with no link to the institutional context, except for definitions. Thus, it is observed that there is disclosure, but with low informational quality due to the lack of contextualization.

Finally, Table 11 presents the results disaggregated by segment (S1 and S2), as defined by the regulator.

Table 11

Analysis of the Level of Disclosure by Segments Defined by the CMN

Segment	2017	2018	2019	2020	2021	2022	2023	Total
S1	45 12%	82 21%	83 22%	82 21%	78 20%	64 17%	63 16%	497 19%
S2	78	77	76	71	69	67	50	488

	20%	20%	20%	19%	18%	17%	13%	18%
Total	**123**	**159**	**159**	**153**	**147**	**131**	**113**	**985**
	16%	**21%**	**21%**	**20%**	**19%**	**17%**	**15%**	**18%**

Source: *Research data.*

The literature indicates that larger institutions tend to present higher-quality risk disclosure (Khlif & Hussainey, 2016; Linsley & Shrives, 2006; Oliveira et al., 2011). However, this pattern was not identified in the present study, as no material differences were observed between the segments analyzed. It should be noted, nevertheless, that the research is limited by its focus on only the largest institutions in the Brazilian market.

5 Final Considerations

This research aimed to map and analyze the level of disclosure of risk-related information reported in the Financial Statements of Financial Institutions operating in Brazil. To this end, a content analysis was applied based on a checklist constructed from risks identified in the literature and in regulatory standards, covering the period from 2017 to 2023.

The data analysis revealed that, from 2018 onward, risk disclosure levels increased – potentially driven by the initial adoption of Resolution No. 4,557/2017 (CMN, 2017b) – but later stabilized with a decline in subsequent years. These findings may assist regulatory bodies in assessing the impact of the standards and adjusting their focus or requirements accordingly.

Moreover, it was found that, as in prior studies, financial risks are disclosed more frequently than non-financial risks, and there is a greater use of qualitative information compared to quantitative data. However, many disclosures are theoretical in nature, lacking practical contextualization. Thus, even though the institution with the highest level of disclosure reached 25% of the total possible score, this reflects the risks it deems relevant – pursuant to CPC 00 (R2) (2019) – and does not necessarily constitute regulatory non-compliance.

The most frequently risks disclosed were Market Risk and Credit Risk, as also indicated by prior studies. This is consistent with the activities of financial institutions, since credit risk is central to the sector, while market risk reflects the challenges of operating in a developing economy.

In an institution-level analysis, a disparity in disclosure levels was observed. Although studies suggest that larger firms tend to present higher-quality risk disclosure, this pattern was not identified in the present research. This may be attributed to the study's limitation of considering only institutions classified as S1 and S2 (CMN, 2017a). Therefore, it is not possible to assert whether disclosure behavior differs among smaller institutions.

Currently, there is growing discussion regarding the disclosure of non-financial information by organizations, especially that related to corporate social responsibility and ESG factors. In this research, non-financial risks ranked among the least disclosed categories. Although it cannot be asserted that institutions do not monitor these risks, they do not yet appear to consider them sufficiently relevant for inclusion in their annual reports through notes to the financial statements. Continuous monitoring of these disclosures is recommended in order to observe potential changes as market demands and expectations evolve.

As a contribution to society, the results reveal the levels of informational transparency that institutions consider relevant to disclose, as well as the risk categories with the greatest potential impact on stakeholders' perceptions. For the institutions themselves, this represents an opportunity to enhance disclosure practices by giving greater prominence to other risk categories and strengthening their transparency and reputation vis-à-vis users.

The findings have practical-regulatory implications by informing banking sector regulators about the focus of risk disclosures in the notes to the FSs. In this way, such bodies may wish to include or adjust the minimum requirements for banking risk disclosure. Likewise, the checklist (Table 2) was constructed based on national and international regulatory standards, the related literature, and the authors' experience using a structured, replicable, and validated methodology (i.e., content analysis). The checklist can be used by researchers interested in banking risks, disclosure, transparency, and other related topics.

It should also be noted that this research is subject to a limitation, as it was based on the annual reports of financial institutions. Although these documents contain notes to the FSs on risks, they do not follow disclosure requirements as specific as those of the Integrated Risk Management Report required by the CMN. However, the very purpose of the study was to identify the risk aspects that institutions deem relevant enough to disclose voluntarily. Accordingly, the representativeness observed should be interpreted with caution, as they do not indicate regulatory non-compliance, but rather institutional perceptions of relevance for users.

