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Governance and Insolvency Risk in Banking: A Systematic Literature Review

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ABSTRACT

Amidst the rapidly evolving banking sector and the consequential increase in insolvency risk, exploring extensive governance mechanisms to ensure financial stability is critical. This study conducts a systematic literature review to examine the role of Corporate Governance (CG), Shariah Governance (SG), and Institutional Governance (IG) in managing insolvency risk in banking. The review analyzed 55 relevant articles from Scopus and Web of Science (WoS) databases from 2012 to 2022 using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. Thematic analysis produced three main themes: governance, bank-specific and macroeconomic factors, further divided into 12 subthemes. The weight analysis indicates that none of the governance mechanisms can be considered the best predictor. Well-utilized factors include board size, duality, independence, audit committee size, and public, government, foreign, and institutional ownership. Promising variables for effective risk management include CRO independence, risk and audit committee meetings, audit committee experience, Shariah Board size, and adherence to the rule of law. Moreover, the review sheds light on the areas that require further investigation and suggest recommendations for future studies. The findings revealed that governance has diverse dimensions and varying effects on risk management strategies, enriching the theoretical understanding of its role in banking. It highlights the critical need for a more integrated approach to governance in banking risk strategies, considering the unique demands of CG, SG, and IG to mitigate insolvency risk effectively. This study offers insights to banks and regulatory bodies on implementing effective governance structures for sound risk management practices towards strengthening the banking system's resilience.

Keywords: Corporate governance; institutional governance; shariah governance; insolvency risk; systematic literature review; risk management

INTRODUCTION

Recent crises related to governance have highlighted the urgent need for a robust governance framework to manage risk in the banking sector. High-profile corporate scandals such as those involving WorldCom, Adelphia and Enron in the early 21st century and the collapse of Lehman Brothers during the 2008/2009 Global Financial Crisis brought attention to the criticality of robust governance. The subsequent 2010/2011 European sovereign debt crisis and the recent COVID-19 pandemic created new governance dilemmas, particularly highlighting the increased liquidity risk in the banking sector. It is evidenced by a surge in deposit withdrawals (Elnahass et al. 2022) and heightened loan defaults (El-Chaarani et al. 2022). In response to this multifaceted crisis, global governments and financial authorities have taken drastic measures to protect individual banks and the entire financial infrastructure. This sequence of events has made it clear that the need for rigorous governance research in banking is imperative.

Banks play a foundational role in supporting economic stability. Their characteristics, including opacity, high leverage, strict regulation and government intervention, make them significant intermediaries. Banks direct funds from depositors and investors to sectors of the economy that need capital. The banking sector is so crucial that its potential insolvency poses risks that could affect the broader economy. Even the collapse of one bank can trigger a domino effect, destabilizing other financial institutions. The interdependent nature of the financial system highlights the need for good governance. The banking sector's stability is vital for economic growth, employment and public confidence. Global policymakers, such as the Basel Committee on Banking Supervision (BCBS), the Organization for Economic Co-operation and Development (OECD), and the Financial Stability Board (FSB), have intensified risk management frameworks to ensure best governance practices in banking (BCBS 2015; FSB 2013; García-Ramos & Díaz Díaz 2020; OECD 2019).

Governance in banks comprises a combination of internal and external mechanisms. Internal governance refers to the internal mechanisms through which a bank governs its operations, whereas external governance pertains to the regulatory and supervisory frameworks established by the national authorities to oversee and monitor banks. Corporate governance (CG) exemplifies internal governance mechanisms that regulate the relationships between stakeholders within a bank. Institutional governance (IG), represented by bank regulations and supervision (BRS) and institutional quality (IQ), constitutes external governance mechanisms. BRS comprises capital regulation, asset restrictions, supervisory power, and private monitoring. IQ refers to the World Bank Governance Indicators: the rule of law, government effectiveness, anti-corruption measures, political stability, regulatory quality, and mechanisms for voice and accountability. In contrast, Shariah governance (SG) is specific to Islamic banks, ensuring that all activities adhere to Shariah precepts. It encompasses internal and external governance mechanisms, i.e. Shariah Supervisory Board (SSB) at the individual bank level and a Shariah Advisory Council (SAC) at the central bank level.

Governance aims to address conflicts of interest that arise due to managerial incentives. Managers may prioritize their benefits, but it is the board of directors' responsibility to ensure that the management decisions align with the interests of the shareholders and practice prudent risk management (Fama & Jensen 1983; Srivastav & Hagendorff 2016). External governance through regulators plays a crucial role in reinforcing this. They ensure board independence (Li & Song 2013), restrict managerial excesses (De Vita & Luo 2018), and counterbalance potential hazards like the "too-big-to-fail" doctrine (Chava & Purnanandam 2010). Given banks' systemic importance and vulnerability to systemic risks, rigorous oversight is vital for maintaining trust in the banking system (Demsetz & Lehn 1985). It is especially pertinent for Islamic banks, whose distinct business models and adherence to Shariah principles demand meticulous governance. Any deviation from Shariah principles that results in non-compliant income can imperil their standing and solvency (Srairi 2019).

The review suggests that most studies have examined three fundamental governance mechanisms separately without considering their interconnectedness. However, the interrelatedness of these governance mechanisms is crucial for maintaining the stability and growth of banks (Haque 2019). Notably, research on CG is abundant in both developed (D'Amato & Gallo 2019; Ibáñez-Hernández et al. 2019; Anginer et al. 2018) and developing countries (Zheng et al. 2017; Grassa 2016). While some studies have explored IG (Bley et al. 2019; Bermpei et al. 2018), emerging works have started connecting CG with both IG (Gulamhussen et al. 2020; Kim 2019) and SG (AlAbbad et al. 2019; Lassoued 2018). However, as various institutional and national factors influence these findings, they remain fragmented without a comprehensive systematic literature review. This gap has also been highlighted by Farah et al. (2021) in their focus on Middle Eastern and North African banks.

This study aims to enhance the understanding of governance mechanisms by conducting a Systematic Literature Review (SLR). The review focuses on four main aspects: 1) exploring the relationship between governance mechanisms (CG, IG, SG) and insolvency risk (IR), 2) considering worldwide contexts, 3) performing a thorough thematic analysis to identify patterns, relationships, and nuances, 4) conducting weight analysis to identify salient governance mechanisms, and 5) identifying research gaps and providing directions for future research. The SLR is a methodical approach to reviewing existing literature on a specific topic, beginning with a comprehensive search and progressing through screening, selecting, and critically appraising relevant scholarly outputs. By using the SLR, this study aims to provide a comprehensive understanding of the current knowledge and highlight areas that require further research. The study bridges the gap between existing knowledge and areas that require exploration by providing a clear roadmap for scholars and experts in governance mechanisms and IR.

The main research question of the current study is: How does multi-layered governance affect banking IR? This study aims to evaluate the literature on internal and external governance mechanisms and analyze their impacts on IR in the banking sector. It is vital to assess how these governance strategies interact with each other, especially considering the unique characteristics of each bank and country. The findings will provide theoretical and empirical insights, paving the way for future research on governance and risk. In practical terms, this review may lead to developing a robust risk governance paradigm that harmonizes governance with risk management techniques, leading to banking sector resilience. Also, it can provide valuable insights to regulators, guiding a more informed regulatory and supervisory approach by helping them to understand the relationship between risk-taking in banks and the effectiveness of governance.

The structure of this study is as follows. The upcoming section describes the methodology used, which outlines the steps taken to conduct the Systematic Literature Review (SLR). After presenting the results, a thematic analysis is provided to interpret the key findings. The discussion section evaluates these findings in the broader context of the existing literature, followed by suggested directions for future research. Finally, the study concludes by summarizing its primary insights and contributions.

METHODOLOGY

The study conducted a systematic literature review to examine the association between governance and risk in banking. It utilized the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method developed by Pahlevan-Sharif et al. (2019). This section details the PRISMA method, data sources, eligibility criteria, systematic review process, and data abstraction and analysis.

PRISMA

PRISMA is a crucial tool for analyzing literature trends, which helps researchers understand the current state of knowledge on a particular topic (Abelha et al. 2020; Beller et al. 2013; Sohrabi et al. 2021). It systematically guides researchers through identifying, selecting, appraising, and synthesizing relevant studies (Shaffril et al. 2020). It helps them refine and select the most relevant articles (Page et al. 2021). Moreover, PRISMA assists researchers in identifying research questions and criteria for systematic reviews, enabling them to efficiently examine an extensive database of scientific literature (Sierra-Correa & Kintz 2015).

DATA SOURCES

The retrieved articles were sourced from two journal databases: Scopus and Web of Science (WoS). Scopus is a collection of peer-reviewed literature databases with more than 22,800 journals from 5,000 publishers spanning various fields,

including environmental sciences and social science. On the other hand, WoS has over 33,000 journals covering more than 256 interdisciplinary subject areas. Initially created by the Institute for Scientific Information (ISI), WoS is recently managed by Clarivate Analytics and has over 100 years of comprehensive back file and citation data.

ELIGIBILITY AND EXCLUSION CRITERIA

The review employed various inclusion and exclusion criteria to determine relevant articles, as presented in Table 1. The criteria focused on the type of literature, language, and timeline. Publications such as systematic review articles, review articles, meta-analysis articles, book series, books, chapters in books, and conference proceedings were excluded, as were articles from journals with empirical data. The review also focused on English publications and excluded non-English ones to avoid translation difficulties and ensure the manuscript was easily understandable. Since it is implausible that researchers could read all published articles, Okoli (2015) advised setting a time limit on the study period. Therefore, the current study only includes articles published between 2012 and 2022, which was sufficient to capture the evolution of the research topic. The choice of 2012 as the starting year was because most countries developed and implemented governance after 2009, and it took 1-3 years for the implementations to be practical.

TABLE 1. The inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Literature type	Article journals (Empirical data)	Systematic review articles, review articles, meta-analyses articles, book series, book, chapter in the book, conference proceedings
Language	English	Non-English
Timeline	2012 - 2022	<2011

SYSTEMATIC REVIEW PROCESS

The systematic review process consists of four stages: identification, screening, eligibility, and quality appraisal, as shown in Figure 1. The first stage involves determining the search keywords for identifying relevant articles in the Scopus and WoS databases (see Table 2). These keywords were developed using previous literature, thesaurus entries, and synonyms related to governance, insolvency risk, and banks. The search query produced 1,076 articles, with 412 from Scopus and 764 from WoS.

Next, 531 articles were removed in the screening stage based on inclusion and exclusion criteria, including 20 duplicated articles. The eligibility process required manual inspection by reading the titles and abstracts of the remaining 545 articles. This process removed 455 articles because they did not focus on governance-insolvency risk relationship, were not in the banking context, and did not provide empirical findings. During the quality appraisal stage, 80 articles were assessed for inclusion in the review. Two experts evaluated the quality of these articles based on four criteria: credibility, dependability, confirmability, and transferability (Jafri et al. 2024). Articles meeting all four criteria were deemed high quality, while those meeting more than 50% criteria were considered moderate. The experts removed 25 poor-quality articles during this process, leaving only 55 moderate-to-high-quality articles eligible for review with mutual agreement from all authors.

