

Bibliometric Analysis of Financial Risk Assessment Literature in Islamic Banking and Finance: Trends, Contributors, and Global Insights

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Abstract

This paper's overarching goal is to offer a bibliometric analysis of the growth of financial risk assessment literature in Islamic banking and finance. The study primarily examined publication trends, patterns of authorship, prominent keywords and notable researchers, sources and countries in all Scopus-indexed IBF articles. The VOSviewer has been employed for the bibliometric analysis of 568 articles for the period 1993-2023. Accordingly, paper highlights risk management trends and developments in the Islamic banking, as well as top contributing journals, countries and key publications. The research conducted in this topic has a global and cooperative nature, as seen by the annual growth rate of 9.45 and involvement of academics from other countries in around 32.22% of co-authorships. Hence, by using bibliometric research to analyse pertinent literature on risk management, this study offers valuable insights into the risks that are associated with Islamic banks.

Key Words- Bibliometric Analysis, Financial Risk Assessment, Islamic Banking, Publication Trends, Global Cooperation, Risk Management Trends

Introduction

Islamic banks have been purposefully developed to function in accordance with Shariah principles and regulations over the last three decades (Choong and Liu, 2009). Islamic banking has emerged as a rapidly expanding sector within the financial industry, characterized by remarkable development in both assets and the proliferation of financial institutions. The cumulative value of assets held by Islamic financial institutions has reached a substantial amount of 1.8 trillion US dollars, reflecting the presence of 375 Islamic financial institutions operating on a worldwide scale. The Islamic banking sector has shown an annual growth rate of 17.6% throughout the period from 2009 to 2013. According to The Banker (2015) Islamic finance reserves have CAGR of 12.7% where western nations like the UK and the Switzerland are in the top 20 in terms of commodity adherence to Shariah. According to the Islamic Financial Services Board (2020), global Islamic financial services assets were US\$2.44tn in 2019. The IFSB (2020) reported an 11.4% rise in the Islamic finance industry in 2019, up from 3% in 2018. In 2019, the global Islamic banking business had US\$1.77tn in assets, up 2% from US\$1.57tn. Therefore, Islamic finance is growing and diversifying to serve more Muslims and non-Muslims and this growth goes beyond Muslim and Arab markets (Ashiq et al., 2020).

Banks are confronted with a range of potential risks that provide possible adverse implications for their operations. The topic of risk assessment and management has garnered heightened attention in the wake of the global financial crisis. Consequently, there is a growing

focus on the tools, strategies, and methodologies used by Islamic banks in their risk management practices. This has become a significant subject for debate. According to Yoe (2019), risk is the primary source of uncertainty within the banking industry. In order to effectively make decisions and attain future goals, it is essential for Islamic banks to accurately identify, define, manage, and mitigate risk, as emphasized by Abdel-Basset et al. (2019). The complexities and evolution of risks in Islamic modes of financing provide challenges for Islamic banks, making risk mitigation a tough task for several reasons. Islamic banks encounter supplementary risks as a result of the inherent structure of their balance sheet and adherence to shari'a principles. The lack of access to financial instruments is a significant obstacle for Islamic banks in effectively managing market risks, in contrast to conventional banks. The scholarly literature has extensively examined the topic of risk assessment in Islamic financial institutions. This area of study is crucial as it has the potential to significantly influence the performance of the banking sector. Given the presence of various risks and potential catastrophic events, it is imperative to carefully consider risk assessment in order to mitigate any negative consequences (Mohammed & Knapkova, 2016).

The impact of risk management concerns on public policy is now exerting a substantial influence. This field of management stands out from others due to its distinct focus on the implications of uncertainty for organizational goals (Pojasek, 2017). Accordingly, IBF system extends beyond the realm of banking, including capital production, capital markets, and many forms of financial intermediation (Ashiq et al., 2020) and can be regarded as a component of social finance (Biancone and Radwan, 2019) where it has significant consequences in relation to ethics and social purposes (Hassan et al., 2008). Therefore, risk assessment and management in IBF is of the keen importance based on which the greater amount of research literature has been published every year and it motivates the article to explore these trends bibliometrically. The significance of this article lies in the necessity to periodically assess risk management practices within the Islamic banking and finance sector. This is due to the continuous evolution of risk management practices, which is influenced by the incorporation of intricate business models, heightened risk appetite, and the implementation of novel regulatory mandates. This article aims to conduct a bibliometric analysis of the academic literature on risk assessment and management in Islamic banking and finance during the last three decades, using the Scopus database.

Methodology

This section presents the bibliometric analysis of the financial risk management domain. In the field of scientometrics, bibliometrics pertains to the statistical examination of various forms of publications, such as books, articles, and other related materials (Bellis, 2009). Accordingly, it facilitates the pursuit of ambitious retrospectives in the field of Islamic banking and finance research (Ashiq, 2020). The objective of this methodology is to identify all references pertaining to financial risk assessment and management in Islamic banking and finance inside the Scopus database. In accordance with the research conducted by Boyack et al. (2018), the use of Scopus was deemed appropriate due to the presence of a shared dataset between Scopus and Web of Science. Accordingly, 568 scholarly contributions were identified and findings include a temporal

scope of articles spanning from 1993 to 2023. In bibliometric analysis of study, it applied the blend of search terms as: Islamic bank AND (financial risk management OR financial risk indicators OR Islamic bank financial risk OR financial risk instruments OR financial risk assessment). The study utilized popular and widely-used tools such as RStudio, VOS viewer and Excel. These tools are renowned for their effectiveness in conducting bibliometric studies (Cortés-Sánchez, 2020; Cortés-Sánchez, 2019). In the sense, study has used the bibliometric library in R which complemented the VOSviewer output. VOSviewer has been shown its significant use in facilitating diverse investigations, including co-citation network analysis, bibliographic coupling analysis, and co-occurrence analysis. The aforementioned analyses facilitated the identification and examination of the primary themes and clusters evident in the collected research articles. VOSviewer is generally acknowledged for its adeptness in cartography and networking analysis, and it shown notable use in facilitating content analysis for our research. Using these methodologies, we effectively applied filters to the dataset and retrieved pertinent insights pertaining to the predominant research papers within the realm of financial risk assessment and management in the context of Islamic banking and finance. Table 1 provides a comprehensive overview of the criteria;

Table 1: Inclusion/Exclusion

Criteria	Specified Criteria
Inclusion	Literature and conferences proceedings/books that address the financial risk assessment of Islamic Banks around the world. Studies available from 1993 onwards Primary studies and secondary studies
Exclusion	Studies stated in a language other than English Data from magazines, newspapers, thesis, reports Studies conducted in other than financial sector like education, manufacturing, Studies that merged big data analytics and other technologies

Source: Authors' calculation

Results and Discussions

Bibliometric Analysis

The bibliometric analysis of studies is conducted on the studies that have discussed the existing rating methods and their limitations in assessing the prevailing risks regarding the IBF. The results of the bibliometric analysis include several figures which are as under:

Notable keywords

It is fascinating to note that "banking" is the word that happens the most frequently with 23 different occurrences when looking at specific phrases and the number of times they are used. When doing so, it is important to note that "banking" is the term that occurs the most often. Because of this, the articles' major focus is on the processes involved in banking as well as commercial activity. Other words that were often used include "Islamism" and "risk assessment,"

which demonstrates the prominence of Islamic finance and risk management in the publications that were reviewed. In addition, words such as "financial market," "financial system," and "commerce" highlight the comprehensive nature of the coverage provided for a wide range of economic and financial themes. Accordingly, the figure 1 is depicting the keywords cloud chart.

