

## **A BIBLIOMETRIC ANALYSIS AND MAPPING STUDY OF RISK MANAGEMENT IN ISLAMIC FINANCIAL INSTITUTIONS**

Adel K. Alghamati<sup>1</sup>, S. M. Ferdous Azam<sup>2</sup> and Ali Khatibi<sup>3</sup>

<sup>1</sup> Management and Science University, Malaysia, adel.msu.jour24@gmail.com

<sup>2</sup> Management and Science University, Malaysia, drferdous@msu.edu.my

<sup>3</sup> Management and Science University, Malaysia, alik@msu.edu.my

### **ABSTRACT**

This paper performs a bibliometric analysis on risk management in Islamic financial institutions (IFIs), identifying significant research themes, influential authors, as well as emerging trends from 2003 to 2024. A systematic search strategy identifies 524 relevant publications from the Scopus and Web of Science databases. Using techniques from network analysis, science mapping, and performance analysis with the help of VOSviewer software, we find that 2020 and 2021, with 86 and 97 papers, are the most productive years in both databases. University of New Orleans and International Islamic University Malaysia are significant institutions. The most prominent journal is the International Journal of Islamic and Middle Eastern Finance & Management, which garners the highest number of citations. The Journal of Islamic Accounting and Business Research has the highest number of publications. Malaysia is a significant contributor to this field. Moreover, research on risk management in other sectors has been scant, concentrating solely on Islamic banking. Relying on particular databases and English-language publications could have eliminated relevant non-English research.

*Keywords:* Risk management, Risk credit, Islamic banking, Islamic financial institutions, Corporate governance.

**JEL classification:** -

#### *Article history:*

Received : July 13, 2024

Revised : September 19, 2024

Accepted : November 30, 2024

Available online : December 24, 2024

<https://doi.org/10.21098/jimf.v10i4.2270>

## **I. INTRODUCTION**

Islamic financial institutions (IFIs) have experienced substantial changes in their structure and operations in the last twenty years. As a result, it is crucial to have a comprehensive understanding especially in their risk management strategies. Shariah compliance is essential for the activities of IFIs. Managing risks connected with compliance requires ensuring that all financial operations meet the requirements of Islamic principles that forbids interest, or *Riba*, and speculative actions or *Gharar*. The key in risk management for Islamic finance is balancing financial performance with rigorous adherence to Shariah principles (Agha & Sabirzyanov, 2015).

Managing risks in line with Shariah values becomes ever more important as Islamic finance expands to be a significant part of the worldwide financial system. Studies reveal that International Financial Institutions (IFIs) encounter risks as a result of their commitment to Sharia principles, which forbid the charging of interest and speculation (Ebrahim, 2019). The rapid growth of Islamic banking has resulted in the establishment of novel financial instruments and institutional structures meant to address some issues (Errico & Sundararajan, 2002). While IFIs typically display robust risk management techniques, there is still potential for development, especially in fields such as asset liability management, liquidity, and concentration risks (Eid & Asutay, 2019). Innovations in risk management are essential for Islamic financial institutions to maintain competitiveness and resilience within the international financial system (Reno & Abdullah, 2016). To effectively manage risk in Islamic banking, a valid risk management architecture that is customized to the particular requirements of the sector must be developed, balancing form and substance (Eid & Asutay, 2019).

Risk management in Islamic finance is a multifaceted subject, covering conventional financial risks and Shariah-compliance risks (Agha & Sabirzyanov, 2015). Islamic financial institutions have the dual issue of adhering to Islamic principles while operating in an international market dominated by conventional financial institutions (Aladağ, 2023). Such a conflict needs unique risk management systems that not only handle financial performance but also ensure adherence with Shariah principles and require to balance risk-taking with wealth protection (Agha & Sabirzyanov, 2015).

Over the years, researchers have investigated various aspects related to risk management such as corporate governance, credit risk, liquidity, and the effect of macroeconomic factors on IFIs (Ghenimi, Chaibi, & Lajmi, 2020). Ahmadyan & Ghasemi Ali Abadi (2021) analyze the association between risk management and corporate governance in banks, finding that compliance with corporate governance requirements favorably influences risk management. However, they note that this effect varies between small and large banks. Furthermore, fintech innovation integration can present advantages and challenges for IFIs; fintech innovation might contribute to customer retention and efficiency in operations. However, the crucial issue at hand is to guarantee adherence to Shariah principles (Hasan et al., 2020). While conventional banks run more credit and insolvency risks, it is highlighted that Islamic banks suffer particular risks including Sharia non-compliance (Elgharbawy, 2020). Despite this difference, both banks have largely similar risk management strategies, except for changes in credit risk

analysis, which emphasizes the need for adequate risk management between Islamic and traditional financial systems (Hayek, 2016).

This research presents a mapping and bibliometric analysis of risk management studies in IFIs over the last two decades, showing the development of scholarly interest and providing a comprehensive containment of key themes, influential authors, and influential articles in this field. The bibliometric analysis uncovers valuable insights for the advancement of risk management research inside Islamic financial institutions during the past two decades. It illustrates the essential issues, significant contributors, and rising trends that have defined the field. As Islamic finance expands, knowledge acquired from this study will be crucial in guiding future studies and practices, ensuring that IFIs can effectively manage risks and comply with the principles of Shariah. It also brings several advantages that IFIs meet when seeking risk management approaches for their efficiency. In addition, this can also contribute to the development of studies in IFIs to uncover new concepts and results.

## **II. RISK IN ISLAMIC FINANCE**

Islamic financial institutions (IFIs) have emerged as a vital component of the global financial system, demanding extensive risk management frameworks that incorporate both conventional financial risks and unique Shariah compliance risks. In this section, we explore the essential elements of risk management in IFIs, emphasizing the main issues, important topics, and recent progress in the field (Errico & Sundararajan, 2002).

Risk management in Islamic finance has assumed significance since the establishment of an Islamic banking system at the beginning of the 1990s, especially in countries such as Malaysia (Sapizi et al., 2019). The rapid growth of Islamic finance from a niche industry to a mainstream financial sector has underlined the significance of understanding and working with unique risks related to Islamic financial institutions, such as risk pooling and risk sharing (Ebrahim, 2019). Islamic banks have been concentrating on applying comprehensive risk management systems to restrict losses and maintain the sustainability of their operations (Mukhlisin & Suhendri, 2018). The enhancement of Shariah fintech firms, especially those that adhere to Islamic principles, has stressed the necessity for strong risk management methods to deliver reliable and secure services to consumers (Abi Anwar et al., 2022). Besides, Islamic risk management is guided by Shariah principles, particularly wealth protection, and must balance an obligation for legitimate profit-making with risk mitigation (Agha & Sabirzyanov, 2015).

In Islamic finance, risks are classified as prohibited, needed, and acceptable, with hedging strategies being implemented with tolerable risks. In contrast, risk management is vital in Islamic banking, it requires adherence to Sharia standards, avoiding components such as Riba, Gharar, and gambling (Ahmad & Yaacob, 2012). The application of risk management in Islamic banks is frequently impacted by regulatory frameworks constructed for conventional banking (Kozarevi, Nuhanovic, & Nurikic, 2013).