TABLE 2. The search string

Database	Search string
Scopus	TITLE-ABS-KEY=(("governance" OR "corporate governance" OR "institutional governance" OR "s*aria*governance" OR "CG" OR "governance Index*" OR "corporate governance index*" OR "s*aria* governance index*" OR "CG index*" OR "governance indices" OR "corporate governance indices" OR "s*aria* governance indices" OR "CG indices*") AND ("insolvency*" OR " insolvency risk*" OR " solvency*" OR "z* score" OR "z*index*" OR "bankruptcy*") AND ("bank*" OR "Islamic bank*"))
Web of science	TS= (("governance" OR "corporate governance" OR "institutional governance" OR "s*aria*governance" OR "CG" OR "governance Index*" OR "corporate governance index*" OR "s*aria* governance index*" OR "CG index*" OR "governance indices" OR "corporate governance indices" OR "s*aria* governance indices" OR "CG indices*") AND ("insolvency*" OR " insolvency risk*" OR " solvency*" OR "z* score" OR "z*index*" OR "bankruptcy*") AND ("bank*" OR "Islamic bank*"))

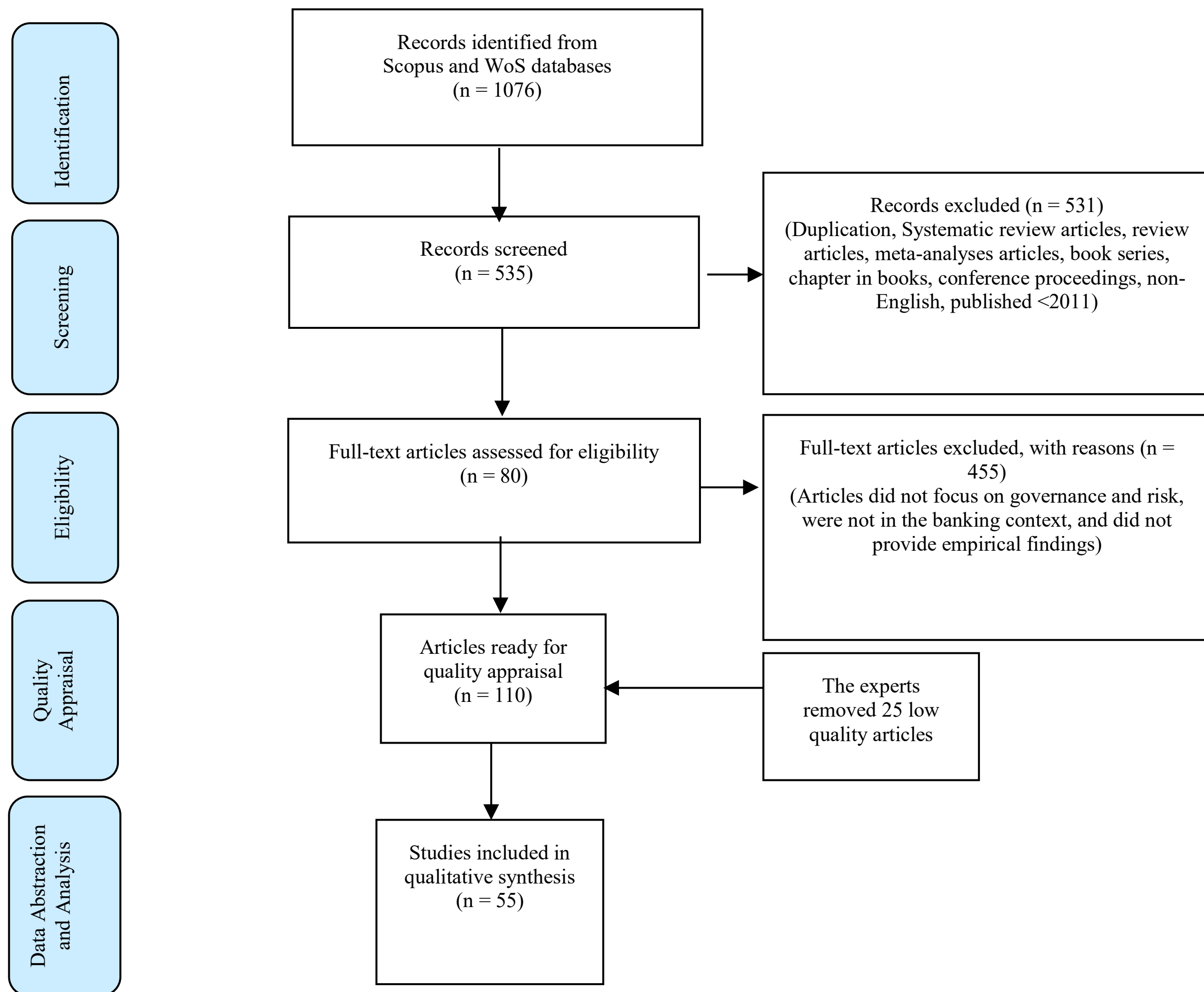

FIGURE 1. The study's diagram flow.

RESULTS

JOURNAL OUTLETS

The review analyzed 55 articles published between 2012 and 2022. The study showed that articles increased from 2014 to 2016, then decreased in 2017. Another increase was observed between 2017 and 2019, with a sharp rise in 2020. However, the number of articles slightly decreased from 2021 to 2022. It is important to note that articles from 2012 were removed from the analysis since they were unrelated to banks or governance. Figure 2 presents the number of publications. It is worth mentioning that in 2014, the OECD introduced a reform to encourage transparency and benchmarking of CG practices globally. In 2015, G20 and OECD jointly issued updated CG principles, emphasizing long-term investment, economic growth, and stakeholder engagement. The latest reform was conducted in 2019 to provide guidelines for anti-corruption and integrity in state-owned enterprises. These reforms may have impacted the number of articles on CG and related governance practices (García-Ramos & Díaz Díaz 2020; OECD 2019b).

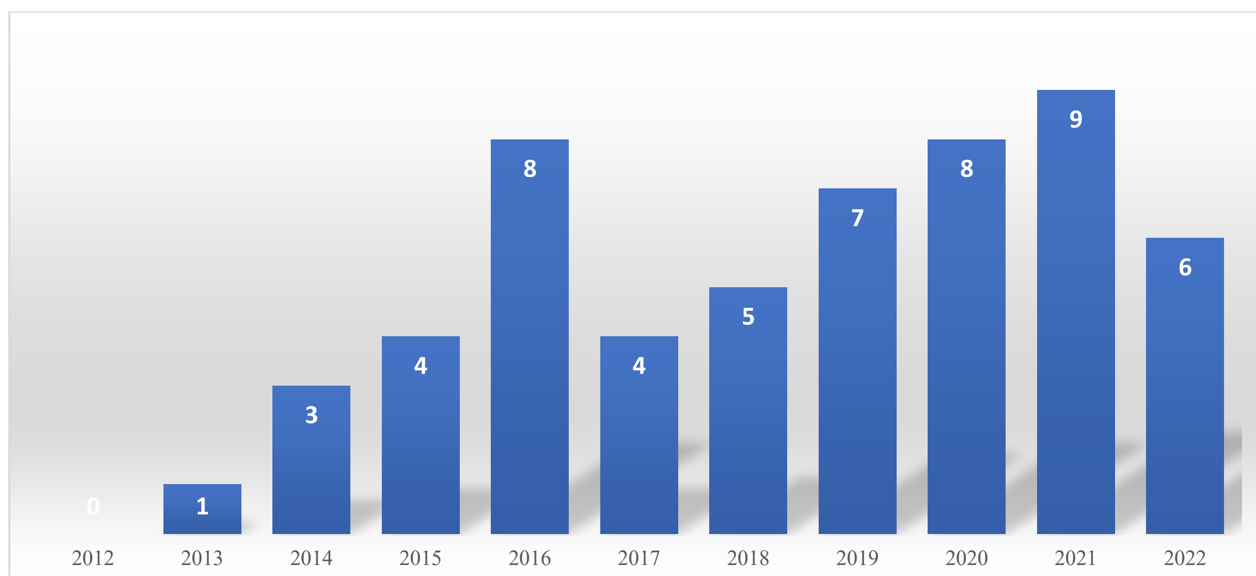

FIGURE 2. Number of publications

The reviewed articles were extracted from two databases, namely Scopus and Web of Science (WoS). WoS contains a total of 32 articles, out of which 27 are in quartile 1 (Q1) and five are in Q2. On the other hand, Scopus has 23 articles. Table 3 shows the list of articles published in WoS and Scopus Index.

TABLE 3. Journals

Journal	Publisher	Authors
	Web of Science (WOS) Database	
Corporate Governance Bingley (Q1)	Emerald	D'Amato & Gallo (2019), Khalil & Ben Slimene (2021)
Finance Research Letter (Q1)	Elsevier	Brogi & Lagasio (2022)
Financial Innovation (Q1)	Springer	Kashif et al. (2016)
International Review of Financial Analysis (Q1)	Elsevier	Bley et al. (2019), Bermpei et al. (2018),
Journal of Corporate Finance (Q1)	Elsevier	Mohsni & Otchere (2014)
Journal of Financial Stability (Q1)	Elsevier	Mollah & Liljeblom (2016), Minhat & Abdullah (2016)
Journal of International Financial Management & Accounting Q1)	John Wiley & Sons Inc	Gulamhussen et al. (2020)
Journal of International Financial Markets, Institutions and Money (Q1)	Elsevier	Samet et al. (2018), Abid et al. (2021), Acheampong & Elsh & idy (2021)
Nonprofit Management and Leadership (Q1)	John Wiley & Sons Inc	Pina et al. (2016)
Research in International Business and Finance (Q1)	Elsevier	Zheng et al. (2017), Ashraf et al. 2016)
Pacific-Basin Finance Journal (Q1)	Elsevier	Cheng et al. (2016)
Heliyon (Q1)	Elsevier	Nguyen (2021), Bakhouche et al. (2022)
Review of Finance (Q1)	Oxford University Press	Abedifar et al. (2014)
Review of Managerial Science (Q1)	Springer	Sallemi et al. (2022)
Journal of Business Research (Q1)	Elsevier	Abdelbadie & Salama (2019), García-Sánchez et al. (2017)
Finance Research Letters (Q1)	Elsevier	Bai et al. (2020)
Pacific Basin Finance Journal (Q1)	Elsevier	Gupta & Kashiramka (2020)
The European Journal of Finance (Q1)	Routledge	Trinh et al. (2020)
Academcy of Management Journal (Q1)	Academy of Management	Stephenson (2021)
Economics of Transition and Institutional Change (Q2)	John Wiley & Sons Inc.	Lapteacru (2019)
The North American Journal of Economics and Finance (Q2)	Elsevier	Ali et al. (2021)
Applied Economics (Q2)	John Wiley & Sons Inc.	López-Andión et al. (2015)
Sage Open (Q2)	SAGE Publications Inc.	Mbanyele (2020)
Borsa Istanbul Review (Q2)	Elsevier	Albaity et al. (2021)
	Scopus Database	
European Journal of Management and Business Economics	Emerald	Otero et al. (2020)
International Journal of Islamic and Middle Eastern Finance and Management	Emerald	AlAbbad et al. (2019)
Review of Quantitative Finance and Accounting	Springer	Guo et al. (2015), Elnahass et al. (2022)
Management Science Letters*	Growing science	Dang (2019)
Problems and Perspectives in Management	Business Perspective	Iramani et al. (2018)
International Journal of Managerial and Financial Accounting,	Inderscience Publishers	Ayadi & Boujèlbène (2014)
Journal of Financial Regulation and Compliance	Emerald	Kuranchie-Pong et al. (2016)
Journal of Islamic Accounting and Business Research	Emerald	Grassa (2016), Khalil (2021)
Managerial Finance	Emerald	ElBannan (2015), Ben Zeineb & Mensi (2018), Lassoued (2018)