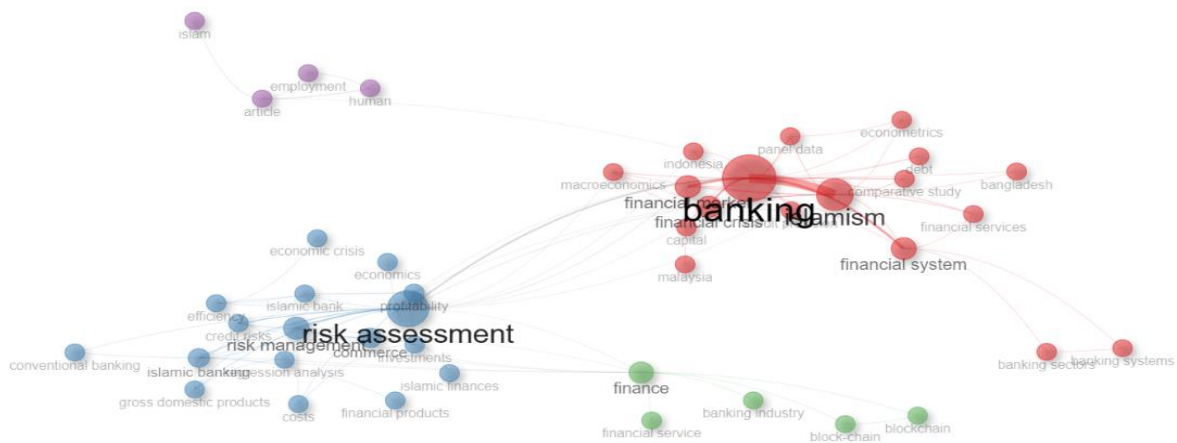
Figure.1: Keywords Cloud Chart



Source: Author Compilation

Accordingly, the figure 2 is depicting the cluster diagram of keywords.

Figure.2: Cluster diagram of key words



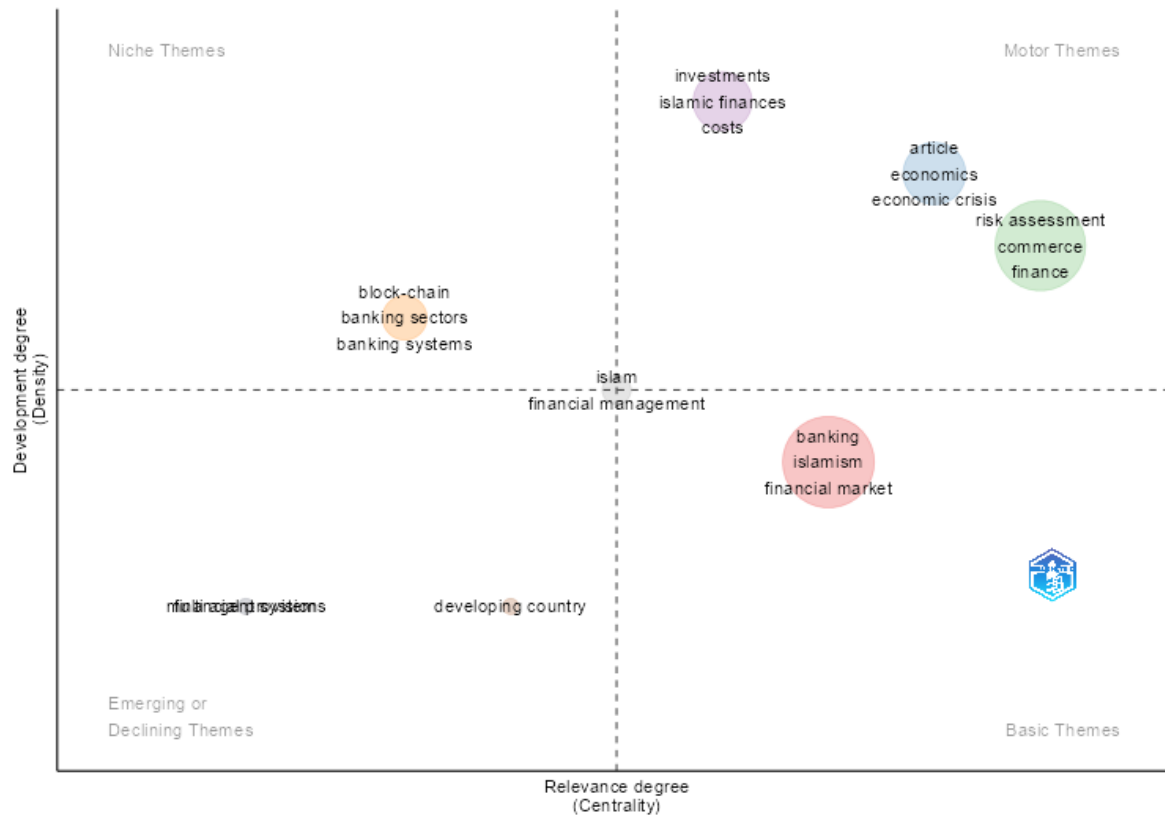
Source: Author Compilation

The data shown here depicts network research of several nodes situated in diverse clusters, with the major focus being given on qualities such as betweenness, closeness, and PageRank. The study was carried out using graph theory. The node with the label "banking" stands out in cluster 1 because it has the highest betweenness score of 294.0611851, making it the most connected node

in that cluster. This score suggests that the node in question plays a significant part in the cluster's overall effort to connect many other nodes that are included within it. The node that is labelled "Islamism" has a betweenness score that is 65.36635567, which underlines its significance in the network. In a similar vein, the node that is labelled "extremism" has a betweenness value that is quite high. Other nodes including "financial market," "financial system," and "financial crisis" also have high betweenness scores, which shows that these nodes play an essential role in the information flow throughout the data. Moving on to the closeness scores, the node "banking" has the highest value of 0.012195122, which indicates that it is placed the closest to other nodes that are included inside the cluster. The closeness scores of nodes with names like "risk assessment" and "Islamism" are likewise fairly high, which suggests that these nodes have a considerable level of connection and effect. The node known as "banking" has the highest PageRank score of 0.105698821, which reflects its popularity and significance in the network. The strong PageRank scores that are shown by nodes such as "risk assessment" and "financial market" illustrate the significance of these nodes within the structure of the network. In cluster 2, the node "risk assessment" emerges as a central node with the highest betweenness score of 506.5326743, highlighting its critical role in joining other nodes within the cluster. This score reflects the node's importance in linking other nodes within the cluster. This score shows the significance of the node's part in the cluster's overall connectivity to other nodes in the cluster. In addition, nodes in the network that have notable betweenness scores, such as "Islamic banking," "risk management," and "investments," draw attention to the influence and centrality of the respective nodes in the network.