Islamic banking has particular risk management issues due to its adherence to Shariah guidelines and particular financial products. Crucial challenges include

Shariah compliance risk, credit, and operational (Malim, 2015). The financing models that involve profit and loss sharing, such as Mudarabah and Musharakah, provide particular issues in risk assessment and mitigation (Al-adwan, 2014). Islamic banks in emerging markets face significant risks because of immature money markets and inadequate lender-of-last-resort capabilities (Aldoseri & Worthington, 2016). The global financial system interconnection significantly complicates risk management for Islamic banks (Malim, 2015). To resolve these issues, there is a need to improve regulations and develop new financial instruments (Errico & Sundararajan, 2002). The organization of the Islamic Financial Services Board intends to facilitate the implementation of proper risk management procedures and regulations for Islamic financial institutions.

### III. METHODOLOGY

#### 3.1. Defining the Appropriate Search Terms

The terms have been meticulously chosen to include a broad range of terminologies and abbreviations in Islamic finance, to ensure the comprehensive coverage of relevant articles. Table 1 illustrates the strategy for discovering pertinent literature on risk management in Islamic financial institutions and employing precise search criteria to ensure a thorough information recovery. The main search terms consist of ("Risk management" or "Risk management practices" or "Managing Financing Risk" or "credit risk" or "sharia\* compliant risk" or "Liquidity Risk Management") and title-abs-key ("Islamic Financial Institutions" or "Islamic bank\*" or "IBs" or "IFIs",) in the title, abstract, or key terms. The approach guarantees the comprehensive coverage of all pertinent studies.

**Table 1.**  
**Article Inclusion and Exclusion Criteria**

<b>Selections</b>	<b>Exclusion</b>	<b>Inclusion</b>
Database type: "Scopus and Web of Science"		
Date of research: "25 August 2024"		
Publications period: "over 20 years"		
Search term: "Risk Management" or "Risk Management Practices" or "Managing Financing Risk" or "Credit Risk" or "Shariah-Compliant Risk" or "Liquidity Risk Management" and title-abs-key "Islamic Financial Institutions" OR "Islamic Bank*" or "IBs" or "IFIs"		927
Category of Study: "Accounting, economics, management and Business, econometrics and finance, and social sciences"	120	807
Publication Type: "Articles and Review"	45	762
Language Screening: "documents published in English only"	7	755
Duplicate items	197	558
Unrelated items	34	524

#### 3.2. Data Collection

This study uses Scopus and Web of Science databases to gather articles on risk management in IFIs. They are the two most significant bibliographic

databases, especially for the disciplines of accounting, management, and business (Pranckutė, 2021) and are frequently utilized for bibliometric analysis and research evaluation (Chadegani et al. 2013). Using these two databases, we consider only articles published in English. Initially, a collection of 927 articles is identified. These publications are further refined by excluding 120 articles from various finance disciplines, 45 irrelevant document types, 7 non-English papers, and 34 unrelated items. Furthermore, the Zotero software is utilized to clean up the content by eliminating 197 duplicate articles. Following an extensive selection process, a total of 524 articles are found to be pertinent. This collection of papers provides a robust dataset for examination of risk management strategies in IFIs.

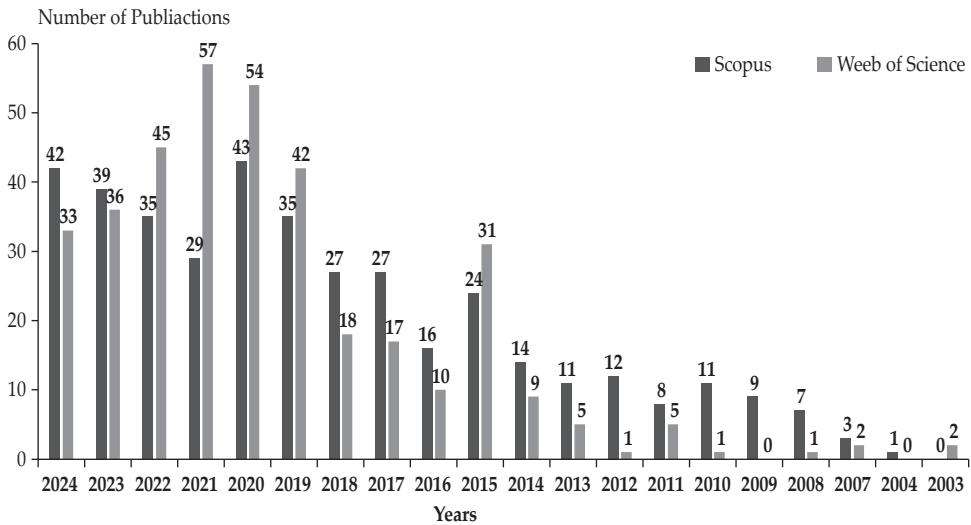
### **3.3. Bibliometric Analysis**

The present study utilizes a bibliometric analysis to assess the research landscape concerning risk management in Islamic financial institutions. The bibliometric analysis is well for quantitative examination of books, journals, or other sorts of publications. It comprises a set of tools that assess and analyze materials and data through quantitative methodologies (Goyal & Kumar, 2021). This involves utilizing performance analysis, science mapping, and network analysis techniques to determine significant patterns, prominent authors, organizations, and countries. The VOSviewer software is employed for visualizing and examining the relationships between several study units, ultimately emphasizing significant themes and patterns in publications. The performance study focuses on publishing and citation data, while scientific mapping and network analysis produce an understanding of the intellectual structure and collaboration networks within the area. This comprehensive approach captures the research dynamics and key contributions to the topic.

## **IV. RESULTS**

### **4.1. Number of Publications**

Figure 1 illustrates, from 2003 to 2024, the annual number of publications pertaining to risk management in IFIs based on Scopus and Web of Science. As may be noted from the figure, the number of publications has trended upwards with 2020 and 2021 being the most productive with 97, 86 publications respectively. During the early years, especially from 2003 to 2014, there seems to be little research effort. The increase has been notable from 2015. This increasing trend reflects the increasing awareness and interest among Islamic finance scholars about the importance of risk management.



**Figure 1.**  
**Number of Publications, 2003-2024**

#### 4.2. Influential Authors, Organizations, and Countries

Table 2 illustrates three categories of co-authorship analysis: authors, organizations, and countries. By the total number of citations (TC). Kabir M. Hassan, Ashraf Khan, and Salina Kassim are the most influential authors on risk management in IFIs, where they have total citations TC of 540, 374, and 296 respectively. On the other hand, based on the total number of publications, Kabir M., Hassan, Razali Haron, and Aisyah Abdul-Rahman are the top contributors with 11, 10, and 9 articles, respectively. The most prominent organizations are the University of New Orleans and International Islamic University Malaysia, each with 295 and 270 citations, followed by INCEIF and Universite De Tunis-El-Manar, with 199 citations. International Islamic University Malaysia has the highest number of publications, totaling 40 articles. These organizations are key participants in research in IFIs. Malaysia is the most prominent among countries, with 2091 citations and 233 articles, showing a strong research focus on Islamic financial risk management. The United States and the United Kingdom both show large contributions, having 1372 and 1269 citations respectively, proving their strong commitment to this study area.