Journal of Business and Retail Management Research	The Academy of Business and Retail Management (ABRM)	Alshubiri (2017)
Journal of Risk and Financial Management	MDPI	Ashraf et al. (2017)
Review Economic Perspective	De Gruyter Open Ltd.	Rachdi et al. (2013)
Polish Journal of Management Studies	Czestochowa University of Technology	Hac (2022)
International Journal of Business and Society	Universiti Malaysia Sarawak	Hassan et al. (2021)
Portuguese Economic Journal	Springer	Karkowska & Acedański (2020)
Cogent Economics & Finance	Taylor and Frances	Kanoujiya et al. (2022)
Research in World Economy	Sciedu Press	Kamran et al. (2019)
Corporate Ownership and Control	Virtus Interpress	Moldasheva (2015)
The Journal of Asian Finance, Economics and Business	Korea Science	Moudud-Ul-Huq et al. (2020)

Notes: 1) Quartile (Q) indicates the ranking of the journal in four quartiles: Q1, Q2, Q3, and Q4, based on SJR metrics. Q1 is the top 25% SSCI journal while Q2 is occupied by SSCI journals in the 25-50% in the field.
2) The journal discontinued in 2020. In 2019, it was Q2 based on Scopus.

GEOGRAPHIC FOCUS

Figure 3 indicates the distribution of articles based on the study context. 56% of the articles were cross-country studies, with the number of countries ranging from six (GCC) to a maximum of 134, with an average of 31. The remaining 44% of articles focused on a single country, including Tunisia, Egypt, Kazakhstan, Spain, the UK, China, Bangladesh, Indonesia, Vietnam, the US, Italy, Brazil, and India. Among cross-country studies, 21 were global; four were in MENA, four were in GCC, and two were in Europe.

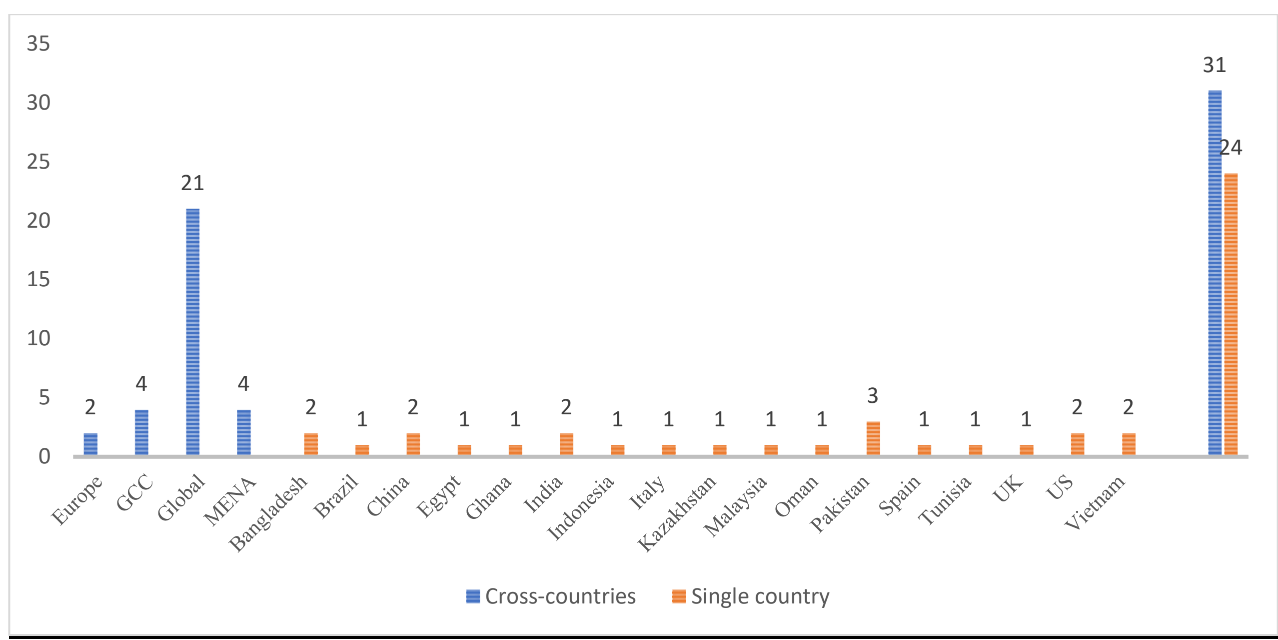

FIGURE 3. Context of study

GOVERNANCE RELATED THEORIES

The review indicates that Agency Theory was the most commonly used theoretical framework in 21 of 55 articles (38%). The remaining articles use different theories, such as Portfolio Theory (2%), Risk and Return Theory (3%), Openness Theory (2%), or a combination of theories, such as Agency and Resource-Dependent Theory (4%). Interestingly, almost half of the articles (49%) did not mention any theory in their discussion. The dominance of Agency Theory corresponds to its widespread use in explaining how CG affects bank risk and performance. Notably, 58% of these articles were published before the COVID-19 outbreak, while the remaining 42% examined the issue after the outbreak. Table 4 provides a summary of the theoretical framework used in each study.

TABLE 4. Governance theories applied in banking

Source	Objective	Theory	Governance Scope
	Pre-COVID19		
Rachdi et al. (2013)	To examine the effect of board characteristic on risk	Agency theory	CG
Abedifar et al. (2014)	To examine the risk and stability feature of Islamic banks.	Nil	SG
Mohsni & Otchere (2014)	To examine the risk-taking behaviour of privatized banks before and after privatization.	Nil	CG & IG
Ayadi & Boujèlbène (2014)	To examine the effect of capital regulation on performance and risk taking of European banks.	Nil	IG

ElBannan (2015)	To examine the effect of bank consolidation and foreign ownership on bank risk taking.	Nil	IG
Guo et al. (2015)	To examine how executive compensation is related to a banks' incentives to take excessive risk.	Agency & Contracting theory	CG
López-Andión et al. (2015)	To examine why the rapid growth of securitization was rarely seen as a threat to financial stability.	Nil	IG
Moldasheva (2015)	To examine the influence of CG practices on leverage and financial performance of firms in financial system of Kazakhstan	Agency theory	CG
Kuranchie-Pong et al. (2016)	To examine the relationship between disclosure and risk taking of banks.	Nil	CG
Kashif et al. (2016)	To examine bank loan growth and risk-taking behaviour of the banks	Nil	IG
Grassa (2016)	To examine the effect of ownership concentration and the deposits structure on the link between income structure and IR.	Nil	CG
Pina et al. (2016)	To examine the political influence on the performance of non-profit banks in Spain.	Nil	CG
Mollah & Liljeblom (2016)	To examine the effect of powerful CEO on bank performance.	Agency theory	CG & IG
Minhat & Abdullah (2016)	To examine the relationship between use of stock option and bank risk.	Nil	CG
Cheng et al. (2016)	To investigate the effects of FSIs on bank risks	Nil	CG
Ashraf et al. (2016)	To investigates the role that ownership structure and diversification of income plays in the financial stability of banks from the GCC region	Nil	CG
Zheng et al. (2017)	To examine the bi-directional relationship between banks' capital regulation and risk-taking behavior concerning the impacts of ownership structure.	Agency theory	CG
Alshubiri (2017)	To explain the factors that have an effect on financial banking stability	Nil	IG
García-Sánchez et al. (2017)	To analyses the relationship between the presence of financial experts on audit committees and the levels of IR in the banking sector.	Nil	CG & IG
Ashraf et al. (2017)	To examine the impact of trade openness on bank risk-taking behavior	The Openness theory	IG
Bermpei et al. (2018)	To examine the effect of IQ on the relationship between bank regulations and supervision on bank stability	Nil	IG
Samet et al. (2018)	To examine risk taking by public and private banks.	Agency theory	IG
Ben Zeineb & Mensi (2018)	To examine the effect of CG of GCC Islamic banks on efficiency and risk.	Agency theory	CG & SG
Lassoued (2018)	To examine the effect of CG on stability of banks	Agency theory	CG & SG
Iramani et al. (2018)	To examine the impact of Good CG practice on bank stability and performance.	Agency theory	CG
Kamran et al. (2019)	To examine the stability trends in commercial banks of Pakistan	Nil	IG
Dang (2019)	To examine how loan growth affects performance of banks, in the form of credit risk, bank profitability and bank solvency	Nil	CG
Abdelbadie & Salama (2019)	To examine the structure and implications of the professional connections among bank directors	Agency theory	CG & IG
Lapteacru (2019)	To examine the differential effects of the activity and funding strategies of foreign and state-owned banks on risk-taking	Risk theory	CG
AlAbbad et al. (2019)	To examine the effect of SSB characteristics on risk taking.	Portfolio theory	CG, SG, IG
Bley et al. (2019)	To examine auditor choice on banks risk taking.	Agency theory	IG
D'Amato & Gallo (2019)	To examine the relationship between bank institutional setting and risk taking.	Agency theory	CG
	Post-COVID19		
Gulamhussen et al. (2020)	To examine the effect of managerial ownership on market value, performance and risk.	Agency theory	CG
Karkowska & Acedański (2020)	To examine how board structure and quality affect risk incentives.	Nil	CG
Mbanyele (2020)	To examine the effect of busy director on bank risks.	Resource Dependence & Agency theory	CG
Moudud-Ul-Huq et al. (2020)	To examine the effect of ownership structure on bank diversification and risk-taking behavior	Nil	CG
Trinh et al. (2020)	To examine the impact of board busyness on the performance and financial stability of banks in a dual banking system.	Nil	CG
Gupta & Kashiramka (2020)	This study attempts to analyze the implications of LC for promoting the financial stability of banks.	Nil	CG
Bai et al. (2020)	This research examines the impact of expected government support on banks' risk-taking behaviour	Nil	CG
Otero et al. (2020)	To explore the relationship between CG and risk-taking behaviour of banks operating in the MENA.	Agency theory	CG & IG
Abid et al. (2021)	To examine the effect of risk committee and chief risk officers (CRO) on risk taking behaviour	Agency theory	CG
Nguyen (2021)	To examine the effect of audit committee and shariah committee on bank risk.	Agency theory	CG & SG
Albaity et al. (2021)	To examine the effect of trustworthiness and governance quality on banks' risk-taking behaviour.	Agency theory	IG