As recommendations for future research, the following are indicated: (i) the inclusion of banks classified as S3, S4, and S5 in the analysis for comparative purposes with those classified as S1 and S2; (ii) the use of the checklist to measure banks' disclosure levels within a longer time window (e.g., 2017 to 2026), and subsequently employing it as a dependent variable in a panel data model in order to identify the determinants of banking risk disclosure levels. In particular, for each type (financial or non-financial) or subtype of risk (e.g., operational, credit, interest rate, etc.), a panel data regression model can be developed to obtain its specific determinants and generate more targeted findings; and (iii) qualitative assessments of banking risk disclosure are likewise encouraged in order to complement the findings of the present research.

Finally, future researchers may conduct interviews with professionals from the financial market and the banking sector (e.g., analysts) to inquire about the quality of banks' risk information. Likewise, the texts of the notes to the FSs may be subjected to other forms of thematic classification (e.g., sentiment analysis), combining them with statistical techniques (e.g., correspondence analysis) to examine associations among variables.

References

Altman, E. I., & Saunders, A. (1997). Credit risk measurement: Developments over the last 20 years. *Journal of Banking & Finance*, *22*(11–12), 1721–1742. https://doi.org/10.1016/S0378-4266(97)00036-8

Alves, C. A. de M., & Cherobim, A. P. M. S. (2009). Análise do nível de divulgação do risco operacional segundo recomendações do comitê da Basileia: estudo em bancos do país e do exterior. *RAM – Revista de Administração Mackenzie*, *10*(2), 57-86. https://doi.org/10.1590/S1678-69712009000200004

Alves, M. T., & Graça, M. L. (2013). Divulgação de informação sobre o risco de mercado: Um caso de empresas do PSI20. *Revista Universo Contábil*, *9*(3), 163–184. https://doi.org/10.4270/ruc.20139

Barbosa, J. D. S., Dalava, A. O., De Oliveira, C. E., & Souza E Savi, E. M. D. (2016). Divulgação voluntária e qualidade da informação contábil: Estudo com empresas do segmento BOVESPA Mais. *Revista de Informação Contábil*, *v. 9*, 16–34. https://doi.org/10.34629/RIC.V9I3.16-34

Bardin, L. (2018). *Análise de Conteúdo*. Edições 70.

Basto, F. P., & Marques, A. (2024). Operational risk disclosure quality and national culture: Evidence from the E.U. Banking industry. *Journal of International Accounting, Auditing and Taxation*, *55*, 100614. https://doi.org/10.1016/j.intaccaudtax.2024.100614

Beretta, S., & Bozzolan, S. (2004). A framework for the analysis of firm risk communication. *The International Journal of Accounting*, *39*(3), 265–288. https://doi.org/10.1016/j.intacc.2004.06.006

Biondi, Y., & Zhou, F. (2019). Interbank Credit and the Money Manufacturing Process. A Systemic Perspective on Financial Stability. *Journal of Economic Interaction and Coordination*, *14*(3), 437–468. https://doi.org/10.1007/s11403-018-0230-y

Cardoso, V. R. D. S., Campos, L. A., Dantas, J. A., & Medeiros, O. R. D. (2019). Factors associated with the structural liquidity of banks in Brazil. *Revista Contabilidade & Finanças*, *30*(80), 252–267. https://doi.org/10.1590/1808-057x201806350

Carneiro, R. B. A. (2008). *Divulgação de informações sobre instrumentos financeiros e riscos bancários: Uma análise comparativa* (Dissertação de mestrado, Universidade de São Paulo). https://doi.org/10.11606/D.12.2009.tde-27032009-124526

Chernobai, A., Jorion, P., & Yu, F. (2011). The Determinants of Operational Risk in U.S. Financial Institutions. *Journal of Financial and Quantitative Analysis*, *46*(6), 1683–1725. https://doi.org/10.1017/S0022109011000500

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society*, *33*(4–5), 303–327. https://doi.org/10.1016/j.aos.2007.05.003

CMN. (2017a). *Resolução CMN n° 4.553 de 30/1/2017*. Conselho Monetário Nacional. https://normativos.bcb.gov.br/Lists/Normativos/Attachments/50335/Res_4553_v2_L.pdf

CMN. (2017b). *Resolução CMN n° 4.557 de 23/2/2017*. Conselho Monetário Nacional. https://normativos.bcb.gov.br/Lists/Normativos/Attachments/50344/Res_4557_v13_P.pdf

CMN. (2017c). *Resolução CMN n° 4.606 de 19/10/2017*. Conselho Monetário Nacional. https://normativos.bcb.gov.br/Lists/Normativos/Attachments/50454/Res_4606_v5_P.pdf

Coombs, W. T. (2007). Protecting Organization Reputations During a Crisis: The Development and Application of Situational Crisis Communication Theory. *Corporate Reputation Review*, *10*(3), 163–176. https://doi.org/10.1057/palgrave.crr.1550049