**Table 2.**  
**The Most Influential Authors, Organizations, and Country**

TP	Author	TC	TP	Organization	TC	TP	Country	TC
11	Hassan M.	540	20	University of New Orleans	295	233	Malaysia	2091
5	Khan A.	374	40	International Islamic University Malaysia	270	44	USA	1372
5	Kassim S. H.	296	38	INCEIF	199	57	UK	1269
5	Kabir M. N.	275	16	Universite De Tunis-El-Manar	199	30	France	760
5	Tiwari A. K.	255	9	University of Louisiana System	160	66	Tunisia	653
5	Worthington A.C.	252	11	Qatar University	157	38	Australia	625
3	Masih Mansur.	204	15	Universitas Islam Indonesia	97	65	Pakistan	600
3	Paltrinieri A.	176	15	Universite De Sfax	79	131	Indonesia	589
6	Rashid M.	147	15	Universiti Putra Malaysia	65	51	Saudi Arabia	446
7	Boujelbene Y.	142	5	Abu Dhabi School of Management, Abu Dhabi, UAE	55	48	Bangladesh	389
6	Louhichi A.	142	3	Catholic University	51	48	UAE	329
4	Archer Simon.	130	3	Institute of Business Administration, Karachi	51	20	Qatar	249
10	Haron Razali.	123	3	La Trobe University	51	18	Peoples R China	244
8	Moudud-Ul-Huq.S.	117	6	Universiti Sains Islam Malaysia	50	16	Bahrain	185
2	Chaibi Hasna.	110	3	Iqra University	44	12	Egypt	161
3	Asutay M.	102	4	Damascus University, Damascus, Syrian Arab Republic	39	26	Turkey	138
4	Chowdhury M	95	3	Egyptian Knowledge Bank (EKB)	31	11	Kuwait	124
3	Rashid Abdul.	94	3	Taylor's University	17	30	Jordan	120
9	Abdulrahman, Aisyah	89	4	Universiti Utara Malaysia	15	14	Oman	74
6	Sufian F.	88	3	Indian Institute of Technology System	13	24	India	43

**4.3. Prominent Articles**

Table 3 presents prominent papers on risk management in Islamic financial institutions (IFIs) based on the number of total citations (TC) Čihák & Hesse (2008) is most-cited with 944 citations for “Islamic Banks and Financial Stability: An Empirical Analysis.” Abedifar et al. (2013) have 826 articles citing their work on “Risk in Islamic Banking, and Hassan & Aliyu (2018) have received 289 citations for “A contemporary survey of Islamic banking literature. Kabir, et al. (2015)



publish a study title “Comparative credit risk in Islamic and conventional banks” and Hassan et al. (2019) write “Liquidity risk, credit risk and stability in Islamic and conventional banks”. Both obtain 237 citations, underscoring significant contributions to bibliometric reviews and sustainability research in IFIs. In addition, Safiullah & Shamsuddin (2018) and Elamer, Ntim, & Abdou (2020) have to their credit papers on “Risk in Islamic Banking and Corporate Governance” and “Islamic Governance, National Governance, and Bank Risk Management and Disclosure in MENA Countries” with citations of 229 and 223 respectively. Kabir & Worthington (2017), with 215 citations, examine the relationship between competition, stability, and fragility: A comparative analysis of Islamic and conventional banks. the high citation numbers for these papers demonstrate their importance in enhancing the understanding of risk management strategies and their consequences for Islamic financial institutions internationally.

**Table 3.**  
**The Most Influential Articles on Risk Management in IFIs**

Author	Title	TC	STC (%)	WoSTC (%)
(Čihák & Hesse, 2008)	“Islamic banks and financial stability: an empirical analysis”	944	54	46
(Abedifar et al., 2013)	“Risk in Islamic banking”	826	53	47
(Hassan & Aliyu, 2018)	“A contemporary survey of Islamic banking literature”	289	55	45
(Kabir et al., 2015)	“Comparative credit risk in Islamic and conventional bank”	237	54	46
(Hassan et al., 2019)	“Liquidity risk, credit risk and stability in Islamic and conventional banks”	237	54	46
(Safiullah & Shamsuddin, 2018)	“Risk in Islamic banking and corporate Governance”	229	56	46
(Elamer et al., 2020)	“Islamic Governance, National Governance, and Bank Risk Management and Disclosure in MENA Countries”	223	55	45
(Kabir & Worthington, 2017)	“Competition stability/fragility’ nexus: comparative analysis of Islamic and conventional banks”	215	52	48
(Albaity, Mallek, & Noman, 2019)	“Competition and bank stability in the MENA region: The moderating effect of Islamic versus conventional banks”	213	55	45
(Ghenimi et al., 2017)	“The effects of liquidity risk and credit risk on bank stability: Evidence from the MENA region”	201	55	45
(Hasan & Dridi, 2011)	“The Effects of the Global Crisis on Islamic and conventional Banks”	197	0	100
(Daher et al., 2015)	“The unique risk exposures of Islamic banks’ capital buffers: A dynamic panel data analysis”	167	52	48
(Narayan & Phan, 2019)	“A survey of Islamic banking and finance literature: Issues, challenges, and future directions”	167	54	46



**Table 3.**  
**The Most Influential Articles on Risk Management in IFIs (Continued)**

Author	Title	TC	STC (%)	WoSTC (%)
(Siddiqui, 2008)	“Financial contracts, risk, and performance of Islamic banking”	155	58	42
(Ibrahim & Rizvi, 2018)	“Bank lending, deposits, and risk-taking in times of crisis: A panel analysis of Islamic and conventional banks”	148	56	44
(Khediri, et al., 2015)	“Islamic versus conventional banks in the GCC countries”	115	0	100
(Srairi, 2013)	“Ownership structure and risk-taking behavior in conventional and Islamic banks: Evidence for MENA countries”	111	0	100
(El-Hawary et al., 2007)	“Diversity in the regulation of Islamic financial institutions”	85	0	100
(Rashid & Jabeen, 2016)	“Analyzing performance determinants conventional versus Islamic banks in Pakistan”	83	0	100
(Abu Hussain & Al-Ajmi, 2012)	“Risk management practices of conventional and Islamic banks in Bahrain”	83	0	100

**Note(S):** TC = total number citations of Scopus and Web of Sciences databases, %STC= percentage of Scopus total citations, and %WoSTC = percentage of Web of Sciences TC

**4.4. Most Influential Journals**

Table 4 lists the most prominent journals on risk management in Islamic financial institutions as reflected by (TC). It also provides the total publications (TP), and citations in three periods (2003-2009, 2010-2016, 2017-2024), illustrating developments in research influence and significance over the years. The International Journal of Islamic and Middle Eastern Finance and Management ranks first with 509 citations, demonstrating its strong impact in the field. Research in International Business and Finance and the Journal of Islamic Accounting and Business Research have 504 and 427 citations respectively, signifying substantial scholarly impact. Furthermore, the Journal of Islamic Accounting and Business Research is the top contributed journal based on total publications (TP) with 89 publications. Other significant journals are the Pacific-Basin Finance Journal, which has 360 citations from 19 publications, the Borsa Istanbul Review, and the Journal of Risk Finance, which takes 328 and 213 citations from 8 and 4 articles, respectively. Likewise, the Journal of Risk and Financial Management has 8 publications and 176 citations. These publications are crucial in disseminating studies on risk management methods and governance in Islamic financial institutions, showing their critical role in expanding the academic discourse on this topic.