Stephenson (2021)	To examine the effect of CG on bank stability.	Nil	CG
Ali et al. (2021)	To investigate whether shareholder-friendliness of CG mechanisms is related to IR of financial institutions	Agency theory	CG
Khalil & Ben Slimene (2021)	To examine the BOD characteristics and their impacts on the financial soundness of Islamic banks	Agency theory	CG & IG
Hassan et al. (2021)	To analyze the financial stability of Islamic and conventional banks in Pakistan.	Nil	CG
Khalil (2021)	To examine the relationship between the BODs and SSB and assess its impact on the financial soundness of Islamic banks.	agency theory	CG
Acheampong & Elshandidy (2021)	This paper uses a supervised machine learning algorithm to extract relevant (soft) information from annual reports and examines whether such information determines credit risk	Nil	IG
Brogi & Lagasio (2022)	To examine the effect of CG and risk-taking behaviour.	Agency theory	CG
Sallemi et al. (2022)	To examine the relationship between CG and bank stability.	Agency theory	CG
Elnahass et al. (2022)	To examine the effect of terrorism on bank stability.	Risk and Return theory	CG & IG
Hac (2022)	To investigate the banking risk considered in Vietnam from the perspective of internal causes and government effects in the current period.	Nil	IG
Kanoujiya et al. (2022)	To examine the financial distress	Nil	IG
Bakhouche et al. (2022)	To examine the effect of institutional environment on bank stability.	Nil	CG

Notes: 1) Corporate Governance (CG) refers to “a set of relationships between a company’s management, its board, its shareholders and other stakeholders” (OECD 2019)

2) Shariah Governance (SG) is defined as “a set of institutional and organizational arrangements through which Islamic financial institutions (IFIs) ensure that there is effective independent oversight of Shariah compliance over the issuance of relevant Shariah pronouncements, dissemination of information and an internal Shariah compliance review (Alkali 2017).

3) Institutional Governance (IG) include bank regulations and supervision (BRS) and institutional quality (IQ). BRS comprises capital regulation, asset restrictions, supervisory power, and private monitoring (Barth et al. 2013). IQ refers to the World Bank Governance Indicators: the rule of law, government effectiveness, anti-corruption measures, political stability, regulatory quality, and mechanisms for voice and accountability (World Bank 2021).

RESEARCH METHOD

Previous studies utilized various data analysis techniques, as presented in Table 5. Ordinary least squares (OLS) were used in 25% of the studies, while 18% utilized GMM. Dynamic two-step system GMM with 2SLS or/and 3SLS was employed by 18%. Additionally, 9% of the studies employed fixed or random effects and 13% applied multi-regression. In 7% of the studies, OLS and GMM were used together, while fixed effect or random effect with GMM were used in another 7%.

TABLE 5. Data analysis techniques

Method	Source
Fixed effect or Random effect	Bai et al. (2020), Lassoued (2018), Nguyen (2021), Rachdi et al. (2013)
Multi regression	Abedifar et al. (2014), Ayadi & Boujèlbène (2014), Bermpei et al. (2018), Brogi & Lagasio (2022), Kuranchie-Pong et al. (2016), Pina et al. (2016), Samet et al. (2018)
OLS	Alshubiri (2017), Ashraf et al. (2017), Ashraf et al. (2016), Cheng et al. (2016), ElBannan (2015), Gulamhussen et al. (2020), Guo et al. (2015), Hac (2022), Iramani et al. (2018), Lapteacru (2019), Mbanyele ((2014), Moldasheva (2015), Otero et al. (2020)
GMM method	Abdelbadie & Salama (2019), Acheampong & Elsh&idy (2021), Albaity et al. (2021), Dang (2019), Elnahass et al. (2022), Gupta & Kashiramka (2020), López-&ión et al. (2015), Sallemi et al. (2022), Stephenson (2021) García-Sánchez et al. (2017)
Dynamic two-step system GMM (2SLS) or /and 3SLS	Abid et al. (2021), Bakhouche et al. (2022), D’Amato & Gallo (2019), Grassa (2016), Karkowska & Acedański (2020), Kashif et al. (2016), Mollah & Liljeblom (2016), Trinh et al. (2020), Zheng et al. (2017)
Fixed effects and/or random effect	Ali et al. (2021), Hassan et al. (2021), Kamran et al. (2019), Kanoujiya et al. (2022), Khalil & Ben Slimene (2021)
OLS and 2SLS	AlAbbad et al. (2019), Bley et al. (2019), Minhat & Abdullah (2016)
DEA, Stochastic frontier approach (SFA)	Ben Zeineb & Mensi (2018)
Panel corrected standard error (PCSE)	Khalil (2021)

The reviewed articles cover a data collection period from 1988 to 2020, which ranged from 1 to 18 years, with a mean of 8 years. The minimum number of banks included in the study is 6 (Alshubiri 2017), while the maximum is 6,816. The sources of data used were Bankscope (24%), Worldbank (14%), Datastream (4%), Bloomberg (4%), and Thompson Reuters (5%). Local databases were sourced from governmental sources (9%) and annual reports (24%) (as shown in Figure 4).

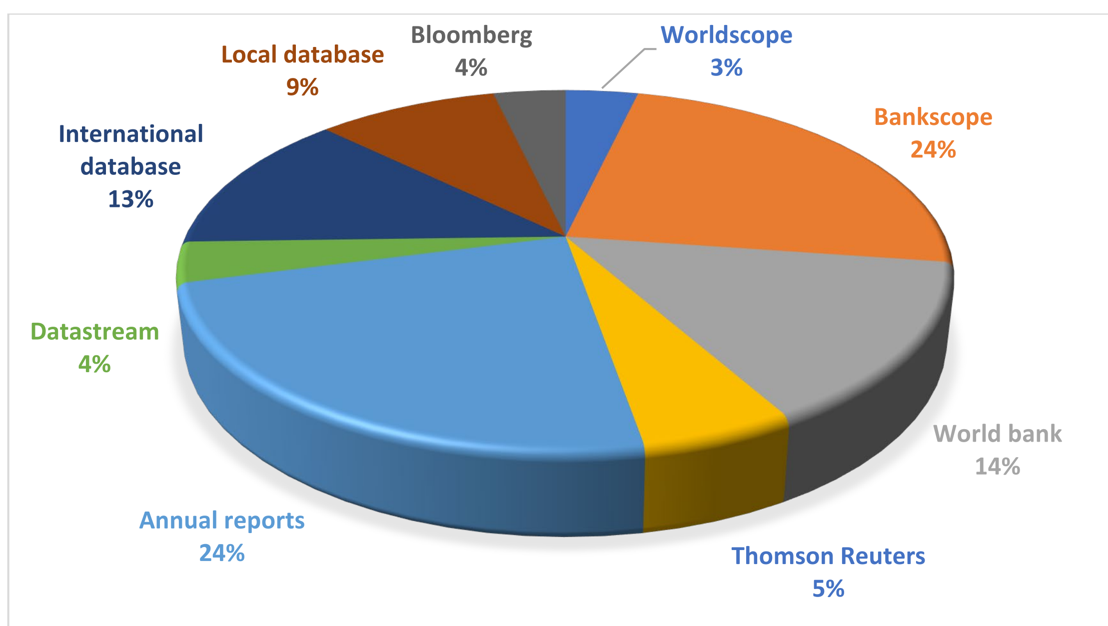

FIGURE 4. Data sources

THEMATIC ANALYSIS

Insolvency risk (IR) in the banking industry refers to the possibility of a bank being unable to fulfil its financial obligations when its liabilities exceed its assets. It provides a snapshot of a bank's financial health and risk susceptibility. Table 6 shows the thematic analysis of the factors contributing to IR. These factors can be classified into three main themes: governance, bank-specific, and macroeconomic, which further produce 12 sub-themes.

TABLE 6. The theme and sub-themes

	Authors	Governance			Bank-specific							Macroeconomic				
		CG	IG	SG	CA	SI	G	Age	AQ	LQ	IF	GDP	FD	Com	Crisis	Other
1	Rachdi et al. (2013)	√			√	√										
2	Abedifar et al. (2014)			√	√	√		√		√		√	√	√		
3	Ayadi & Boujèlbène (2014)		√			√			√				√			
4	Mohsni & Otchere (2014)	√	√										√			
5	ElBannan (2015)		√		√	√				√	√	√		√		
6	Guo et al. (2015)	√				√									√	
7	López-Andión et al. (2015)		√		√				√	√	√	√				√
8	Moldasheva (2015)	√			√		√	√				√				
9	Ashraf et al. (2016)	√				√						√				√
1	Cheng et al. (2016)	√				√	√									
11	Grassa (2016)	√				√							√			
12	Kashif et al. (2016)		√		√	√					√	√				
13	Kuranchie-Pong et al. (2016)	√			√	√										
14	Minhat & Abdullah (2016)	√			√	√										
15	Mollah & Liljeblom (2016)	√	√		√	√				√			√		√	
16	Pina et al. (2016)	√				√		√								
17	Alshubiri (2017)		√			√					√	√				
18	Ashraf et al. (2017)		√		√	√					√	√				
19	García-Sánchez et al. (2017)	√	√		√	√				√						
20	Zheng et al. (2017)	√			√	√	√				√	√	√			
21	Ben Zeineb & Mensi (2018)	√		√		√	√									
22	Bermpei et al. (2018)		√		√	√	√		√		√	√		√		
23	Iramani et al. (2018)	√			√	√					√	√				
24	Lassoued (2018)	√		√	√											
25	Samet et al. (2018)		√		√	√	√				√	√				
26	Abdelbadie & Salama (2019)	√	√		√	√		√		√						
27	AlAbbad et al. (2019)	√	√	√						√		√				
28	Bley et al. (2019)		√			√	√									
29	D'Amato & Gallo (2019)	√			√	√	√	√	√			√				
30	Dang (2019)	√			√		√									