CPC 00 (R2), No. Estrutura Conceitual para Relatório Financeiro (2019). https://www.cpc.org.br/CPC/Documentos-Emitidos/Pronunciamentos/Pronunciamento?Id=80

Dantas, J. A., Rodrigues, F. F., Rodrigues, J. M., & Capelletto, L. R. (2010). Determinantes do grau de evidenciação de risco de crédito pelos bancos brasileiros. *Revista Contabilidade & Finanças*, *21*(52), 1-27. https://doi.org/10.1590/S1519-70772010000100002

Diamond, D. W., & Rajan, R. G. (2001). Liquidity Risk, Liquidity Creation, and Financial Fragility: A Theory of Banking. *Journal of Political Economy*, *109*(2), 287–327. https://doi.org/10.1086/319552

Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, Liquidity, and the Cost of Capital. *The Journal of Finance*, *46*(4), 1325–1359. https://doi.org/10.1111/j.1540-6261.1991.tb04620.x

Drehmann, M., Sorensen, S., & Stringa, M. (2010). The integrated impact of credit and interest rate risk on banks: A dynamic framework and stress testing application. *Journal of Banking & Finance*, *34*(4), 713–729. https://doi.org/10.1016/j.jbankfin.2009.06.009

Eccles, R. G., & Klimenko, S. (2019). The Investor Revolution. *Harvard Business Review*, *97*, 106–116.

Elshandidy, T., Fraser, I., & Hussainey, K. (2013). Aggregated, voluntary, and mandatory risk disclosure incentives: Evidence from UK FTSE all-share companies. *International Review of Financial Analysis*, *30*, 320–333. https://doi.org/10.1016/j.irfa.2013.07.010

Ferreira, B. L., & Lustosa, P. R. B. (2012). O caso do Banco Panamericano sob o ponto de vista da ética. *Revista Ambiente Contábil*, *4*(1), 17–35.

Giner, B., Allini, A., & Zampella, A. (2020). The Value Relevance of Risk Disclosure: An Analysis of the Banking Sector. *Accounting in Europe*, *17*(2), 129–157. https://doi.org/10.1080/17449480.2020.1730921

Gontarek, W., & Bender, R. (2019). Examining risk governance practices in global financial institutions: The adoption of risk appetite statements. *Journal of Banking Regulation*, *20*(1), 74–85. https://doi.org/10.1057/s41261-018-0067-2

Gray, R. (2006). Social, environmental and sustainability reporting and organisational value creation?: Whose value? Whose creation? *Accounting, Auditing & Accountability Journal*, *19*(6), 793–819. https://doi.org/10.1108/09513570610709872

Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, *59*, 5–21. https://doi.org/10.1016/j.jclepro.2013.07.005

Hassan, O., & Marston, C. L. (2010). Disclosure Measurement in the Empirical Accounting Literature—A Review Article. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1640598

Haveroth, J., Rohenkohl, L. B., Silva, M. Z. da, & Rodrigues Junior, M. M. (2018). Perspectivas de gestão de risco: Disclosure de informações sob a lógica fuzzy. *Revista de Contabilidade do Mestrado em Ciências Contábeis da UERJ*, *23*, 76–91.

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, *31*(1–3), 405–440. https://doi.org/10.1016/S0165-4101(01)00018-0

Hooi, G. (2007). The Effects of Culture on International Banking Disclosures. *Asia-Pacific Journal of Accounting & Economics*, *14*(1), 7–25. https://doi.org/10.1080/16081625.2007.9720785

Imbierowicz, B., & Rauch, C. (2014). The relationship between liquidity risk and credit risk in banks. *Journal of Banking & Finance*, *40*, 242–256. https://doi.org/10.1016/j.jbankfin.2013.11.030

Khan, M., Serafeim, G., & Yoon, A. (2016). Corporate Sustainability: First Evidence on Materiality. *The Accounting Review*, *91*(6), 1697–1724. https://doi.org/10.2308/accr-51383

Khlif, H., & Hussainey, K. (2016). The association between risk disclosure and firm characteristics: A meta-analysis. *Journal of Risk Research*, *19*(2), 181–211. https://doi.org/10.1080/13669877.2014.961514

Kolk, A. (2008). Sustainability, accountability and corporate governance: Exploring multinationals' reporting practices. *Business Strategy and the Environment*, *17*(1), 1–15. https://doi.org/10.1002/bse.511

Kolk, A. (2010). Trajectories of sustainability reporting by MNCs. *Journal of World Business*, *45*(4), 367–374. https://doi.org/10.1016/j.jwb.2009.08.001