**Table 4.**  
**Most Influential Journals on Risk Management in IFIs**

Journal	TP	TC	2003-2009	2010-2016	2017-2024
International Journal of Islamic and ME Finance & Manag	54	509	2	13	38
Research in International Business & Finance	16	504	-	3	13
Journal of Islamic Accounting and Business Research	89	427	9	5	75
Pacific Basin Finance Journal	19	360	-	3	16
Borsa Istanbul Review	8	328	-	2	6
Journal of Risk Finance	4	213	1	3	-
Journal of Risk and Financial Management	11	176	-	-	11
Humanomics	5	162	4	1	-
Pacific-Basin Finance Journal	19	162	-	3	16
Managerial Finance	10	160	2	1	7
Qualitative Research in Financial Markets	10	153	-	5	5
J of International Financial Markets, Institutions & Money	8	151	-	3	5
Corporate Governance (Bingley)	5	149	-	1	4
Quarterly Review of Economics and Finance	7	140	1	-	6
Journal of Economic Cooperation and Development	4	133	1	2	1
Isra International Journal of Islamic Finance	21	101	1	2	18
Journal of Islamic Marketing	13	96	-	-	13
International Journal of Economics and Financial Issues	4	89	-	4	-
International Journal of Emerging Markets	9	62	-	-	9
Journal of Asian Finance Economics and Business	7	45	-	-	7

**Note(S):** TC = total number of citations; TP = total number of articles published.

#### 4.5. Top References

Table 5 identifies top references of articles that relate to risk management in IFIs, determined by local and global citation criteria. A paper authored by Elamer et al. (2020) titled “Islamic Governance, National Governance, and Bank Risk Management and Disclosure in MENA Countries” is the top reference with 169 local and 54 global citations. The ratio of local citations to worldwide citations is 76%, with global citations constituting 24%. This paper emphasizes the necessity of robust governance policies in the Islamic banking business, especially in the context of MENA countries, where Islamic governance principles may significantly affect national governance and risk management procedures. It highlights that Islamic banking institutions (IBIs) must improve their performance and contribute to economic development by employing effective risk management strategies (RMPs). The study identifies critical themes such as the risk management environment, rules, and procedures that are necessary to provide transparency and disclosures and consequently reduce risk. The findings imply that human capital and the conduct of banks play a significant role in managing risks effectively, demonstrating that a strong governance framework could contribute to increased financial performance and stability within the banking industry.

Study by Abedifar et al. (2013) titled “Risk in Islamic Banking” has the second most references, including 660 global and 166 local references, with 20% local

citations upon global 80% citation ratios. This study explores the risk and stable elements of Islamic banking using data from 553 banks across twenty-two nations from 1999 to 2009. The credit risk of small Islamic banks that are leveraged or situated in nations with a predominantly Muslim population is lower than that of traditional banks. Small Islamic institutions also appear to be more resilient in terms of insolvency risk. Furthermore, researchers find minimal evidence to suggest Islamic banks impose fees on their clients for providing Shariah-compliant financial products.

**Table 5.**  
**Most Influential Reference on Risk Management in IFIs**

LC	Author	Title	GC	LC/GC ratio (%)
169	(Elamer et al., 2020)	"Islamic governance national governance, and bank risk management and disclosure in MENA countries"	223	76
166	(Abedifar et al., 2013)	"Risk in Islamic banking"	826	20
91	(Čihák & Hesse, 2008)	"Islamic banks and financial stability: an empirical analysis"	944	10
78	(Ibrahim & Rizvi, 2018)	"Bank lending, deposits, and risk-taking in times of crisis: A panel analysis of Islamic and conventional banks"	148	52
66	(Albaity, Mallek, & Noman, 2019)	"Competition and bank stability in the MENA region: The moderating effect of Islamic versus conventional banks"	213	31
44	(Khediri, et al., 2015)	"Islamic versus conventional banks in the GCC countries: A comparative study using classification techniques"	115	38
43	(Ghenimi et al., 2017)	"The effects of liquidity risk and credit risk on bank stability: Evidence from the MENA region"	201	21
41	(Narayan & Phan, 2019)	"A survey of Islamic banking and finance literature: Issues, challenges, and future directions"	167	25
37	(Daher et al., 2015)	"The unique risk exposures of Islamic banks' capital buffers: A dynamic panel data analysis"	167	22
31	(Hassan et al., 2019)	"Liquidity risk, credit risk, and stability in Islamic and conventional banks"	237	13
24	(Safiullah & Shamsuddin, 2018)	"Risk in Islamic banking and corporate governance"	229	10
20	(Srairi, 2013)	"Ownership structure and risk-taking behavior in conventional and Islamic banks: Evidence for MENA countries"	111	18
18	(Hasan & Dridi, 2011)	"The Effects of the Global Crisis on Islamic and Conventional Banks: A Comparative Study"	197	9
17	(Hassan & Aliyu, 2018)	"A contemporary survey of Islamic banking literature"	289	6
16	(Kabir, et al., 2015)	"Comparative credit risk in Islamic and Conventional bank"	237	7
13	(Kabir & Worthington, 2017)	"The competition–stability/fragility' nexus: A comparative analysis of Islamic and conventional banks"	215	6

**Table 5.**  
**Most Influential Reference on Risk Management in IFIs (Continued)**

LC	Author	Title	GC	LC/GC ratio (%)
8	(El-Hawary et al., 2007)	"Diversity in the Regulation of Islamic Financial Institutions"	85	9
5	(Rashid & Jabeen, 2016)	"Analyzing Performance Determinants: Conventional versus Islamic Banks in Pakistan"	83	6
3	(Abu Hussain & Al-Ajmi, 2012)	"Risk management practices of conventional and Islamic banks in Bahrain"	83	4
0	(Siddiqui, 2008)	"Financial contracts, risk and performance of Islamic banking"	155	0

Note(s): LC local citations, GC global citations

#### 4.6. Themes and Influence Analysis of the Structure Using Bibliographic Coupling

Risk management in IFIs is organized into topic clusters using bibliographic coupling. Table 6 displays four distinct clusters, namely (i) risk exposures, governance, and credit risk management in Islamic and conventional banks, (ii) management financial stability, and performance in Islamic and conventional banks, (iii) competition, stability, and performance determinants in Islamic and conventional banks, and (iv) the impact of the global crisis and ownership structure on risk-taking in Islamic and conventional.