	Authors	Governance			Bank-specific					Macroeconomic					
		CG	IG	SG	CA	SI	G	Age	AQ	LQ	IF	GDP	FD	Com	Crisis	Other
31	Kamran et al. (2019)		√		√								√			
32	Lapteacru (2019)	√				√				√			√		√	
33	Bai et al. (2020)	√			√	√	√									
34	Gulamhussen et al. (2020)	√				√	√	√				√				
35	Gupta & Kashiramka (2020)	√			√	√				√		√				
36	Karkowska & Acedański (2020)	√			√	√										
37	Mbanyele (2020)	√				√			√							
38	Moudud-Ul-Huq et al. (2020)	√				√			√	√						
39	Otero et al. (2020)	√	√			√	√			√		√				
40	Trinh et al. (2020)	√				√						√				√
41	Abid et al. (2021)	√			√	√				√		√				√
42	Acheampong & Elshandidy (2021)		√			√					√	√				
43	Albaity et al. (2021)		√			√			√			√				√
44	Ali et al. (2021)	√				√	√			√						
45	Nguyen (2021)	√		√		√						√		√		
46	Hassan et al. (2021)	√				√										
47	Khalil (2021)	√				√		√	√		√	√				
48	Khalil & Ben Slimene (2021)	√	√			√		√			√	√			√	
49	Stephenson (2021)	√				√	√		√	√						√
50	Bakhouche et al. (2022)	√				√	√			√	√	√				
51	Brogi & Lagasio (2022)	√			√	√										
52	Elnahass et al. (2022)	√	√			√		√			√	√				
53	Hac (2022)		√				√				√	√				
54	Kanoujiya et al. (2022)		√			√										
55	Sallemi et al. (2022)	√	√		√	√					√	√				
	Total studies	40	21	5	24	47	15	9	8	13	16	28	8	4	4	6

Notes: CG - Corporate Governance, IG - Institutional Governance, SG - Shariah Governance, CA - capital, SI - size, G - bank growth, Age – bank age, AQ - asset quality, LQ - liquidity, IF - inflation, GDP - gross domestic product, FD - financial development, Com – competition, Cri – crisis, Other - gross private saving and trust.

GOVERNANCE

Governance is a broad theme that encompasses three key areas: CG, IG, and SG. CG involves integrating the management, board of directors, shareholders, and other stakeholders towards achieving the company's goals (OECD 2019). IG, on the other hand, refers to governance at the national (institutional quality - IQ) and sector level (bank regulations and supervision - BRS). IQ is measured by the World Bank governance indicators, which assess the rule of law, government effectiveness, anti-corruption measures, political stability, regulatory quality, and mechanisms for voice and accountability. BRS comprises capital regulation, asset restrictions, supervisory power, and private monitoring measure sector-level governance (Barth et al. 2013). SG is specific to Islamic financial institutions, ensuring all processes, transactions, and activities comply with Shariah law (Ginena & Hamid 2015).

Several studies have analyzed different types of governance, such as CG in 28 studies, IG in 16 studies, or SG in 1 study. Some studies have examined two layers of governance, such as CG and IG in 7 studies or CG and SG in 3 studies. Only one study has analyzed all three layers of governance (AlAbbad et al. 2019). In total, 46 studies have focused on a single layer of governance, while nine have focused on two or more layers of governance.

For further analysis, the predictive power of governance factors for bank IR forecasting is computed using weight analysis. It categorizes governance factors into well-utilized (examined >5 times) and experimental predictors (examined < 5 times). Each governance factor is assigned a numerical weight, calculated by dividing the number of studies indicating a significant effect by the total number of studies examining that factor (Jafri et al. 2024). The weight score enables a systematic comparison of governance effectiveness, with scores closer to 1 indicating higher predictive power. A well-used predictor is classified as the best predictor (weight > 0.8) or the least effective predictor (weight < 0.8). An experimental predictor is considered promising if its weight is equal to 1. Table 7 provides further analysis of these weight scores. The well-utilised CG factors tested more than five times BOD size, BOD duality, BOD independence, AC size, public ownership, governmental ownership, foreign ownership, and institutional ownership. However, none of these variables can be considered the best predictor because their score is less than 0.8. Therefore, these variables are least effective predictor. On the other hand, the least examined variables with a score of 1 are CRO independence, risk committee meeting, AC experience, and AC meeting. These variables are experimental yet promising.

Regarding SG, the only well-utilised variable is the SSB size, with a score of 0.3. Other variables, such as SSB independence and SSB foreign, show promising, with a score of 1. However, variables such as SSB female, SSB busyness, SSB, and Shariah review have a score of zero because they were insignificantly evidenced. The rule of law is the only

variable frequently used for IG, yet it is the least predictive. Other indicators such as information sharing, legal system, international reach, and financial freedom are promising factors.

TABLE 7. Weight analysis

Governance mechanisms	Positive	Negative	Insignificant	Weight analysis
CORPORATE GOVERNANCE (CG)				
BOD/ Director female	Abdelbadie & Salama (2019), Ntima et al. (2013), Aslam & Haron (2021), Maier & Yurtoglu (2022), Sallemi et al. (2022)	Hassan et al. (2021)	Ibáñez-Hernández et al. (2019), D'Amato & Gallo (2019)	0.75
BOD/ Director foreign	Maier & Yurtoglu (2022)	Trinh et al. (2020), Brogi & Lagasio (2022)	Khalil & Ben Slimene (2021)	0.75
BOD education	Abdelbadie & Salama (2019) Ali et al. (2021)	Brogi & Lagasio (2022)	D'Amato & Gallo (2019)	0.75
BOD/ CEO tenure	Guo et al. (2015)	Brogi & Lagasio (2022), Maier & Yurtoglu (2022)	Ibáñez-Hernández et al. (2019)	0.75
BOD size	Rachdi et al. (2013), Abdelbadie & Salama (2019), Ntima et al. (2013), Aslam & Haron (2021), Khasawneh (2016), Karkowska & Acedański (2020), Brogi & Lagasio (2022), Karkowska & Acedański (2020)	AlAbbad et al. (2019), Abid et al. (2021), Sallemi et al. (2022), Stephenson (2021), Hassan et al. (2021),	Mollah & Liljeblom (2016), Ashraf et al. (2016), Lassoued (2018), Ibáñez-Hernández et al. (2019), D'Amato & Gallo (2019), Mbanyele (2020), Elnahass et al. (2022)	0.65
BOD meetings	Aslam & Haron (2021), Brogi & Lagasio (2022)	Sallemi et al. (2022)	Khalil (2021), Elnahass et al. (2022)	0.60
BOD duality/ CEO duality	Khalil & Ben Slimene (2021), Ntima et al. (2013)	Rachdi et al. (2013), Ben Zeineb & Mensi (2018), AlAbbad et al. (2019), Elnahass et al. (2022)	Mbanyele, (2020), Abid et al. (2021), Maier & Yurtoglu (2022), Sallemi et al. (2022)	0.6
BOD independence/ non-executive directors	Ntima et al. (2013), Minhat & Abdullah (2016), Lassoued (2018), Maier & Yurtoglu (2022), Sallemi et al. (2022)	Khalil & Ben Slimene (2021), Mbanyele (2020), Khalil & Ben Slimene (2021), Karkowska & Acedański (2020), Aslam & Haron (2021), Brogi & Lagasio (2022), Karkowska & Acedański (2020), Stephenson (2021)	Rachdi et al. (2013), Trinh et al. (2020), Abdelbadie & Salama (2019), Ashraf et al. (2016), Mollah & Liljeblom (2016), Abid et al. (2021), Elnahass et al. (2022)	0.65
BOD/ CEO political influence		Ibáñez-Hernández et al. (2019), Pina et al. (2016), Stephenson (2021)		1
BOD turnover		Brogi & Lagasio (2022)	D'Amato & Gallo (2019)	0.5
CEO age			Guo et al. (2015), Maier & Yurtoglu (2022), Abdelbadie & Salama (2019)	0
CEO power (duality, internally recruited, age, tenure, banking experience)		Aslam & Haron (2021)	Mollah & Liljeblom (2016), Trinh et al. (2020)	0.33
CRO independence	Abid et al. (2021)			1
CRO existence			Abid et al. (2021)	0
Risk committee size			Abid et al. (2021)	0
Risk committee meeting	Abid et al. (2021)			1
AC female			Nguyen (2021)	0
AC expertise	García-Sánchez et al. (2017)		Salloum et al. (2014), Nguyen (2021)	0.5
AC experience		Ashraf et al. (2017)		1
AC size	Trinh et al. (2020), Nguyen (2021), Aslam & Haron (2021),	Elnahass et al. (2022)	Salloum et al. (2014), Aslam & Haron (2021)	0.67
AC meeting		Salloum et al. (2014)		1
AC independence	Nguyen (2021)		Salloum et al. (2014)	0.5
Disclosure		Brogi & Lagasio (2022)	Kuranchie-Pong et al. (2016)	0.5
Public ownership	Moudud-Ul-Huq et al. (2020), Abedifar et al. (2014)	(Bai et al. 2020), Pennathur et al. (2012)	Gupta & Kashiramka (2020), Ashraf et al. (2016)	0.66
Government ownership	Ntima et al. (2013)	(Bai et al. 2020), Mohsni & Otchere (2014), ElBannan (2015), Otero et al. (2020)	Cheng et al. (2016), Lapteacru (2019), Ashraf et al. (2016)	0.63