Korontai, J. N., & Fonseca, M. W. D. (2020). Governança corporativa dos bancos e sua relação com indicadores de desempenho e risco. *Enfoque: Reflexão Contábil*, *39*(3), 151–168. https://doi.org/10.4025/enfoque.v39i3.47403

Leite, I. T., Nunes, R. V., Assis, C. W. C., Adriano, N. A., & Fonseca, R. C. (2016). Análise comportamental da evidenciação de riscos corporativos nos relatórios de sustentabilidade de empresas brasileiras do setor bancário durante o período de 2010 a 2012. *RACEF – Revista de Administração, Contabilidade e Economia da Fundace*, *7*(2), 108–129. https://doi.org/10.13059/racef.v7i2.376

Lemos, K. C. D. S., Miranda, G. J., & Marques, A. V. C. (2024). Disclosure em Notas Explicativas: Uma Revisão Sistemática. *Sociedade, Contabilidade e Gestão*, *18*(2). https://doi.org/10.21446/scg_ufrj.v18i2.58113

Leuz, C., & Wysocki, P. D. (2016). The Economics of Disclosure and Financial Reporting Regulation: Evidence and Suggestions for Future Research. *Journal of Accounting Research*, *54*(2), 525–622. https://doi.org/10.1111/1475-679X.12115

Linsley, P. M., & Shrives, P. J. (2006). Risk reporting: A study of risk disclosures in the annual reports of UK companies. *The British Accounting Review*, *38*(4), 387–404. https://doi.org/10.1016/j.bar.2006.05.002

Muller, S. H., Silva, M. Z. da, & Vogt, M. (2020). Gestão de risco em instituições financeiras: Um estudo sob a ótica da teoria contingencial. *Revista Eletrônica Científica do CRA-PR*, *7*(1), 64–80.

Nahar, S., & Jahan, M. A. (2021). Do Risk Disclosures Matter for Bank Performance? A Moderating Effect of Risk Committee. *Accounting in Europe*, *18*(3), 378–406. https://doi.org/10.1080/17449480.2021.1942095

Oliveira, J., Rodrigues, L., & Craig, R. (2011). Voluntary risk reporting to enhance institutional and organizational legitimacy: Evidence from Portuguese banks. *Journal of Financial Regulation and Compliance*, *19*(3), 271–289. https://doi.org/10.1108/13581981111147892

Passoni, M. D., Correia, G. B., & Borçato, E. C. (2018). Características qualitativas das demonstrações contábeis à luz da nova estrutura conceitual: Um estudo de caso. *Revista de Ciências Empresariais da UNIPAR*, *19*(2). https://doi.org/10.25110/receu.v19i2.6722

Rufino, M. A., & Monte, P. A. D. (2015). Fatores que Explicam a Divulgação Voluntária das 100 Empresas com Ações Mais Negociadas na BM&FBOVESPA. *Sociedade, Contabilidade e Gestão*, *9*(3). https://doi.org/10.21446/scg_ufrj.v9i3.13332

Sanusi, Z. M., Rameli, M. N. F., & Isa, Y. M. (2015). Fraud Schemes in the Banking Institutions: Prevention Measures to Avoid Severe Financial Loss. *Procedia Economics and Finance*, *28*, 107–113. https://doi.org/10.1016/S2212-5671(15)01088-6

Serri, M., Caldarelli, G., & Cimini, G. (2017). How the interbank market becomes systemically dangerous: An agent-based network model of financial distress propagation. *The Journal of Network Theory in Finance*, *3*(1). https://doi.org/10.21314/JNTF.2017.025

Tunico, F. R. L., & Rodrigues, R. N. (2016). Disclosure sobre risco de crédito pelos bancos públicos no Brasil e sua aderência ao Acordo da Basiléia. *Revista de Administração, Governança e Contabilidade (RAGC)*, *4*(11), 108–123. https://www.revistas.fucamp.edu.br/index.php/ragc/article/view/735

Vilela, C. H., Souza Neto, J., Ramos, K. H. C., & Orlandi, T. R. C. (2023). Uma estrutura de apetite a risco para instituições financeiras. *Revista Gestão & Tecnologia*, *23*(4), 123–153. https://doi.org/10.20397/2177-6652/2023.v23i4.2352

Wang, X., Li, Y., & Xiao, M. (2017). Do risk disclosures in annual reports improve analyst forecast accuracy? *China Journal of Accounting Studies*, *5*(4), 527–546. https://doi.org/10.1080/21697213.2017.1438288

Weber, V., & Müßig, A. (2022). The Effect of Business Strategy on Risk Disclosure. *Accounting in Europe*, *19*(1), 190–225. https://doi.org/10.1080/17449480.2021.2018473