**Table 6.**  
**Most Influential Articles on Risk Management in IFIs**

Theme	Author	Title	TC
Risk exposures, governance, and credit risk management in Islamic and conventional banks	(Daher et al., 2015)	"The unique risk exposures of Islamic banks' capital buffers: a dynamic panel data analysis"	167
	(Elamer et al., 2020)	"Islamic governance, national governance, and bank risk management and disclosure in MENA countries"	237
	(Ibrahim & Rizvi, 2018)	"Bank lending, deposits, and risk-taking in times of crisis: A panel analysis of Islamic and conventional banks"	148
	(Kabir, et al., 2015)	"Comparative credit risk in Islamic and conventional bank"	237
	(Safiullah & Shamsuddin, 2018)	"Risk in Islamic banking and corporate governance"	229
Risk Management, Financial Stability, and Performance in Islamic and Conventional Banks	(Abedifar et al., 2013)	"Risk in Islamic banking"	826
	(Hassan et al., 2019)	"Liquidity risk, credit risk and stability in Islamic and conventional banks"	237
	(Siddiqui, 2008)	"Financial contracts, risk, and performance of Islamic banking"	155
	(Čihák & Hesse, 2008)	"Islamic Banks and Financial Stability: An Empirical Analysis"	944

**Table 6.**  
**Most Influential Articles on Risk Management in IFIs (Continued)**

Theme	Author	Title	TC
Competition, Stability, and Performance Determinants in Islamic and Conventional Banks.	(Albaity et al., 2019)	“Competition and bank stability in the MENA region: The moderating effect of Islamic versus conventional banks”	213
	(Kabir & Worthington, 2017)	“Competition stability/fragility’ nexus: comparative analysis of Islamic and conventional banks”	215
	(Khediri, et al., 2015)	“Islamic versus conventional banks in the GCC countries: A comparative study using classification techniques”	115
	(Rashid & Jabeen, 2016)	“Analyzing Performance Determinants: conventional versus Islamic Banks in Pakistan”	83
impact of the global crisis and ownership structure on risk-taking in Islamic and conventional banks	(Hasan & Dridi, 2011)	“The effects of the global crisis on Islamic and conventional banks: a comparative study”	166
	(Srairi, 2013)	“Ownership structure and risk-taking behavior in conventional and Islamic banks: Evidence for MENA countries”	111

Cluster 1 contains five articles and they are concerned with risk exposures, credit risk management, and governance in Islamic and traditional banks. “The unique risk exposures of Islamic banks’ capital buffers: a dynamic panel data analysis” by Daher et al. (2015) suggests that privately held Islamic banks, in contrast to state-owned ones, seek to protect stakeholders by autonomously alleviating the effects of transferred commercial risk via enhanced capital buffers. The relationship between equities investment risk and bank capital buffers appears to differ by district. The study by Elamer et al. (2020) indicates the relationship between “Islamic governance, national governance, and bank risk management and disclosure in MENA nations”. They discover that NGQ provides a moderating influence on the relationship between IGQ and RDPs. These outcomes are consistent across different RDP metrics and estimating techniques. The findings suggest that the quality of disclosure is contingent upon macro-social elements, including religion, which have been generally overlooked in business and society studies, hence holding significant implications for policymakers. Ibrahim & Rizvi (2018) investigate and compare “Islamic and conventional banks regarding lending, deposits, and risk management during a crisis”. The findings indicate that the financing expansion of Islamic banks surpasses the lending expansion of traditional banks throughout the financial crisis time. Nevertheless, there has been no corroboration to indicate that Islamic banks are involved in too much risk-taking during periods of stress. These outcomes enhance the evidence confirming the Islamic banking system’s contributing role in financial and economic stability.

In additional, Kabir, et al. (2015) provide “comparative credit risk in Islamic and conventional banks”. They indicate that Islamic banks have greatly reduced credit risk associated with traditional banking, as determined by distance to

default. Conversely, as anticipated, Islamic banks exhibit significantly elevated credit risk and non-performing loan ratios. These data indicate that the selected metric significantly influences the evaluation of the actual credit risk of Islamic institutions. Finally, the study of Safiullah & Shamsuddin (2018) examines risk in Islamic banking and corporate governance. The research indicates that Islamic banks have lower credit risk and insolvency, despite higher liquidity risk as compared to traditional banks, although they have similar operational risk. The findings also state that insolvency and operational risks of Islamic banks decline with an increase in SSB size and SSB members' educational qualifications, although they are enhanced with an increase in the number of prominent Shariah experts on the SSB.

In Cluster 2, which relates to risk management, financial stability, and performance in Islamic and conventional banks, we identify four papers. Abedifar et al. (2013) examines "risk in Islamic banking" and note that in particularly in Muslim-majority countries, Islamic banks have lower credit risk as compared to conventional banks. Abu Hussain & Al-Ajmi (2012) contributes a paper titled "risk management practices of conventional and Islamic banks in Bahrain". They discover that credit, liquidity, and operational risks pose the biggest challenges for both. The efficacy of risk management methods is concluded by managers' understanding of risk and risk management, with the efficiency of risk identification, risk assessment, risk monitoring, and credit risk analysis. Siddiqui (2008) study "financial contracts, risk, and performance of Islamic banking, and found". They show that Islamic banks in Pakistan engage in a restricted volume of long-term project funding, as indicated by the balance sheets and various performance indicators. Nonetheless, these banks have exhibited strong performance regarding asset and equity returns, suggesting better risk management, and have maintained sufficient liquidity. Finally, Cihák & Hesse (2008) address the link between "Islamic Banks and Financial Stability" and document several results. First, small Islamic banks generally show greater financial robustness than small conventional banks. Second, a big conventional bank is more resilient financially than a big Islamic bank. Lastly, the financial strength of small Islamic banks is generally superior to that of large Islamic banks, which might be indicative of the issues associated with credit risk management in large Islamic banks. Additionally, they observed that in MENA countries, Islamic banks have a stronger competition-fragility link than conventional banks.

Cluster 3 includes research on competition, stability, and performance determinants in Islamic and conventional banks. Albaity et al. (2019) examine "Competition and bank stability in the MENA region: the moderating effect of Islamic versus conventional banks". The study finds that banks with less competition tend to be more profitable and take on fewer credit and insolvency risks. Kabir & Worthington (2017) address "competition and bank stability in the MENA region". In their paper, the effect of market power on bank stability is larger for conventional banks. Additionally, comparing banks across quartiles of stability, banks in the median quantile have a more capacity to reduce credit risk. Khediri, et al. (2015) contribute a research titled "Islamic versus conventional banks in the GCC countries". According to their study, Islamic banks are mostly more profitable, liquid, and well-capitalized than conventional banks, with lower

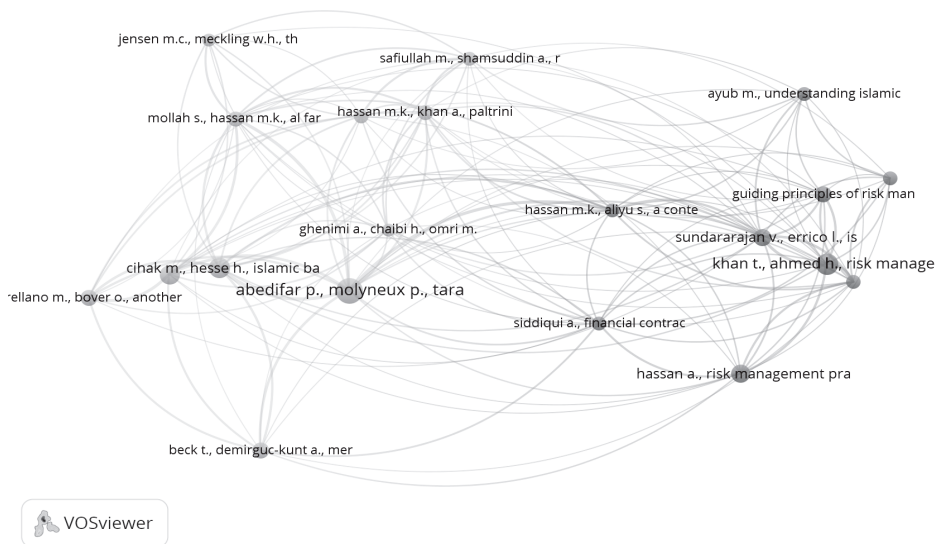
credit risk. While Islamic banks are less involved in off-balance sheet transactions, they have greater operating leverage. Credit risk, insolvency risk, operating leverage, and off-balance-sheet activity differ across the two types of banks, but profitability and liquidity do not. Rashid & Jabeen (2016) analyze “performance determinants: conventional versus Islamic banks in Pakistan” Their findings indicate that improvements in overall management techniques, as well as new standards in operational efficiency and financial risk management, are critical to improving bank performance.