The "risk assessment" node has the greatest value of 0.013888889 for the closeness scores, which shows that it is positioned near the other nodes that make up the cluster. Moving on to the next section distance scores, the "risk assessment" node has the highest value of 0.013888889 for the distance scores. Nodes with names such as "commerce" and "Islamic banking" also have proximity scores that are relatively high, showing that they have a large level of connection and effect thanks to their respective spheres of influence. The fact that the node titled "risk assessment" has a considerable value of 0.088617439 illustrates both its popularity and the relevance it has inside the network. PageRank is a measure of link popularity and importance. The prominence of a node within a network structure may be determined by the PageRank value of that node. Nodes with high PageRank values, such as "risk management" and "investments," are examples. Both the nodes that are labelled "finance" have high PageRank scores, which is evidence of the significance and popularity of the nodes within their respective clusters. These values are represented, respectively, in clusters 3 and 4, as seen in figure 3.

Figure.2: Centrality vs. density of keywords

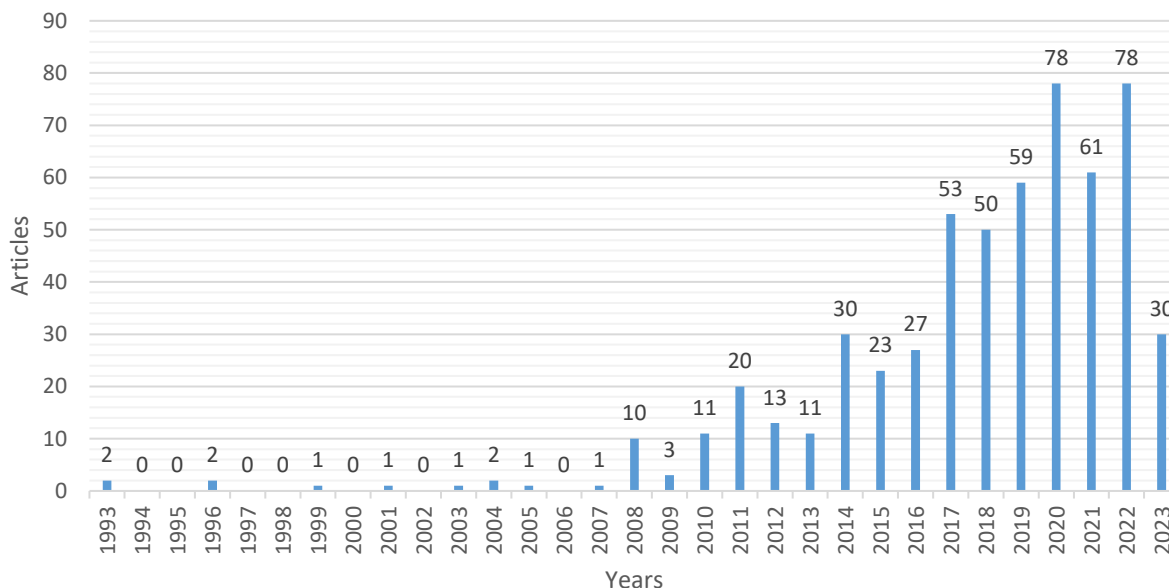


Source: Author Compilation

Notable trend of scientific publications

The first examination pertains to the logical progression of publications focused on the evaluation of financial risk. The total number of articles that have been published over the time period that the research was based on (1993-2023) is shown in Figure 4.4. It is evident that there was an exponential growth in the number of studies around the year 2010, as shown by the fact that the total number of publications that were created over the course of the 31 years came to a total of 568. During this specific historical period, nations all across the globe were struggling mightily economically. As a direct consequence of this, a synopsis of the SCOPUS-based bibliometric analysis that was carried out may be found in the following table 2.

Figure.4: No. of Publications over the period of 1993 - 2023



The comprehension of the dataset has been taken to a more advanced level as a direct result of the supplementary information that was extracted through Scopus. The profile of the data set is discussed in table 4.1. These statistics cover a period of 31 years, beginning in 1993 and continuing through 2023. The information was obtained in the form of articles, books, and other resources from 259 distinct sources. There are 568 papers in all, representing an increase of 9.45% on a yearly basis on average during the last several years. This brings the total number up to this point. It may be deduced from the fact that the average age of the papers is 5.21 years that the majority of the research was published in more recent times. According to the findings of the meta-analysis, these papers did provide a major addition to the area of research. This is shown by the fact that each document has received an average of 11.81 citations, which demonstrates how important this contribution was. In this respect, Figure 4 provides a visual representation of the summary of the chosen research.

Table.2: The summary of bibliometric analysis based on SCOPUS

Time period	All years	7,662
Keyword	“Islamic finance“or “Islamic bank”	6,037
Document type	Total Studies	593
Language	Published Articles	330
Source type	Book chapters	332
Source: SCOPUS	Conference papers	281
	Reviews	89
	Books	7,562
	Other items	6,387
	English	

	Journal	
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Source: Author Compilation

Figure.5: Summary of Selected Studies



Source: Author's Compilation

The additional information gained from 343 distinct Keywords plus (ID) and 1230 Author's Keywords (DE) contained in the dataset was used to get deeper comprehension of the types of topics that are covered in the individual articles. The fact that 1164 distinct individuals' work has been included in the research is representative of the enormous number of people who have contributed to the research area. It is interesting to notice that only 103 of the papers were written by a single author; yet, the average number of co-authors per document was 2.59, which indicates that academics worked together on a considerable level. The fact that about 32.22% of co-authorships include ties with people from other nations is illustrative of the fact that the research is conducted on a worldwide basis.

Notable publishing sources

Consequently, the table 3 illustrates the Journals in number of publications for the period 1993-2023. It reveals that the "Journal of Islamic and Middle Eastern Finance and Management" has the highest number of publications, which is 230, whereas the "Humanities and Social Sciences Reviews" has the lowest number of publications, which is 44. The table also reveals that the

"Journal of Islamic and Middle Eastern Finance and Management" has the highest number of publications.