Governance mechanisms	Positive	Negative	Insignificant	Weight analysis
Private ownership		Pennathur et al. (2012), Zheng et al. (2017)	Mohsni & Otchere (2014), Ben Zeineb & Mensi (2018),	0.5
Foreign ownership	Abedifar et al. (2014), Lapteacru (2019), ElBannan (2015)		Gupta & Kashiramka (2020), Pennathur et al. (2012), Ben Zeineb & Mensi (2018)	0.5
Islamic bank ownership		Abedifar et al. (2014), Zheng et al. (2017), Otero et al. (2020)		1
Managerial ownership	Moudud-Ul-Huq et al. (2020), Mbanyele, (2020)		Rachdi et al. (2013), Moldasheva (2015), Gulamhussen et al. (2020)	0.4
Institutional ownership	Moudud-Ul-Huq et al. (2020), Abid et al. (2021)	Otero et al. (2020), Ben Zeineb & Mensi (2018)	Ntima et al. (2013), Ashraf et al. (2016)	0.66
Concentrated ownership – passive shareholding		Zheng et al. (2017) Alshubiri (2017)	Moudud-Ul-Huq et al. (2020), Minhat & Abdullah (2016)	0.50
Concentrated ownership – minority active shareholding/ block ownership		Ntima et al. (2013)	Grassa (2016), Zheng et al. (2017)	0.33
Concentrated ownership – majority shareholding	Grassa (2016), Kim (2019)		Otero et al. (2020), Abid et al. (2021)	0.5
CG index (nature of compliance, independent director, BOD and functionalities of board, audit committee, transparency and disclosure)		Otero et al. (2020) Iramani et al. (2018)	Zheng et al. (2017)	0.67
CG index (board attributes, compensation, ownership, auditing attributes, & antitakeover attributes)			Anginer et al. (2018)	0
SHARIAH GOVERNANCE (SG)				
SSB foreign		AlAbbad et al. (2019)		1
SSB female			Nguyen (2021)	0
SSB expertise	Nguyen (2021),		Khalil & Ben Slimene (2021)	0.5
SSB size	Nguyen (2021), Aslam & Haron (2021)	Ben Zeineb & Mensi (2018)	Lassoued (2018), AlAbbad et al. (2019)	0.6
SSB independence	Nguyen (2021)			1
SSB busyness			AlAbbad et al. (2019)	0
SSB			Lassoued (2018)	0
Shariah review			Abedifar et al. (2014)	0
INSTITUTIONAL GOVERNANCE (IG)				
Rule of law	Samet et al. (2018), Abedifar et al. (2014), Ashraf et al. (2017)	Bermpei et al. (2018), Soedarmono et al. (2013), Gulamhussen et al. (2020)	Kamran et al. (2019), Mohsni & Otchere (2014), Kashif et al. (2016), Kim (2019), AlAbbad et al. (2019), Bley et al. (2019), Albaity et al. (2021)	0.46
Political stability			Mohsni & Otchere (2014), Bermpei et al. (2018), Kamran et al. (2019), Albaity et al. (2021)	0
Control of corruption	Bermpei et al. (2018), Sallemi et al. (2022)	Kamran et al. (2019)	Albaity et al. (2021)	0.75
Creditor rights	Bermpei et al. (2018)		Bley et al. (2019)	0.5
Information sharing		Bermpei et al. (2018)		1
Credit sharing information			Bley et al. (2019)	0
Freedom of speech			Bley et al. (2019)	0
Voice and accountability			Kamran et al. (2019), Albaity et al. (2021)	0
Regulatory quality	Ayadi & Boujèlbène (2014) Ashraf et al. (2017), Hac (2022)		Kamran et al. (2019), Kim (2019), Albaity et al. (2021), AlAbbad et al. (2019), Bley et al. (2019)	0.38
Government effectiveness	Mollah & Liljeblom (2016), Hac (2022)	Anginer et al. (2018), Acheampong & Elsh&idy (2021)	Kim (2019), Albaity et al. (2021)	0.67
Legal system	Abedifar et al. (2014)	Bakhouche et al. (2020)		1
International reach	Gulamhussen et al. (2014)			1
Capital regulation	Bermpei et al. (2018), Acheampong & Elsh&idy (2021)	Ayadi & Boujèlbène (2014)	Mollah & Liljeblom (2016), Anginer et al. (2018), Kanoujiya et al. (2022)	0.5
Asset restrictions	Mollah & Liljeblom (2016), Bermpei et al. (2018)		Anginer et al. (2018)	0.66

Governance mechanisms	Positive	Negative	Insignificant	Weight analysis
Financial freedom		Anginer et al. (2018), Ashraf et al. (2017)	Alshubiri (2017)	0.67
Supervisory power	Gulamhussen et al. (2014)	Bermpei et al. (2018)	Mollah & Liljeblom (2016), Anginer et al. (2018)	0.5
Private monitoring			Mollah & Liljeblom (2016), Bermpei et al. (2018)	0

BANK-SPECIFIC FACTORS

Bank characteristics are well acknowledged to influence bank risk (D'Amato & Gallo 2019). The review suggests six factors, namely capital, size, growth, age, asset quality and liquidity, affecting risk. Capital reflects capability of bank in absorbing losses (Ibáñez-Hernández et al. 2019). A total of 24 studies examined capital and reported mixed findings on the role of capital. ElBannan (2015) found a positive effect, while some studies evidenced a negative association with IR (D'Amato & Gallo 2019; Ibáñez-Hernández et al. 2019). However, other studies showed insignificant findings (Samet et al. 2018; Zheng et al. 2017).

Size is one of the most examined factors, with 47 studies. Bank size is measured in most studies using the book value of total assets (Khasawneh 2016; Kuranchie-Pong et al. 2016). It measures economies of scale and the bank's ability to reduce cost and risk. Previous studies found varying size-risk relationships. Some studies found a positive (Bakhouche et al. 2022; Stephenson 2021) and a negative relationship (Hassan et al. 2021; Khalil & Ben Slimene 2021). However, most of the studies showed insignificant results (Acheampong & Elshandidy 2021; Gupta & Kashiramka 2020; Moudud-Ul-Huq et al. 2020).

Bank growth is the change in total assets compared with previous year (Zheng et al. 2017). It measures business opportunities and expansion. Seven studies examined this variable. Most studies found significant effect of bank growth on risk, with a positive (Pina et al. 2016; Samet et al. 2018) and a negative relationship (Ben Zeineb & Mensi 2018; Bley et al. 2019; D'Amato & Gallo 2019; Maier & Yurtoglu 2022), except Gulamhussen et al. (2020) and Bakhouche et al. (2022), indicating insignificant impact.

Five studies examined the impact of bank age. It is measured by the year of the bank since its establishment, suggesting experience and a strong presence in the banking industry. Pina et al. (2016) found that age increases risk, while the finding is contradicted by D'Amato and Gallo (2019), indicating an adverse relationship. In contrast, Gulamhussen et al. (2020) and Nguyen and Dang, (2022) found that age has an insignificant effect.

Asset quality measures credit management or bank's ability to manage its receivables. Asset quality has a negative effect on IR (Ayadi & Boujèlbène 2014) and insignificant effect is found in other three studies (D'Amato & Gallo 2019; Ibáñez-Hernández et al. 2019). Seven studies examined the role of liquidity on risk. Liquidity reflects ability of bank in matching asset and liability, which is to meet demand withrawals of depositors and to meet financing needs of borrowers. Nonetheless, all studies failed to evidence the sigificant effect of liquidity on risk (AlAbbad et al. 2019; Ibáñez-Hernández et al. 2019).

MACROECONOMIC FACTORS

Macroeconomic variables include GDP, inflation and financial development. GDP is defined as the annual growth of GDP rate yearly, reflecting the economic condition of a country (ElBannan 2015). GDP was examined in 28 studies. The findings are mixed. Majority studies found insignificant effect of GDP on risk (Bakhouche et al. 2022; Gulamhussen et al. 2020; Sallemi et al. 2022) However, GDP has a positive effect on risk in the study of Samet et al. (2018), Zheng et al. (2017) and Hac (2022) and a negative effect in the study of Acheampong and Elshandidy (2021) and Elnahass et al. (2022).

Inflation is the rate of consumer price index in yearly basis, indicating the purchasing power of consumers (ElBannan 2015). A positive effect of inflation was found in ElBannan (2015) and a negative effect in Samet et al. (2018) and Zheng et al. (2017). In contrast, Kashif et al. (2016) and Sallemi et al. (2022) discovered an insignificant findings.

The financial development indicate the improvement in quantity, quality and efficiency of financial intermediary services (Khasawneh 2016). A positive effect was observed in Zheng et al. (2017), Ayadi and Boujèlbène (2014) and Mohsni and Otchere (2014). Meanwhile a negative effect is found in Anginer et al. (2018) and Grassa (2016). However, insignificant findings were reported in Ibáñez-Hernández et al. (2019), Khasawneh (2016), Mollah and Liljeblom (2016), and Nguyen and Dang (2022).

Competition in the banking sector is indicative of its market structure and concentration, typically gauged by the number of banks and the distribution of their market share, based on total assets. Soedarmono et al. (2013) discovered that greater market power, as demonstrated by the Lerner Index, positively affects IR. Conversely, Abedifar et al. (2014) and Elbannan (2015) showed that market concentration, measured by the HHI, reduces IR. When assessing the market share of the three largest banks using the CR3 metric, both Nguyen (2021) and Nguyen and Dang (2022) found the effect on IR to be insignificant.

Crisis significantly changes bank behaviours and risk profiles. During crises, banks face increased loan defaults and liquidity restrictions, leading to amplified IR. The positive effect of crisis on IR has been evidenced in four studies (Ibáñez-Hernández et al. 2019; Khasawneh 2016; Mollah & Liljeblom 2016; Guo et al. 2015). For the sub-category other, it consists of gross private saving (GPS) and trust, with only one study includes each variable in the model. Abid et al. (2021) revealed an insignificant effect of GPS on IR while Albaity et al. (2021) found a negative trust-IR relationship.

DISCUSSION

This section discusses the objective of the review, which is to examine the impact of multi-layer governance on IR in banking. The review identified two types of governance, namely internal and external governance. CG is internal governance whereas IG represents governance mechanisms at both sector level (bank regulation and supervision) and national level (IQ). Interestingly for Islamic banks, they are governed by two-tier SG from within banking (internal) and country level (external). Figure 5 demonstrates the governance structure in banking.