Cluster 4 is on the impact of the global crisis and ownership structure on risk-taking of Islamic and conventional banks. Hasan & Dridi (2011) focuses on “the effects of the global crisis on Islamic and conventional banks”. The results from the study hint that the effects of the crisis on IBs are different from those on CBs. The characteristics of IBs’ business models assist in reducing the negative impact of the crisis on their profitability in 2008. However, weaknesses in risk management practices in some IBs result in a bigger drop in profitability in 2009. Likewise, Srairi (2013) investigates “ownership structure and risk-taking behavior in conventional and Islamic banks”. The findings indicate a negative relationship between ownership concentration and risk. They also discover that different types of shareholders have different risk attitudes. Family-owned banks are incentivized to take lower risks. Compared to other banks, state-owned banks show higher levels of risk and a significantly higher percentage of non-performing loans. The empirical findings reveal that private Islamic banks are just as stable as private conventional banks. Nevertheless, Islamic banks are less exposed to credit risk than traditional banks.

#### **4.7. Knowledge Foundations**

The method of co-citation analysis has been employed in multiple studies to examine the cognitive structure of science. The strength of this analysis lies in its ability to accurately map the structure of specialized study areas and the entire field of science (Surwase et al., 2012). It uses the determination of Semantic Similarity between the titles of co-cited papers. This measure has been shown to be useful in evaluating the similarity of co-cited articles (Yadav et al., 2021). Figure 2 shows the co-citation map of references cited at least nineteen times across the research database. The VOSviewer network visualization demonstrates the grouping and relationships of prominent authors on risk management in IFIs. The nodes reflect authors, each node size representing publishing volume or influence.





**Figure 2.**  
**Co-citation of References Cited by Articles on Risk Management**

Clusters represent related research themes in risk management in IFIs. Akkizidis I. Ayub M. Hassan A., Hassan M.K., Iqbal Z., Khan T., Siddiqui A., and Sundararajan V, designated by red nodes, are concerned with comprehending Islamic finance and its components. The green nodes focus on empirical research and theoretical models on financial stability and risk in Islamic banks, involving Beck T., Ghenimi A., Hassan M.K., Khan A., Jensen M.C. Mollah S., Hassan M.K., Al Farooque O., Mobarek A., and Safiullah M., Shamsuddin A. Lastly, The blue nodes concentrate on guiding concepts with practical strategies for risk management for Islamic financial institutions and contain Abedifar P., Molyneux P., Tarazi A., Arellano M., Bover O., Beck T., Demirguc-Kunt A., Merrouche O. Blundell R., Bond S., And Cihak M., Hesse H. Major authors are reflected by many nodes or clusters. Hassan M.K., and Beck T have made substantial contributions to Islamic finance on a variety of topics, including the theoretical, empirical, and applied elements of risk management. Considering the red cluster's emphasis on broad Islamic finance complementing the empirical and theoretical analysis of the green cluster and the blue cluster's actual risk management systems, linked clusters reflect substantial cooperation and researchers' cross-referencing.

#### 4.8. Thematic Trends

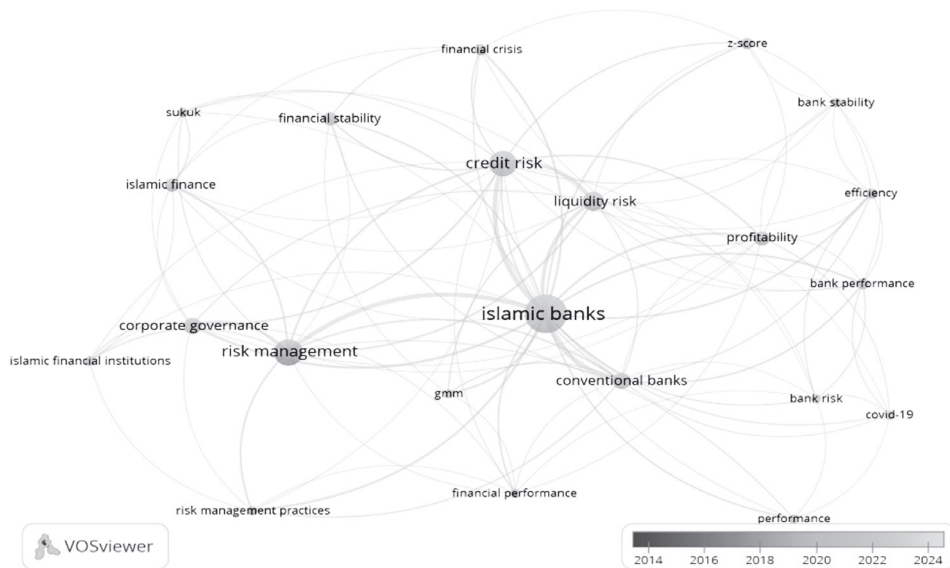
The trends of the thematic documents and keyword-based author co-citation and analysis of authors' keywords have been used for co-occurrence analysis to investigate thematic tendencies (Wang, Bu, & Huang, 2018). This section provides an analysis of topic tendencies in risk management in Islamic financial institutions. Dividing the period enhances the handling of massive amounts of data, enabling the examination of delicate relationships within extensive networks (Chen et al.,

2012). Consequently, dividing the network visualization into phases for network visualization is crucial for comprehending temporal dynamics and improving analytical insights. This methodology enables researchers to monitor changes in links and interactions over time, which is imperative for different thematic risk management tendencies in research IFIs. As a result, the study divides the network visualization into two periods: 2003-2013 and 2014-2024, to facilitate and understand the keywords used in risk management trends.



**Figure 3.**  
**Influential Topics in the Period 2003–2013**

Figure 3 above illustrates a network visualization using VOSviewer, highlighting the relationships among essential phrases linked with risk management in IFIs. The nodes show various themes, while the relationships among them show the strength of co-occurrences within the literature. The paper’s timeline is represented by a color transition from blue to yellow, which shows that blue signifies earlier research in 2003 while yellow indicates more recent studies. The period scale at the tail shows how the themes have developed over the years. beginning with research before 2006 focusing on basic risks and later studies up to 2013 emphasizing more specialized risk management strategies, other topics have emerged. These include such as credit risk, operational risk, and financial risk in IFIs. After 2014, publications in risk management have expanded dramatically in terms of the number of articles and the complexity of research issues, demonstrating a critical topic in IFIs. The influential themes are shown in Figure 4.