Table.3: Journal names with number of publications

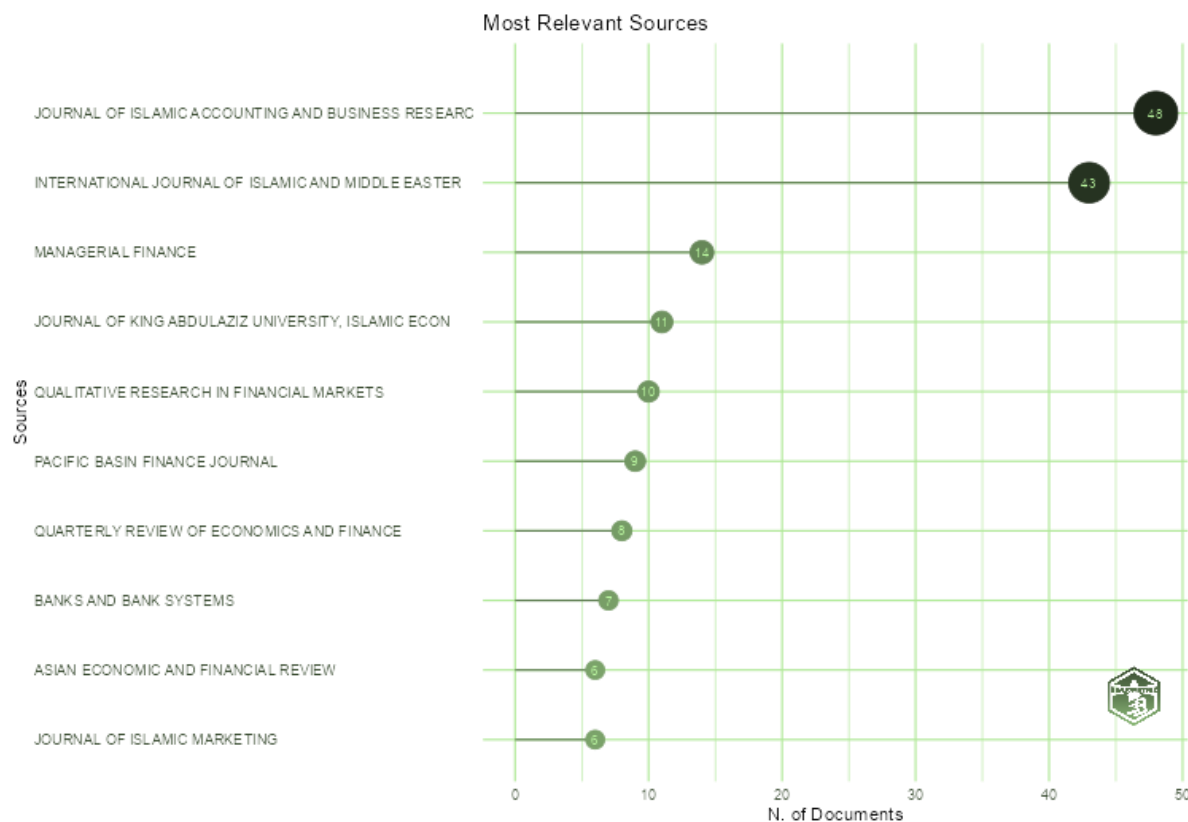
Journal Names	Articles
"International Journal of Islamic and Middle Eastern Finance and Management"	230
"Journal of Islamic Accounting and Business Research"	224
"Journal of Islamic Marketing"	175
"Journal of King Abdul-Aziz University Islamic Economics"	126
"International Journal of Innovation Creativity and Change"	92
"International Journal of Bank Marketing"	91
"Humanomics"	88
"Pacific Basin Finance Journal"	79
"Banks and Bank Systems"	77
"Research in International Business and Finance"	68
"Arab Law Quarterly"	66
"ISRA International Journal of Islamic Finance"	66
"International Journal of Economics and Financial Issues"	57
"Al Shajarah"	56
"International Journal of Applied Business and Economic Research"	56
"Journal of Islamic Economics Banking and Finance"	53
"Advanced Science Letters"	52
"International Journal of Supply Chain Management"	52
"International Journal of Economic Research"	51
"Journal Pengurusan"	51
"Journal of Business Ethics"	50
"Qualitative Research in Financial Markets"	49
"Academy of Accounting and Financial Studies Journal"	48
"Managerial Finance"	48
"Borsa Istanbul Review"	46
"Emerging Markets Finance and Trade"	44
"Sustainability Switzerland"	43
"International Journal of Psychosocial Rehabilitation"	42
"Humanities and Social Sciences Reviews"	41

Source: SCOPUS

Top publishing sources

Figure 6 displays the ten most prominent publishing sources that have published articles pertaining to financial risk management during the 1993-2023.

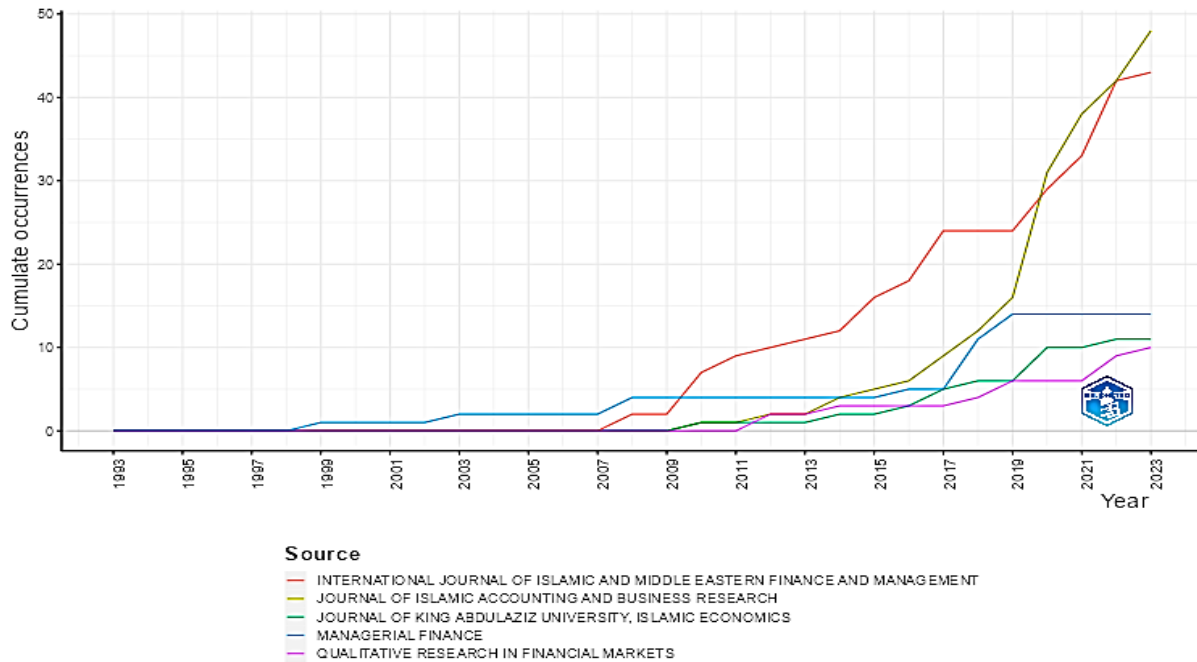
Figure 6: The list of journals, which published most articles



Source: Author Compilation

The illustrious publications from renowned journals such as "the Journal of Islamic Accounting and Business Research, the International Journal of Islamic and Middle Eastern Finance and Management, Managerial Finance, the Journal of King Abdul-Aziz University, Islamic Economics, and a variety of other periodicals" are included in the data presented in figure 4.6. In addition, the data also include a wide range of other periodicals. These publications include academic research and analysis on a wide variety of subjects, including Islamic banking and finance, investments that are in accordance with Sharia law, Islamic accounting standards, ethical considerations in the operations of Islamic companies, and Islamic economics as a larger area of study. The inclusion of conference proceedings gives the appearance that the list also contains current research that was presented at relevant academic conferences. This is because the impression is created by the inclusion of conference proceedings. These materials provide very significant insights into not just the theoretical but also the practical elements of Islamic finance, as well as Islamic finance's influence on the global financial system as a whole. Figure 7, on the other hand, depicts the development of the source's output through time.