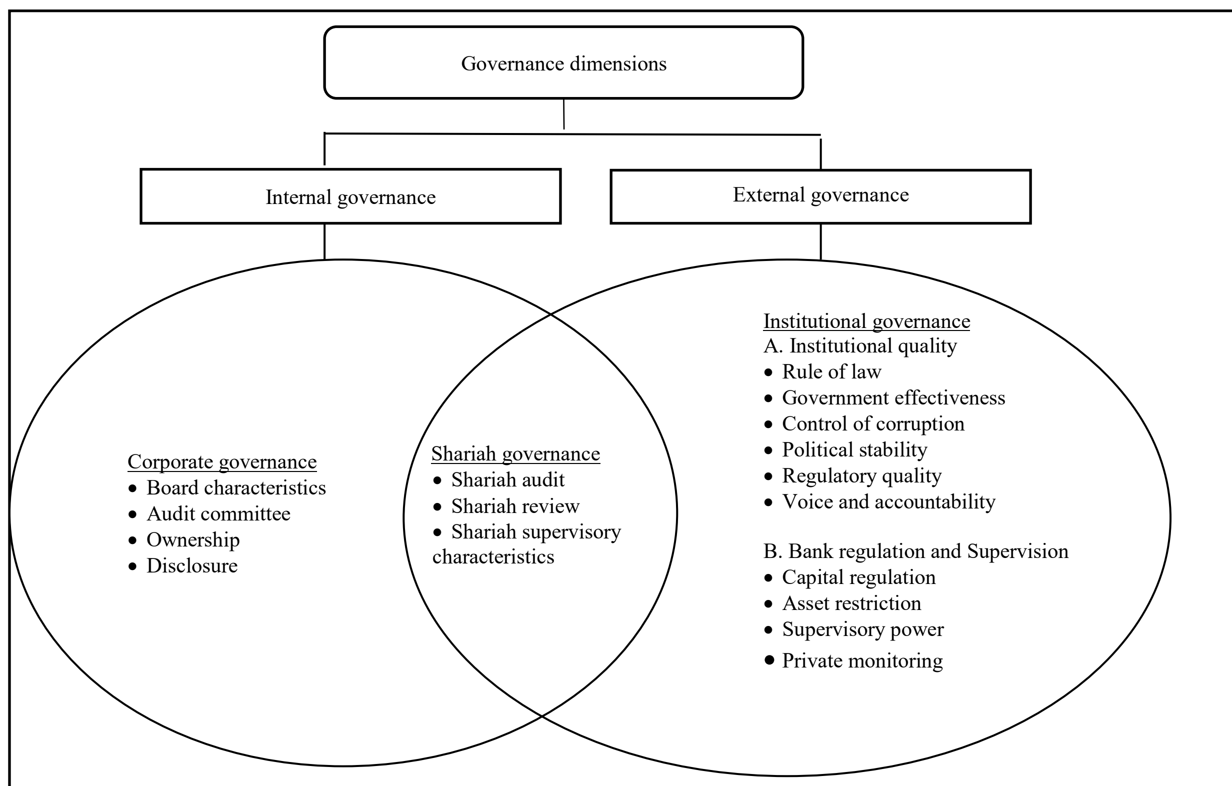

FIGURE 5. Governance structure in banking

CORPORATE GOVERNANCE AND INSOLVENCY RISK

The role of CG on IR is the most examined topic. The highlight of CG started in the 1990s with Cadbury's report, which focused on improving the quality of financial reporting (Cardoni & Kiseleva 2023). CG is critical not only for IR but also for the performance of banks as it has the ability to enhance the accuracy of reporting and improve performance (Alzayed et al. 2023; Zahid et al. 2023). Studies examining CG's effect on IR have mainly deployed the agency theory. The review suggests four CG mechanisms, namely board characteristics, audit committee, ownership and disclosure.

Board characteristics, such as independence, expertise, and diversity, have been found to potentially reduce the risk of insolvency, according to certain studies. Moreover, Brogi and Lagasio (2022) and Sallemi et al. (2022) suggest that a lack of board independence can elevate risk. An organized and knowledgeable board is capable of making informed decisions, overseeing risk management practices, and providing effective governance, thereby reducing the risk of insolvency (Elnahass et al. 2023; Jebran & Chen 2023; Umar et al. 2023a). Conversely, certain studies suggest that an excessively independent board can result in inefficiencies and delays in decision-making. Excessive independence can lead to a lack of industry-specific knowledge and a disconnect between the board and management, potentially raising the risk of insolvency (Asiamah et al. 2023; Umar et al. 2023b).

Audit committees with greater expertise and independence can mitigate IR. Regular meetings suggest a proactive approach to managing and overseeing risks (Umar et al. 2023a; Zavareh & Abdollahi 2023). Audit committees, despite possessing expertise and independence, may fail to adequately identify or mitigate risks. Information asymmetry can

hinder their capacity to accurately identify all potential risks (El Mahdy et al. 2022). Audit committees heavily depend on information provided by the bank's management and internal auditors. Insufficient or deceptive information from management can hinder the committee's capacity to recognize and address risks (Alleyne & Howard 2005).

Researchers have indicated that ownership structures can reduce IR. A diversified ownership structure with lower concentration can decrease the influence of a single entity and promote risk-sharing (Grassa 2016; Pennathur et al. 2012). Some studies suggest that concentrated ownership may have negative consequences due to conflicts of interest. Dominant owners might influence bank decisions for short-term gains, pushing for riskier projects to enhance profitability and dividends, potentially at the expense of the bank's solvency (Ntima et al. 2013). In contrast, foreign ownership often promotes long-term stability as they often bring in international best practices and stringent risk management frameworks that fortify a bank's resilience. ElBannan (2015) posited that although foreign bank entry can enhance the efficiency of local banks through increased competition, this intense competition might also erode their profits, elevating their risk.

Additionally, a bank's disclosure practices are pivotal. Disclosure can be indicated by transparency, timeliness, and regulatory adherence. Transparent and regular financial reporting allows stakeholders to gauge a bank's health accurately. Adherence to regulatory norms indicates robust internal controls. In essence, effective CG mechanisms act as shields, promoting transparency and reducing IR (Liu et al. 2023). However, excessive disclosure requirements and stringent regulatory adherence can impose compliance costs on banks and limit their flexibility in adapting to market changes (Bu 2016). In summation, adept CG mechanisms, when operationalized effectively, can serve as a bank's disciplinary mechanisms against excessive risks, cultivating an ethos of transparency and accountability, and in turn, warding off IR.

Recent studies have examined the moderation role of CG in IR determinants model. Mollah and Liljeblom (2016) examined the effect of powerful CEO on bank performance in 56 countries. The moderating role of several CG mechanisms was examined and these include CEO power (positive), board size (insignificant), BOD independence (negative). Sallemi et al. (2022) examined also the moderating role CG such as BOD size, BOD independence, BOD duality and BOD meetings in 10 OECD countries. The findings showed that the interaction of BOD size, BOD duality, and BOD meeting with control of corruption index (CCI) is positive while BOD independence and CCI is insignificant.

SHARIAH GOVERNANCE AND INSOLVENCY RISK

SG mechanisms play a pivotal role in mitigating bank IR by ensuring compliance with Islamic principles. A strong SG is essential to improve the image, reputation and performance of banks, and thus, enhance confidence and trust of stakeholders (Ben Zeineb & Mensi 2018). SG incorporates three elements, namely Shariah audit, Shariah review, and Shariah supervisory characteristics at both bank and country level. The role of SG on IR is the least examined topic. This could be due to the lack of studies in Islamic banking and limited interest on SG, with only five studies in GCC (Ben Zeineb & Mensi 2018), MENA (AlAbbad et al. 2019), OIC (Abedifar et al. 2014), Asia and UK (Nguyen 2021), and Malaysia (Lassoued 2018).

A competent, autonomous, and engaged SSB can positively influence the management of IR. An efficient Shariah-compliant monitoring and advisory system can improve governance and mitigate risks (Abedifar et al. 2014; Nguyen 2021). The lack of independence, expertise, or authority to enforce Shariah compliance within the SSB can lead to mixed findings (Aslam & Haron 2021; Mukhibad et al. 2022). An inefficient SSB may fail to adequately identify and address the risks associated with insolvency. The effectiveness of the SSB, characterized by its members' experience and knowledge, provides invaluable guidance, ensuring both Shariah adherence and financial sustainability. Collectively, these mechanisms bolster trust and reduce potential threats to a bank's financial stability. Nonetheless, a dominant SSB can heighten IR due to potential oversight lapses and a narrow approach to financial decisions, as noted by AlAbbad et al. (2019) and Aslam & Haron (2021). In addition, SSB education and experience can also be a determinant factor in increasing the IR (Mukhibad et al. 2022). Insufficient expertise, similarly, can translate to inadequate oversight and understanding of complex financial instruments, further escalating the IR. Additionally, SSB size, and independence can lead to an increase in the IR (Nguyen 2021). A larger SSB might lead to slower decision-making, while lack of independence could result in conflicts of interest that might not align with the bank's long-term stability.

Thorough and independent Shariah audits can effectively detect and rectify instances of non-compliance with Shariah principles and ethical standards (Nguyen 2021). This can decrease the risk of insolvency by encouraging financial transparency and ethical behavior. However, variability in the quality and efficacy of Shariah audits can lead to inconsistent research findings. Inadequate rigor, independence, or timely reporting in audits can hinder their effectiveness in mitigating IR (AlAbbad et al. 2019; Lassoued 2018).

Moreover, comprehensive Shariah reviews enables the assessment of a bank's adherence to Shariah principles. Exhaustive scrutiny of banking transactions and products helps mitigate non-compliance issues, bolstering customer trust and loyalty. This reputation will attract more customers and investors, lead to enhanced liquidity and capitalization, which improve bank stability. However, too conservative or restrictive board in interpreting Shariah principles could limit investment diversification opportunities that could hampering profitability. Also, if the board reluctant to adapt to changing market conditions, banks may lag in product innovations and waste profitable opportunities. Grassa (2012) added that insufficient or infrequent Shariah reviews may result in non-compliant practices and accumulation of non-compliant income that cannot be retained as earnings but must be given away as donations. This practice may erode customer and investor trust, as they become concerned about bank's integrity in adherence to Shariah law. Over time, these factors can diminish profitability and weaken bank stability.

IG represents external governance mechanisms designed specifically for the banking sector (bank regulation and supervision - BRS) and for the country as a whole (institutional quality - IQ). Barth et al. (2013)'s World Bank BRS database encompasses capital regulation, asset restriction, supervisory power, and private monitoring, serving as indicators of governance enforcement within the banking sector. In a country' governance context, the World Bank Governance Indicators incorporates the rule of law, government effectiveness, control of corruption, political stability, regulatory quality, and mechanisms for voice and accountability (World Bank 2021).

Barth et al. (2013) postulated two contrasting perspectives on the role of BRS. The public interest theory posits that governments design regulatory measures primarily to safeguard public welfare. Bank regulations serve as governance mechanisms to promote prudent risk management, improve bank performance, and reduce the likelihood of market failures. In comparison, the private interest theory contends that certain bank regulations are driven by the desire to maximize the interests of specific groups of investors, which may inadvertently encourage greater risk-taking by banks. The review found a mixed bank regulation effects. For instance, Bermpei et al. (2018) showed that supervisory power increase IR while asset restriction, capital regulation, and private monitoring reduce it. In contrast, Mollah and Liljeblom (2016) found that asset restrictions reinforce IR while other three BRS are insignificant.

Capital regulation, which sets minimum capital requirements based on a bank's risk-weighted assets, is designed to ensure that banks maintain sufficient capital to fulfill their claims and obligations, providing a buffer against losses and reducing IR (Anginer et al. 2018). However, stringent capital requirements are considered a burden, particularly for new banks, as these regulatory costs can lead to inefficiency, reduced profitability, and solvency problems (Bermpei et al. 2018). Asset restrictions aim to prevent banks from engaging in high-risk or illiquid activities such as securities, insurance, and real estate, which could potentially lead to insolvency. However, these restrictions also limit diversification, resulting in an overconcentration in specific asset classes, making banks vulnerable to market fluctuations and significant losses, which jeopardizes their stability (Mollah & Liljeblom 2016, Bermpei et al. 2018).

Supervisory power refers to regulatory authority's ability to intervene in banking operations, monitor risk, and take corrective measures to reduce risks. It includes the authority to oversee external auditors, receive illicit activities reports, enforce legal actions for negligence, influence internal organization, access off-balance sheet data, regulate loss provisions, suspend decisions on dividends and bonuses, declare insolvency, suspend ownership rights, and replace management and directors (Anginer et al. 2018; Bermpei et al. 2018). However, a powerful and politically connected supervisor might compel banks to offer financing on lenient terms or create obstacles for specific groups based on political agendas. These pressures can lead to suboptimal decisions by banks, undermining their growth and increasing insolvency vulnerability. Similarly, dominant banks may exert significant influence over politicians, leading to relaxed supervisory oversight and enforcement.