**Figure 4.**  
**Influential Topics in the Period 2014–2024**

Figure 4 illustrates significant trends in Islamic banking studies, with an emphasis on risk management and performance. The primary node, Islamic banks, is linked to significant themes involving risk management, credit risk, liquidity risk, and profitability. Greater nodes, such as credit risk and liquidity risk, are frequent subjects of study; however, little nodes, such as COVID-19 and Sukuk, are more recent subjects in this field. In addition, there is an obvious connection between Islamic and conventional banks, suggesting a comparative focus on the two systems, especially in terms of risk and financial performance. Important challenges such as corporate governance and financial stability are intricately linked to the entire structure of Islamic financial institutions. The color gradient at the bottom represents the study period, with dark blue for older work before 2016 on core topics such as credit risk and liquidity risk. Most of the current researches, captured by green to yellow from 2018 to 2024, focus on performance-related topics such as the effects of COVID-19 and efficiency, illustrating the changing environment for risk management considering the global pandemic. In general, the major trends in risk management within IFIs focus on sustaining stability and performance through effective governance, managing credit and liquidity risks, and ensuring compliance with regulatory frameworks. These linked themes underline the intricacy and need for comprehensive risk management measures in Islamic banking.

## V. CONCLUSION

The research on risk management in Islamic financial institutions highlights the essential requirement for a strong and Shariah-compliant risk management

structure. Over the last twenty years, there has been noteworthy progress in understanding the unique risks faced by traditional finance and IFIs. The main focus topics have included liquidity risk, credit risk, corporate governance, and the influence of macroeconomic factors. The development of fintech provides both opportunities and challenges, underscoring the need for innovation while ensuring adherence to the principles of shariah. The present study emphasizes the important themes, influential authors, and significant articles. Kabir M. Hassan and Ashraf Khan have made significant contributions, and organizations such as the University of New Orleans, International Islamic University Malaysia, and INCEIF University contribute substantially to research in this area. As for countries, Malaysia, the United States, and the United Kingdom are top contributing countries.

While the research has advanced to cover various themes under risk management, there are major issues to be addressed. These include regulatory compliance, the development of an enhanced risk management system, and the integration of innovative financial technologies. Future studies should focus on these issues with an emphasis on establishing comprehensive and adaptable risk management systems that will support sustainable development of IFIs. IFIs can strengthen their strength and retain adherence to Islamic law while achieving improved performance and stability by addressing the concerns listed above and applying insights gained from previous studies. Therefore, the current research presents a significant ground for future studies and practices, driving improvements in risk management of IFIs.

Islamic financial institutions face challenges in striking a balance between adherence and financial performance. Regulatory bodies should establish risk management frameworks that encompass both traditional financial risks and shariah-compliant risks, therefore ensuring compliance with Islamic principles. Further innovation is required in the banking industry to provide financial products that adhere to Shariah principles and simultaneously improve profitability. Implementing resilient risk management systems for handling liquidity, credit, and operational issues is of the highest priority. Financial institutions should cautiously adopt fintech solutions and collaborate with regulatory bodies to guarantee adherence to required standards. Implementing robust corporate governance practices will enhance the ability to reduce risks and provide stability, therefore enabling Islamic banks to successfully operate within global financial systems while upholding their religious responsibilities.

Additionally, the study's findings have implications for investors, shareholders, and scholars. They should gain a comprehensive understanding of the current research in this sector. By acknowledging the significant and prominent contributors to this field of study and understanding their role as essential contributors, they may apply these papers to address current industry issues. Furthermore, studies might also guide researchers to gain an understanding of gaps in the existing research and prospective study instructions, which will help them carry out future research.

The present bibliometric analysis of risk management in IFIs provides several knowledge gaps, related to factors previously unexplored in terms of their interrelationships and effects. It is important to advance and implement enhanced

risk management tools particularly designed for IFIs. These tools should contain advanced value-at-risk models and stress testing procedures that are in line with Shariah principles. Digital transformation or fintech are important to contemporary banking. We can gain valuable insights into how Islamic banks can adopt digital technologies by combining these factors with risk management, profitability, and efficiency. Additionally, enhancing the connections between governance, risk management, and credit risk with regulatory compliance may improve understanding of the influence of regulations on the operational effectiveness and financial stability of Islamic banks. Besides, connecting social accountability with financial stability, performance, and governance would help in examining how Islamic banks may strike a balance between profit and social effect.

Further studies could investigate comparative studies on risk management, and comparisons between Islamic and conventional banks might provide beneficial insights and help improve IFIs strategies. All risk management studies have focused on Southeast Asia and the Middle East regions; therefore, geographical differences could provide targeted solutions to risk management practices. Finally, the majority of studies on risk management have been published on Scopus and the Web of Science and focused on Islamic banking. Other segments are however neglected, e.g. insurance, Zakat, Waqf, and Islamic capital markets - Sukuk. Thus, studies on risk management are needed for these sectors as well.

## REFERENCES

- Abedifar, P., Molyneux, P., & Tarazi, A. (2013). Risk in Islamic banking. *Review of Finance*, 17(6), 2035-2096.
- Abi Anwar, U. A., Sakova, M., Solikin, I., & Rani, A. M. (2022). Risk management in Islamic financial technology. *JMD: Jurnal Riset Manajemen & Bisnis Dewantara*, 5(2), 67-82.
- Abu Hussain, H., & Al-Ajmi, J. (2012). Risk management practices of conventional and Islamic banks in Bahrain. *The Journal of Risk Finance*, 13(3), 215-239.
- Agha, S. E. U., & Sabirzyanov, R. (2015). Risk management in Islamic finance: An analysis from objectives of shari'ah perspective. *International Journal of Business, Economics and Law*, 7(3), 46-52.
- Ahmad, A. A., & Yaacob, S. E. (2012). The principle of risk management: Sharia perspectives. *Journal of Applied Sciences Research*, 8(7), 3335-3343.
- Ahmadyan, A., & Ghasemi Ali Abadi, M. (2021). Relationship between corporate governance and risk management. *Journal of Money and Economy*, 16(4), 447-476.
- Al-Adwan, R. N. S. (2014). Risk management in Islamic banking. *International Review of Management and Business Research*, 3(4), 1855-1861.
- Aladağ, Ö. F. (2023). International strategies of Islamic financial institutions: Current challenges and future trends. *Kocatepe İslami İlimler Dergisi*, 6(Özel Sayı), 202-216.
- Albaity, M., Mallek, R. S., & Noman, A. H. M. (2019). Competition and bank stability in the MENA region: The moderating effect of Islamic versus conventional banks. *Emerging Markets Review*, 38, 310-325.