Figure 7: No of papers produced in each journal over time

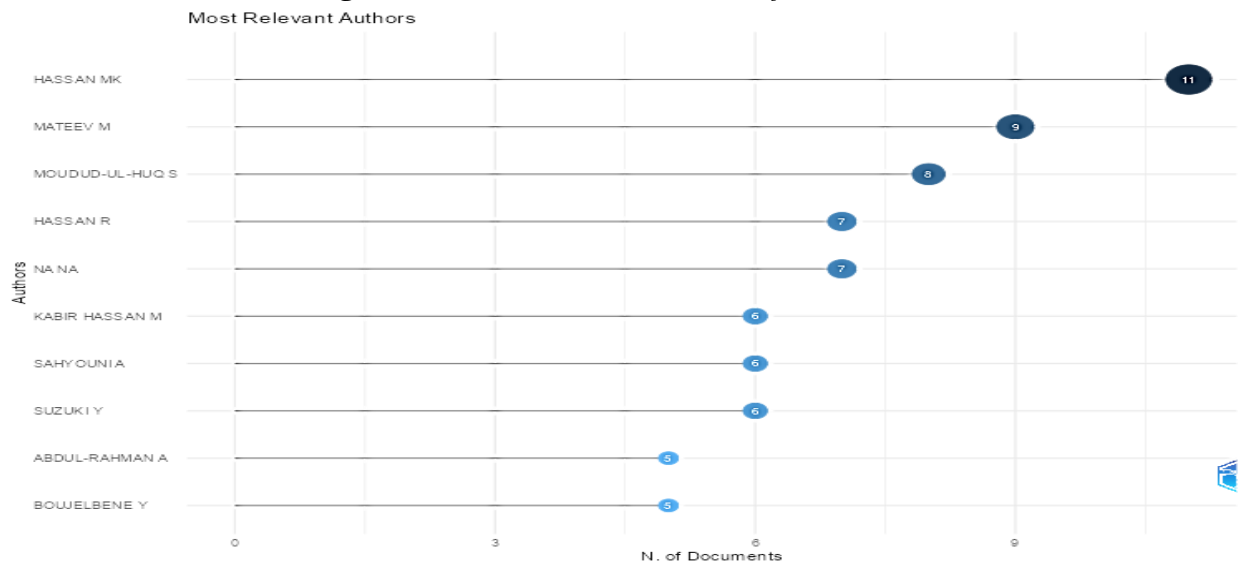


Source: Author Compilation

Notable Affiliations

As a result, the list of authors, the overall fractionalized value of their articles, and the number of publications that each author had written are shown in figure 4.8. An illustration of some of the conclusions that may be drawn from this data is provided in the following example. According to the available information, "HASSAN MK" has authored 11 pieces of writing, "MATEEV M" has written 9, and "MOUDUD-UL-HUQ S" has written 8 articles. During the course of their respective careers, each of these three writers has contributed to a considerable number of articles.

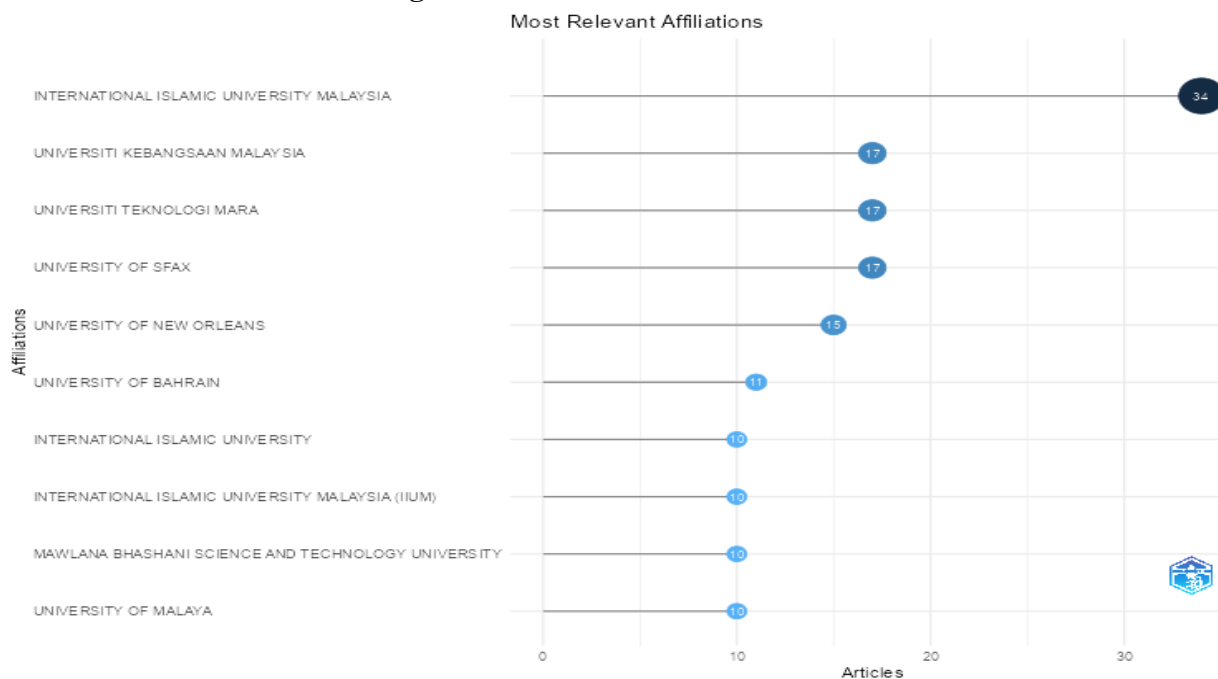
Figure 8: The number of articles by affiliations



Source: Author Compilation

The fractionalized figures represent each author's average contribution to the entire, and they are shown in descending order. For example, "HASSAN MK" has a fractionalized value of 3.25, which implies that on average, each of their articles adds 3.25 to the overall count. This number is derived from the fractionalization of the string. This is evident when one examines the value that is assigned to "HASSAN MK." It is essential to take into consideration the fact that the fractionalized values of certain authors are more than 1, which implies that these authors have made additional contributions to articles that were produced by other authors. For example, "GUP BE" has a fractionalized score of 3, which shows that they have collaborated with other authors and contributed significantly to those researches.

Figure.9: Most Relevant affiliations.