Private monitoring reflects external oversight by credit rating agencies, auditors, investors and the public based on information disclosure related to legal liability, international rating and audit, off-balance sheet items, risk transparency, unpaid interest/principal in non-performing loans, subordinated debt as capital, and deposit insurance policy (Mollah & Liljeblom 2016, Bermpei et al. 2018). It serves as a market disciplinary tool to prevent bank from excessive risk taking and foster prudent banking practice. Nonetheless, informational barriers, particularly in countries with underdeveloped capital markets, weak accounting standards, and government support, could result in reduced private oversight, potentially encouraging riskier bank activities.

IQ-regulation enforcement theory proposes that IQ complements BRS in promoting regulatory enforcement to ensure bank stability (Bermpei et al. 2018). IG mechanisms collectively create the overarching environment for banking operations. The IG framework encourages banks to adhere to prudent practices, enables effective oversight by regulators, ultimately promoting the stability and integrity of the banking system.

The rule of law gauges trusts and compliance with societal norms and regulations by providing a foundation for dispute resolution and enforcing legal and contractual obligations, such as those in loan agreements and debt contracts, ultimately diminishing potential losses, loan defaults, and IR. Rule of law has a mixed effect on IR. It has affected positively the IR (Samet et al. 2018; Abedifar et al. (2014), negatively (Bermpei et al. 2018; Gulamhussen et al. 2020) and has insignificant effect (Kamran et al. 2019; Kim 2019; AlAbbad et al. 2019, Albaity et al. 2021).

Government effectiveness pertains to the efficient implementation of policies and regulations, such as promptly responding to financial crises, instituting necessary reforms, and collaborating with regulatory bodies to prevent contagion, resulting in a reduced probability of bank insolvency and the promotion of economic stability. The government effectiveness affected positively IR (Mollah & Liljeblom 2016), negatively (Anginer et al. 2018) and has insignificant effect (Kim 2019; Albaity et al. 2021).

The level of corruption measures a financial system integrity. In a highly corrupt country, there is a potential weakening of regulatory oversight, distortion of risk assessment, and encouragement of risky behavior in banks, whereas in a low-corruption country, regulatory authorities are more inclined to prioritize the public interest, enforce prudential rules, and reduce the bank IR. Control of corruption showed mixed findings with positive effect on IR (Bermpei et al. 2018, Sallemi et al. 2022), negative effect (Kamran et al. 2019), and insignificant effect (Albaity et al. 2021).

Political stability assesses the likelihood of government destabilization or overthrow. While stable government promotes economic and financial stability, political instability can create uncertainty and disrupt the financial sector,

making banks more susceptible to IR amid crises. Among the reviewed studies, political stability has an insignificant effect on IR (Kamran et al. 2019; Albaity et al. 2021). Voice and accountability implies a free media, freedom of expression and association, and democratic government. It empowers stakeholders, including shareholders and the public, to hold banks and regulatory authorities accountable, serving as deterrents against immoral and excessive risk-taking behavior. Similar to political stability, voice and accountability showed insigifcnat effect on IR (Kamran et al. 2019, Albaity et al. 2021). Regulatory quality, reflecting the government's ability to establish and enforce effective and transparent regulations, encourages prudent banking practices and risk management, and enhancing financial resilience during economic shocks. Regulatory quality affected positively IR (Ayadi & Boujèlbène 2014) and it has insignificant effect on IR (Kamran et al. 2019, Kim 2019 Albaity et al. 2021).

Previous studies have investigated the moderation role of IG. Mollah and Liljeblom (2016) examined the moderating role of regulatory quality and found that there is a positive effect. Bermpei et al. (2018) examined the moderating role of several indicator of IG in 59 emerging economies. The findings showed that control of corruption moderate the effect of capital regulation (negative), asset restriction (insignificant), private monitoring (insignificant), and supervisory power (insignificant). Rule of law was examined as a moderator with capital regulation (positive), asset restriction (insignificant), private monitoring (insignificant), supervisory power (insignificant). Similarly, the political stability was examined as a moderator with asset restriction (insignificant), private monitoring (insignificant), supervisory power (insignificant). Creditor rights was also examined as a moderator with capital regulation (insignificant), asset restriction (insignificant), supervisory power (positive).

LITERATURE GAPS AND FUTURE RESEARCH AGENDA

Most previous research focused on specific governance separately, overlooking its interconnectedness with other governance mechanisms, which is vital for comprehending bank stability. While there were many documentations about CG, SG is the least research area, with emerging studies examining the interplay between not more than two governance mechanisms. The future works should explore the role of multi-layer governance mechanisms (CG, SG, and IG) to provide more comprehensive understanding on their collective dynamics on bank IR. Examining multilayer governance on IR is crucial for understanding the intricate dynamics that influence the stability of banking institutions. These layers of governance interact and impact each other in complex ways, ultimately shaping a bank's risk profile and its ability to deal with financial challenges. For example, the effectiveness of regulatory frameworks is often contingent upon the quality of a bank's internal governance structures, which themselves differ according to bank-specific characteristics, organizational structure, and the overarching macroeconomic context. Such factors can significantly shape the interplay between regulatory practices and financial stability. Recognizing this heterogeneity is essential, as different governance mechanisms may have varying effects on bank stability based on these contextual factors. Therefore, identifying and understanding these sources of heterogeneity is paramount to develop more nuanced and effective regulatory frameworks that enhance the overall stability of the banking sector.

The exploration of governance mechanisms in banking is relatively narrow in scope, with most studies focusing on the size of the SSB to represent SG and limiting CG research to the BOD characteristics. This limited focus leaves a significant gap in our understanding of the diverse nature of governance in banking. Future studies should examine a broader range of governance mechanisms, including ownership structure, disclosure practices, Shariah review and audit process, and IG factors such as government effectiveness, control of corruption, political stability, regulatory quality, and voice and accountability. Expanding the scope of governance research can fill gaps and provide comprehensive insights that guide practitioners and policymakers towards a more stable and resilient banking sector.

The existing governance-risk model lacks empirically validated methods that account for moderating effects. Recent studies suggest further exploration into the moderating effects of CEO power, BOD size, BOD independence, BOD duality, IQ and bank regulations. More outstanding research is needed on the indirect role of governance in shaping the link between risk determinants and bank insolvency. Integrating these effects offers fertile ground for scholarly exploration, leading to more profound insights into the governance-IR complexities. Future researchers should create models that embed these dynamic interactions to enrich our understanding and benefit a broader range of stakeholders.

The thematic and weight analysis indicated the gaps and potential governance predictors for future studies in developing a governance-risk framework. The well-utilized, promising, and experimental predictors may be a reference point in developing such a framework. Nonetheless, the findings established that none of the governance mechanisms can be considered the best predictor. Meanwhile, promising predictors like CRO independence, risk committee meetings, audit committee experience, audit committee meetings, Shariah Board size, and the rule of law underscore the emerging concern regarding ethical standing and sustainability practices. It suggests that strengthening a bank's internal controls, risk management, and regulatory compliance are crucial in preventing insolvency. A robust governance system is particularly vital in the banking sector, as the failure of a bank can have far-reaching consequences, transcending the financial system and the economy.

The predominance of Agency theory in past research mainly focused on CG, is understandable; however, Stakeholder theory is more appropriate for explaining the multi-layered nature of governance in banking, including corporate, Shariah, and institutional aspects. This theory better emphasizes all stakeholders' interconnectedness and diverse interests, ensuring a more holistic and practical approach to governance and risk management. Moreover, integrating governance theory with other relevant theories in banking research is also an avenue for future research.

Combining governance theory with banking, risk management, and technology theory can offer a multidimensional analysis to foster a comprehensive understanding of the sector's complexities. For example, combining transaction cost theory provides insight into the efficiency of governance and technology mechanisms to reduce the cost of operation. Similarly, the rapid fintech development makes it essential to combine technology adoption theory with governance theory, illuminating the influence of governance on technological innovation. In addition, when combined with governance, risk and return and signaling theory improves our understanding of how governance influences risk management practices, market perceptions and investor confidence. This multidisciplinary approach is essential to capture the interdependencies in the banking sector, leading to more effective decision-making and policy development.

Future research should expand its context to include a broader range of economic environments and types of banking. The existing literature is mainly focused on developed countries, leaving significant gaps in understanding of governance issues in developing countries. The different levels of regulatory maturity, financial market development, and unique socio-economic challenges potentially lead to significantly different outcomes in the governance-risk relationship compared to developed counterparts. Similarly, although most research focuses on conventional banking, there is an urgent need to delve deeper into Islamic banking. Compared to conventional banks, Islamic banks' distinctive ownership structure and operating principles provide a unique landscape for studying governance. Using a large international sample that includes banks from various economic statuses and types, future studies can provide a more comprehensive view and facilitate meaningful comparisons between different banking models and countries. This approach will cross-validate existing theories and enrich understanding of the governance-risk relationship in the global banking landscape

Governance and risk in banking research is still relevant due to its dynamic and ever-changing nature. The banking industry continues to be affected by many factors such as technological advances, regulatory changes, global economic shifts and emerging financial products and services. These changes often introduce new dimensions of risk, challenging existing governance structures and risk management practices. For example, the rise of digital banking and fintech innovation not only offers new opportunities but also poses unique cybersecurity and operational risks. Furthermore, global economic fluctuations and crises, such as the 2008 financial crisis or the COVID-19 pandemic, frequently test the resilience and adaptability of governance frameworks. As this transformation takes place, the banking sector must constantly reassess and refine its governance and risk management strategies to remain robust, compliant and competitive. Therefore, continued research in this area is essential to anticipate future challenges, inform policy and regulatory frameworks, and guide banks in implementing effective governance and risk mitigation measures, ensuring the stability and integrity of the sector in the face of an unpredictable future.

CONCLUSION

This paper presents a systematic literature review on the relationship between governance and IR in banking. The review analyzed 55 articles from the Scopus and WoS databases using the PRISMA methodology. It found a significant increase in governance studies since 2012, emphasizing the topic’s growing importance in academic discourse. Agency Theory remains a prevalent governance framework, with CG being the most researched topic. We propose an empirical multi-layer governance-IR model for banks. Our study emphasizes the need for the banking industry to prioritize governance, which is essential to increase public confidence and mitigate risks. As the banking landscape evolves, policymakers must remain vigilant and adapt governance frameworks accordingly.

Future scholars will find our study valuable, guiding them in selecting relevant governance aspects and theories for sustainable banking research. However, we acknowledge mixed findings exist in the governance and risk relationship due to differences in governance scope and conduct and variations in study countries. Therefore, we recommend further investigation to clarify the governance-risk relationship in different banking contexts.

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