- Aldoseri, M., & Worthington, A. C. (2016). Risk management in Islamic banking: An emerging market imperative. In Boubaker, S., Buchanan, B. and Nguyen, D. K. (Eds.), *Risk management in emerging markets* (pp. 229-252). Emerald Group Publishing Limited, Leeds. <https://doi.org/10.1108/978-1-78635-452-520161020>
- Chadegani, A. A., Salehi, H., Yunus, M. M., Farhadi, H., Fooladi, M., Farhadi, M., & Ebrahim, N. A. (2013). A comparison between two main academic literature collections: Web of Science and Scopus databases. *Asian Social Science* 9(5), 18–26.
- Chen, P., Plale, B., Cheah, Y. W., Ghoshal, D., Jensen, S., & Luo, Y. (2012, December). Visualization of network data provenance. In *2012 19th International Conference on High Performance Computing* (pp. 1-9). IEEE.
- Čihák, M., & Hesse, H. (2008). Islamic banks and financial stability: An empirical analysis. *IMF Working Paper, Monetary and Capital Markets Department*.
- Daher, H., Masih, M., & Ibrahim, M. (2015). The unique risk exposures of Islamic banks' capital buffers: A dynamic panel data analysis. *Journal of International Financial Markets, Institutions and Money*, 36, 36-52.
- Ebrahim, M. A. (2019). *Risk management in Islamic financial institutions*. Independently Published.
- Eid, W. K., & Asutay, M. (2019). *Mapping the risks and risk management practices in Islamic banking*. John Wiley & Sons.
- El-Hawary, D., Grais, W., & Iqbal, Z. (2007). Diversity in the regulation of Islamic financial institutions. *The Quarterly Review of Economics and Finance*, 46(5), 778-800.
- Elamer, A. A., Ntim, C. G., & Abdou, H. A. (2020). Islamic governance, national governance, and bank risk management and disclosure in MENA countries. *Business & Society*, 59(5), 914-955.
- Elgharabawy, A. (2020). Risk and risk management practices: A comparative study between Islamic and conventional banks in Qatar. *Journal of Islamic Accounting and Business Research*, 11(8), 1555-1581.
- Errico, L., & Sundararajan, V. (2002). Islamic financial institutions and products in the global financial system: Key issues in risk management and challenges ahead. *IMF Working Paper No. 02/192*, November 2002, Available at SSRN: <https://ssrn.com/abstract=1930788>
- Ghenimi, A., Chaibi, H., & Lajmi, A. (2020). The liquidity risk-credit risk-profitability trilogy: A comparative study between Islamic and conventional banks. *Economics Bulletin*, 40(3), 1900-1913.
- Ghenimi, A., Chaibi, H., & Omri, M. A. B. (2017). The effects of liquidity risk and credit risk on bank stability: Evidence from the MENA region. *Borsa Istanbul Review*, 17(4), 238-248.
- Goyal, K., & Kumar, S. (2021). Financial literacy: A systematic review and bibliometric analysis. *International Journal of Consumer Studies*, 45(1), 80-105.
- Hasan, M., & Dridi, J. (2011). The effects of the global crisis on Islamic and conventional banks: A comparative study. *Journal of International Commerce, Economics and Policy*, 2(2), 163-200.
- Hasan, R., Hassan, M. K., & Aliyu, S. (2020). Fintech and Islamic finance: Literature review and research agenda. *International Journal of Islamic Economics and Finance (IJIEF)*, 3(1), 75-94.



- Hassan, M. K., & Aliyu, S. (2018). A contemporary survey of Islamic banking literature. *Journal of Financial Stability*, 34, 12-43.
- Hassan, M. K., Khan, A., & Paltrinieri, A. (2019). Liquidity risk, credit risk and stability in Islamic and conventional banks. *Research in International Business and Finance*, 48, 17-31.
- Hayek, A. (2016). *An evaluation of Islamic versus conventional banks' efficiency: A global study* (Doctoral dissertation, University of Huddersfield).
- Ibrahim, M. H., & Rizvi, S. A. R. (2018). Bank lending, deposits and risk-taking in times of crisis: A panel analysis of Islamic and conventional banks. *Emerging Markets Review*, 35, 31-47.
- Kabir, M. N., & Worthington, A. C. (2017). The 'competition–stability/fragility' nexus: A comparative analysis of Islamic and conventional banks. *International Review of Financial Analysis*, 50, 111-128.
- Kabir, M. N., Worthington, A., & Gupta, R. (2015). Comparative credit risk in Islamic and conventional bank. *Pacific-Basin Finance Journal*, 34, 327-353.
- Khediri, K. B., Charfeddine, L., & Youssef, S. B. (2015). Islamic versus conventional banks in the GCC countries: A comparative study using classification techniques. *Research in International Business and Finance*, 33, 75-98.
- Kozarevic, E., Nuhanovic, S., & Nurikic, M. B. (2013). Comparative analysis of risk management in Conventional and Islamic banks: The case of Bosnia and Herzegovina. *International Business Research*, 6(5), 180-193.
- Malim, N. A. K. (2015). Islamic banking and risk management: Issues and challenges. *Journal of Islamic Banking and Finance*, October-December, 64-70.
- Mukhlisin, A., & Suhendri, A. (2018). Analisis manajemen risiko (kajian kritis terhadap perbankan syariah di era kontemporer). *An-Nisbah: Jurnal Ekonomi Syariah*, 5(1), 257-275.
- Narayan, P. K., & Phan, D. H. B. (2019). A survey of Islamic banking and finance literature: Issues, challenges and future directions. *Pacific-Basin Finance Journal*, 53, 484-496.
- Pranckutė, R. (2021). Scopus and Web of Science stands out for systematic reviews, offering comprehensive coverage across disciplines, including journals, conferences, and patents. *Publications*, 9(1), 1-59.
- Rashid, A., & Jabeen, S. (2016). Analyzing performance determinants: Conventional versus Islamic banks in Pakistan. *Borsa Istanbul Review*, 16(2), 92-107.
- Safiullah, M., & Shamsuddin, A. (2018). Risk in Islamic banking and corporate governance. *Pacific-Basin Finance Journal*, 47, 129-149.
- Sapizi, S., Zharif, M. Z., Norelmi, R., & Asyikin, N. M. (2019). Risk management in contract of Islamic trade financing. In *contemporary management and science issues in the halal industry: Proceedings of the international malaysia halal conference (IMHALAL)* (pp. 419-429). Springer Singapore.
- Siddiqui, A. (2008). Financial contracts, risk and performance of Islamic banking. *Managerial finance*, 34(10), 680-694.
- Srairi, S. (2013). Ownership structure and risk-taking behaviour in conventional and Islamic banks: Evidence for MENA countries. *Borsa Istanbul Review*, 13(4), 115-127.
- Surwase, G., Kademani, B. S., & Bhanumurthy, K. (2012). Mapping the structure and development of science using co-citation analysis. *Indian Statistical*



*Institute, New Delhi , 16-17 February 2012, National Workshop on Using Different Metrics for Accessing Research Productivity 164–74*

Wang, B., Bu, Y., & Huang, W. B. (2018). Document-and keyword-based author co-citation analysis. *Data and Information Management*, 2(2), 70-82.

Yadav, S., Kumar, R., Tiwari, N., & Bajpai, A. (2021). An effective approach to detect and prevent collaborative grayhole attack by malicious node in MANET. In *Intelligent Systems Design and Applications: 19th International Conference on Intelligent Systems Design and Applications (ISDA 2019) held December 3-5, 2019* 19 (pp. 318-335). Springer International Publishing.

This page is intentionally left blank