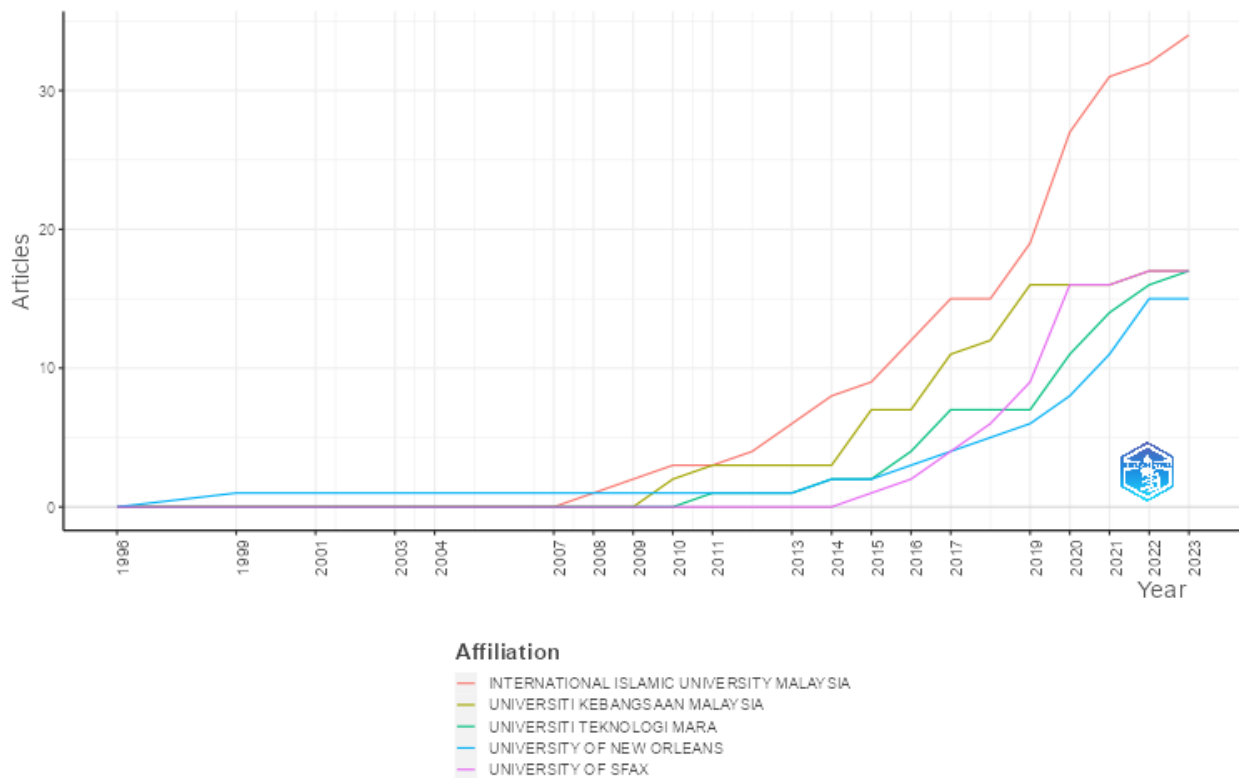


Source: Author Compilation

Figure no. 9 contains information on a range of affiliations, including the total number of publications associated to each affiliation as well as other characteristics. Some inferences have been made from this data which are: The INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA has a total of 34 articles, which places it in the position of having the most contributions overall. Other Malaysian educational establishments including "UNIVERSITI KEBANGSAAN MALAYSIA," "UNIVERSITI TEKNOLOGI MARA," "UNIVERSITI MALAYA," and "UNIVERSITI SAINS ISLAM MALAYSIA" also have a significant number of articles associated. The University of New Orleans and the University of Sfax have a combined total of 15 articles, which positions them as the second and third highest affiliations in terms of the total number of publications. Both universities are based in the United States.

Additional educational institutions including the "University of Bahrain, King Abdul-Aziz University, Qatar University, and the Abu Dhabi School of Management" have also made substantial contributions. The number of articles that each of these educational institutions has produced ranges from eight to eleven in total, making the total number of articles produced by all of these educational institutions a total of twenty-one. The list contains links to a wide variety of educational institutions, including universities and other kinds of establishments, originating in a number of nations located all over the world. "Malaysia, Tunisia, the United States of America, Bahrain, the United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, Indonesia, and Australia" are some of the countries that fall within this category.

Figure 10: Affiliations production over time



Source: Author Compilation

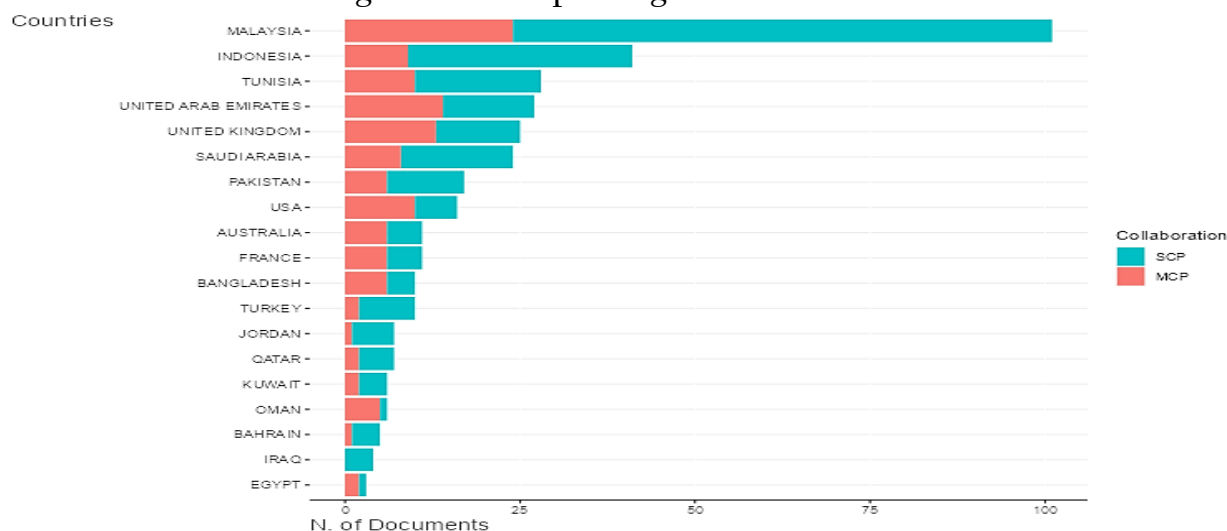
Figure 10 explains the total number of articles that are connected to certain links, and it is broken down by year. The research output that has been generated by a variety of institutions over the course of the years is illuminated by a number of different patterns; some of these institutions have had steady growth, while others have experienced fluctuating degrees of publishing activities in the area. The University of New Orleans has maintained a consistent presence in the publishing of articles throughout the course of the previous two decades, starting with a single article in the year 1999 and working its way up to this point. The International Islamic University of Malaysia (IIUM) has also been actively contributing to research, and the number of papers that it has

generated has gradually increased from one in 2008 to twenty-four in 2023. In 2023, the number of publications that it will have created will be thirty-four. The publishing production of University Kebangsaan Malaysia has been rather stable over the course of the previous few years, as seen by the fact that the school produced 17 articles in both 2022 and 2023. The University of Sfax in Tunisia got off to a sluggish start, as it did not publish its first article until the year 2015; nevertheless, it has showed tremendous progress, as it produced 17 publications in 2023.

Notable Countries

In terms of the total number of articles that have been published, Malaysia is in first place among the countries that have been taken into consideration because it has produced a total of 101 articles. This puts Malaysia in the lead among the countries that have been taken into consideration the financial risk assessment of Islamic banks. The Self-Citation Percentage (SCP) for Malaysia is 77, which suggests that a large amount of these articles incorporate references to the author's own past work. 101 different researches were found in total throughout the search from Malaysia. This pattern of conduct is referred to as self-citation is the practice of authors referring to their own previously published work inside a later piece of writing.

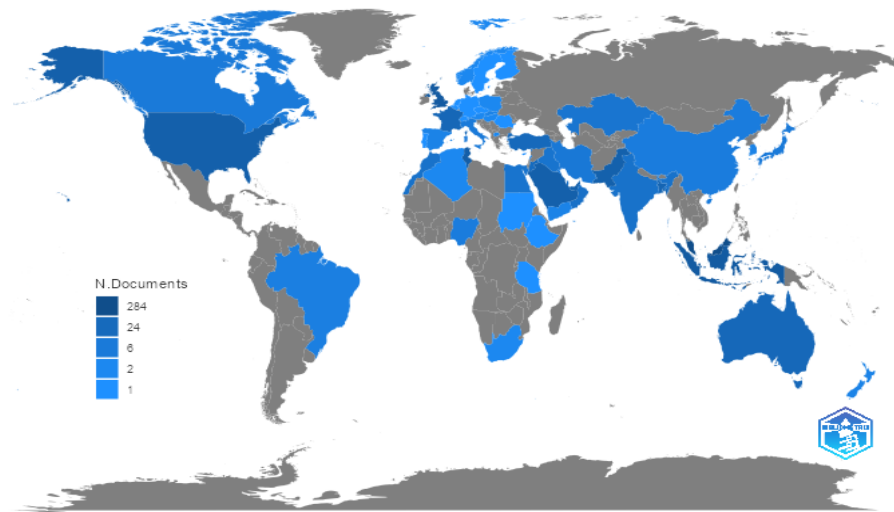
Figure II: Corresponding authors' countries



Source: Author Compilation

The Multiple Nation Publication (MCP) score for Malaysia is 24, which implies that 24 of the 101 articles have been created by authors from more than one country. The value is based on the number of articles written by authors from different countries. The MCP Ratio column displays the percentage of a nation's total publishing output that is made up of works originating from more than one country. Countries where more than one language is spoken are included in this column. The MCP Ratio for Malaysia is 0.2376, which shows that around 24% of the articles are the product of collaborative work by academics from several different countries.

Figure.12: Country scientific production



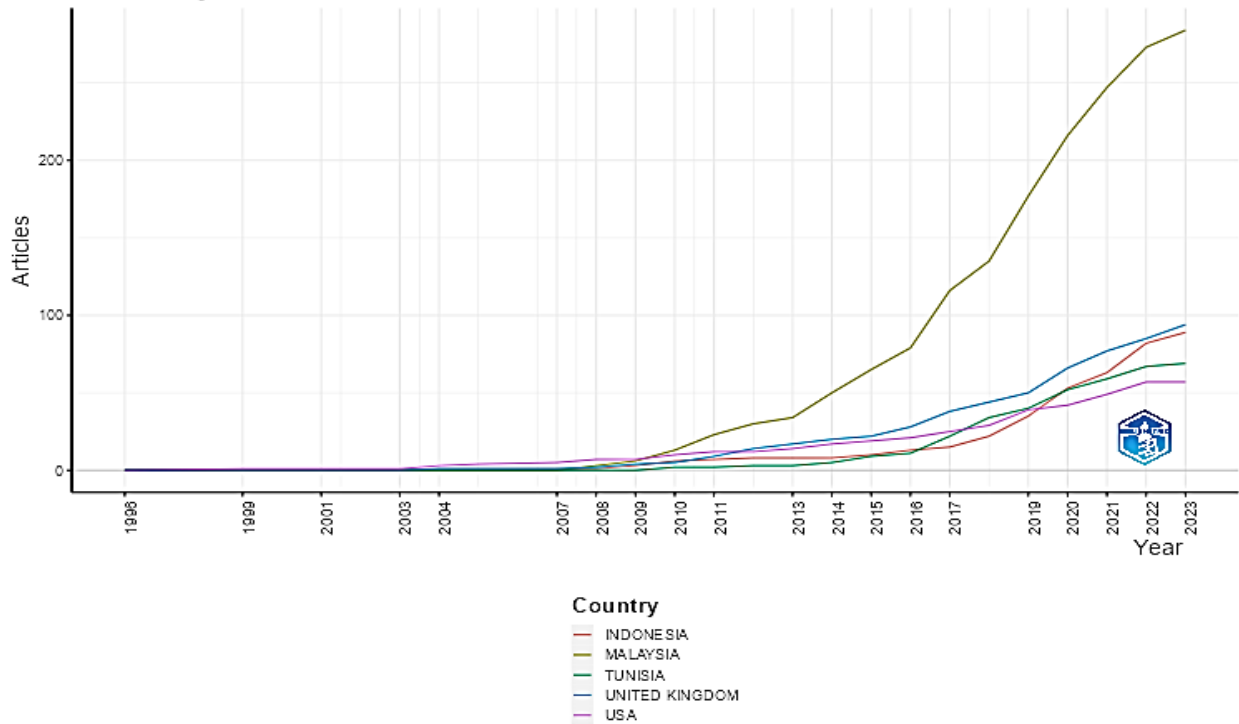
Source: Author Compilation

The frequency offers a rough approximation of the total number of publications that are generated in a certain nation or area. The information that was presented allows for the formation of a number of significant hypotheses and conclusions, which are outlined in the following paragraphs. The fact that Malaysia has the greatest publishing frequency in the world, with a total of 284 articles, illustrates that the country is responsible for a large fraction of the entire quantity of research done around the globe. The United Kingdom (UK) is in second place with 94 articles, followed by Indonesia (89), and Tunisia (69), in terms of the number of times each country publishes. Indonesia is in the lead with 89 publications. This indicates that academic institutions in the United States of America (USA) generate a substantial volume of research. The publication frequency for the USA is 57. The Journal of the American Statistical Association is the source for this statistic that was produced from it.

This suggests that educational institutions in the United States are responsible for the production of a significant quantity of research. It is especially interesting to think about the high publication rates in Saudi Arabia and the United Arab Emirates (UAE), which come in at 55 and 54 percent, respectively. These numbers are a testament to the countries' thriving literary scenes. Other countries that have a high number of publications are Pakistan (with 53 publications), Bangladesh (with 38 publications), France (31 publications), and Australia (with 28 publications). Pakistan has the highest number of publications among these four countries. Pakistan is responsible for the production of the biggest number of books and other types of publications. It is essential to take into consideration the fact that the frequency of publishing in certain countries is lower than the average, which demonstrates that some regions produce a comparatively lesser quantity of research overall. This information can be found in the table below. Based on this data, it is prudent to take into consideration the fact that the number of publications produced in particular nations is much lower than the global average. Countries such

as "Brazil, Lebanon, New Zealand, Slovakia, and South Korea", for example, publish anywhere from once per year up to four times per year. Other countries publish less often. The number of publications from other nations is lower.

Figure 13: Country-wise publications



Source: Author Compilation

The number of papers that were distributed to the public in certain years in the nations of the United States of America, Indonesia, the United Kingdom, and Malaysia. The numbers shed some intriguing new light on the banking and financial systems of a range of countries and give some fascinating views on those institutions. The United Kingdom, Indonesia, and the United States of America will serve as the primary areas of emphasis throughout this analysis. Concerning the total number of articles that have been published, there has been a discernible trend toward a diversity of patterns throughout different countries. This may be seen in terms of the overall number of articles. There was a continuous increase in the number of articles that were published in the United States between the years 1996 and 2023, which is suggestive of a developing interest in financial assessments for Islamic banking. The similar pattern was seen in Indonesia, where the number of articles began to steadily increase in 2004 and continued to do so until 2023, when it reached its greatest peak. In addition, the number of papers that are published each year in the United Kingdom has been consistently increasing over the course of time, which is indicative of the significance of financial research in that country.

Countries	Publications	Countries	Publications
Malaysia	2,327	Turkiye	196
Indonesia	818	France	193
UK	804	China	162
USA	699	Jordan	141
Australia	403	Bahrain	137
KSA	394	Bangladesh	136
Pakistan	346	Italy	125
UAE	241	Iran	111
India	229	Canada	107
Tunisia	208	Qatar	99

Table 4: Country papers production in IBF

Source: Author Compilation

Additionally, it is important to take notice of the fact that many research articles have been produced at western institutions such as those located in the United Kingdom (804), the United States (699), and Australia (403) correspondingly. This is because these countries are home to a significant number of western academic institutions.

5. Discussion

The data analyzed were from 259 different sources and covered a wide range of topics, including financial risk assessment of Islamic banking, Sharia-compliant investments, and Islamic economics. The analysis revealed that the research output in this field has been steadily increasing over the years, with an average yearly growth rate of 9.45%. The average age of the articles was relatively recent at 5.21 years, indicating a focus on recent research trends. Collaboration among researchers was evident, with an average of 2.59 co-authors per document, and about 32.22% of co-authorships involved researchers from different countries, highlighting the global nature of the research. The study also identified influential authors and affiliations. The International Islamic University Malaysia had the most contributions overall, followed by several other Malaysian educational institutions. Additionally, universities from various countries, including the United States, Tunisia, and Bahrain, made significant contributions. Frequency analysis revealed that Malaysia had the highest publication frequency, followed by the United Kingdom, Indonesia, and Tunisia. Western institutions, especially in the United Kingdom, the United States, and Australia, contributed significantly to the research output. The study used network analysis based on graph theory to identify central nodes within the dataset. Nodes related to "banking," "Islamism," "risk assessment," "financial market," and "financial system" stood out as essential and highly connected elements in the network.

Overall, the study provided valuable insights into the research trends and collaborations in Islamic banking risk management, highlighting the significance of contributions from various countries and the global nature of research in this field. This study has conducted the bibliometric analysis on the studies that have discussed the existing rating methods and their limitations in assessing the prevailing risks. The research published between 1993 and 2023 chosen for the

study, where it can be seen that around 2010, there was an exponential increase in these studies. This was the time period when the world was experiencing financial crises. The information was obtained in the form of articles, books, and other resources from 259 distinct sources and 568 papers altogether. Key findings of the study indicates that research output in this field has been steadily increasing, with an average yearly growth rate of 9.45%. The average age of analyzed articles was relatively recent at 5.21 years, reflecting a focus on contemporary research trends and up-to-date information. Collaboration among researchers was evident, with an average of 2.59 co-authors per document. Approximately 32.22% of co-authorships involved researchers from different countries, illustrating the global and collaborative nature of research in this field. The International Islamic University Malaysia emerged as the top contributor, with significant contributions from other Malaysian educational institutions. Additionally, universities from various countries, including the United States, Tunisia, and Bahrain, made substantial contributions. Malaysia had the highest publication frequency, followed by the United Kingdom, Indonesia, and Tunisia. Western institutions, particularly in the United Kingdom, the United States, and Australia, played a significant role in contributing to research output. The study used network analysis based on graph theory to identify central nodes within the dataset. Nodes related to "banking," "Islamism," "risk assessment," "financial market," and "financial system" were identified as essential and highly connected elements in the network.

6. Conclusion and Recommendations

Using data from Scopus, this research aims to give a bibliometric analysis of the evolution of financial risk assessment and management literature in Islamic banking and finance from 1993 to 2023. Accordingly, the study examined annual patterns, publication categories, disciplinary domains, influential journals, prominent organisations, and countries within the Scopus database. The bibliometric analysis provided an overview of current advancements and patterns in the field of risk management in the Islamic banking sector. It also identified the prominent organisations and countries that have made significant contributions in this area, along with the notable journals that have published research in this domain. This review offered valuable insights into the risk patterns associated with Islamic business and finance industry by utilising pertinent literature on the topic of risk management, supplemented by a bibliometric analysis.

In summary, the study's findings offer valuable insights for policymakers to strengthen risk management practices, promote collaboration, and enhance the regulatory framework within the Islamic banking and finance industry. These measures can contribute to the sector's stability and long-term growth while mitigating potential risks. The data was collected for 1993 - 2023 as the first publication in the research area found in 1993. During a period of 33 years, a cumulative number of 568 articles have been disseminated, demonstrating a yearly expansion rate of 9.45 percent. Significantly, there has been a notable rise seen during the last decade. The bibliometric analysis has shown that scholarly literature on International Business Finance (IBF) has been widely distributed over a broad selection of 27 academic periodicals. The International Journal of Islamic and Middle Eastern Finance and Management has gained significant popularity as a

prominent journal within this particular academic domain. The extent of cooperation among authors included a collective of 19 nations, with Malaysia emerging as the most prominent participant. The researchers involved in joint endeavours had a mean of 2.59 co-authors per document. The research undertaken in this specific area has a worldwide and collaborative character, as seen by the participation of scholars from other nations in about 32.22% of co-authorships. Based on the dataset analysis, few recommendations can be considerate to the policy makers to promote and strengthen the growth of the Islamic banking sector:

- **Research support and collaboration:** Research initiatives can be encouraged and funded in the field of risk management in Islamic banking. Research collaborations can be fostered among the researchers of different institutions and countries to encourage the knowledge exchange and developments in the Islamic banking sector.
- **Enhancement of academic institutions:** To encourage the developed and high-quality research publications and output, resources, research grants and faculty developments must be provided to the academic institutions specialized in Islamic banking and finance.
- **Establishment of Centre of Excellence:** Centers of Excellence dedicated to the risk management and Islamic banking can be created that can serve as hubs for training, research and policy developments in the industry.
- **Facilitation of International collaboration:** Collaborations and partnerships can be facilitated between researchers and Islamic banking institutions which can lead to the innovative developments of risk management strategies.
- **Development of Shariah- Compliant Financial products:** To cater the specific needs of risk management of Islamic banking institutions, the development of innovative sharia-compliant financial products can be encouraged.
- **Promoting Industry-Academia Collaborations:** To fill the gap between practical implementations and theoretical research, the collaborations between Islamic banking industry and Academia must be encouraged. This can lead to more efficient and effective risk management practices.
- **Reinforcement of Regulatory framework:** The regulatory framework of Islamic banking must be reviewed and updated. This can ensure that these are aligned with the latest industry developments and research findings in risk management.
- **Support financial literacy:** Investments in financial literacy programs must be targeted for both professional s and customers in Islamic banking. This can lead to improved risk assessment and research findings.
- **Encouraging international conferences:** To foster knowledge- sharing, collaborations and networking among professionals worldwide, international conferences must be organized on Islamic banking and risk management.
- **Enhancing Risk Management in Islamic Banks:** Recognizing that Islamic banks face unique risks compared to conventional banks due to their risk-sharing nature, policymakers should encourage Islamic banks to strengthen their risk management systems. Ensuring robust risk

management practices is crucial to prevent potential crises and maintain financial stability in the Islamic banking sector.

- **Holistic Risk Assessment:** Regulatory authorities should consider adopting more comprehensive approaches to assess Islamic banks' risk. The use of a Composite Risk Index, as proposed in the study, can provide a holistic view of a bank's risk status, making it easier for regulators and stakeholders to monitor and evaluate risks effectively.
- **Support for Modern Banking and Macroeconomic Indicators:** Policymakers should support the adoption of state-of-the-art methods that simultaneously assess multiple indicators of banks' risk. This approach can provide more accurate early warning signals for potential financial crises. Additionally, monitoring modern banking and macroeconomic indicators can help in assessing and managing risks effectively.
- **Monitoring Regulatory Quality:** Recognizing the impact of regulatory quality on risk categorization, policymakers should focus on improving the regulatory framework for Islamic banks. Stringent and effective regulation can contribute to lower risk levels, enhancing the overall stability of the Islamic banking sector.
- **Encouraging Liquidity and Capital Management:** Given the significance of liquidity risk and capitalization, policymakers can encourage Islamic banks to adopt prudent liquidity and capital management practices. Adequate capital buffers can help mitigate risks and ensure the resilience of banks during adverse economic conditions.
- **Promoting Financial Inclusion:** Policymakers should consider initiatives that promote financial inclusion within the Islamic banking sector. Expanding access to Islamic financial services can contribute to a more diversified and robust banking sector, reducing concentration risk.

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