Corporate Governance of Banks, The Key for Trust: A Bibliometric Analysis

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Abstract

Corporate governance aims to create a transparent, fair, accountable, and responsible management environment for all stakeholders. Due to the significant role of banks in the economy, corporate governance in banks is indispensable for establishing trust, which is crucial for them to survive. Albeit numerous bibliometric analyses have been found solely on banks or corporate governance, there needs to be more bibliometric analysis on the corporate governance of banks. Thus, this study aims to explore the research works of corporate governance, particularly of banks, by conducting a bibliometric analysis from 2003 to 2022. The results show that the interest in corporate governance in banks increased, especially after the 2008 financial crisis, and the studies focused on the board structure-bank performance and board structure-risk appetite relations. Additionally, corporate governance has emerged as an essential topic in Islamic banking since the 2010s.

Keywords: Corporate Governance, Corporate Finance, Banks, Banking, Islamic Banking, Bibliometric Analysis

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1. INTRODUCTION

Corporate governance (CG) is the institutional and market-based regulations that direct the managers, who decide about the operation of the business, as well as maximize the benefit they will provide to them as a result of business activities, to make decisions in order to maximize the value of the business for all the stakeholders (Denis et al.,2003). Corporate governance consists of a set of rules, controls, policies and decisions implemented to take care of corporate behavior (Ulusoy et al., 2022). CG consists of two parts. The first part is made of the institution's own abilities, such as financial structure, performance measures and shareholders. The second part, however, is composed of market, legal framework, and rules (Kendirli et al., 2010).

Although the foundations of CG date back a century, its importance has increased considerably since the end of the 90's, with its inclusion in the agendas of various global organizations after financial crises. According to one of these global organizations, OECD, the purpose of corporate governance is to help create the environment of trust, transparency and accountability necessary to improve long-term investment, financial stability and integrity of businesses, thereby enabling stronger growth (OECD, 2015). Contrary to this situation, financial crises have developed in environments where accountability and transparency are ignored.

The most important negative effects of financial crises are damage to trust in financial institutions. Lack of "trust" can paralyze financial markets (Guiso et al., 2009). Loss of trust in any sector can affect that sector and the other sectors which are associated with it. In this instance, the effect of loss of trust can be limited. However, when bank trust declines, it damages the entire economic system. The main reason for this is the role of banks in the economy. While banks ensure that unused funds are used effectively and safely, they also enable users to reach the resources they need for production or consumption with the funds they collect. When the trust in banks decreases, the ability of banks to collect funds weakens, their existing fund assets begin to decrease, and they have difficulty in lending. In this case, banks cannot play their crucial role in the economy, creating problems for the entire economic system (Bubbico et al., 2012). In addition, different from other sectors, special applications for banks, such as deposit insurance, aim to eliminate the problems that may occur in the monitoring of banks. However, these applications can also delay the visibility of potential glitches. For this reason, the regulations on banks may cause various weaknesses in other points. That's why good corporate governance and monitoring is vital in banks (Mülbert, 2009). For these reasons, it is necessary to focus on banks and corporate governance, the cornerstone of trust in banks (John et al., 2016).

It is important to determine corporate governance principles and to accept and apply these principles with the widest possible participation. Cadbury Report (1992), OECD CG Principles (2004, 2015), Sarbanes-Oxley Act (SOX, 2002), European Commission Recommendation (2005), Basel Committee Principles (2006, 2008) are the results of international efforts. The multitude of stakeholders and their role in the economy enlarges the sphere of influence of the problems they will experience and

requires banks to be followed carefully. Among these regulations and recommendations, Basel Committee Decisions focus on banks, stating that effective corporate governance is essential for the continuation of a sound financial system and has a key role in improving the country's economic conditions.

Such regulations, recommendations, practices, and their effects have caused many researchers to focus on this area. Considering the academic development, the number of academic studies in corporate governance has increased significantly. The main motivation of researchers working in this field is to conduct studies that will guide regulatory and supervisory authorities and practitioners for the construction of the healthiest corporate governance systems. This study focuses developing corporate governance literature particularly for banks. Thus, the aim of this study is to explore the research works of corporate governance particularly of banks by conducting bibliometric analysis from 2003 to 2022. Albeit numerous bibliometric analyses have been found solely on banks or corporate governance, there needs to be more bibliometric analysis on corporate governance of banks. Therefore, this study will be the first to bibliometrically analyze the topic and help researchers in future studies.

The analyses made within the scope of the study show that there has been an increase in the production of publications in this field, especially after the 2008 financial crisis. During this period, many researchers started to work on the subject in order to understand the causes of the crisis and to draw the necessary lessons. When we look at the production of articles by countries, the UK and the USA are at the forefront both in the number of publications and in studies with co-authors from different countries. The reason for this is that those are the countries where vital regulations are made in the field of working environment and corporate governance (Cadbury Report, 1992; Sarbanes-Oxley Act, 2002). In the co-citation analysis, in which the articles in the bibliography of the examined articles were examined, a two-cluster structure was reached. While the studies of the authors in one of these two clusters are the articles that form the foundations of the field of corporate governance, it is seen that the studies in the other cluster focus on corporate governance especially for banks. Similarly, in the co-word analysis where the use of keywords is examined together, words such as ownership structure, agency, investor production, which are the basic concepts of corporate governance, are in one cluster, while words such as Islamic banking, bank performance related to corporate governance in banks, corporate bank governance are in the other cluster. According to the co-word analysis, Islamic banking is the most common among other keywords. The fact that the average year of publication of 49 studies in the field of Islamic banking is 2019 shows that the field is a relatively new topic and is advancing rapidly. When the reasons for this are examined, the rapid growth of Islamic banking and corporate governance studies specific to conventional banks can be reconsidered for Islamic banking. In other words, studies in conventional banking can be a guide for studies in Islamic banking. Malaysia is important for corporate governance in Islamic banking. Malaysian researchers have strong ties to the UK on co-authorship.

Malaysia has also established co-authoring ties with other Islamic countries. For this reason, the country acts as a bridge between the UK and Islamic countries in Islamic banking.
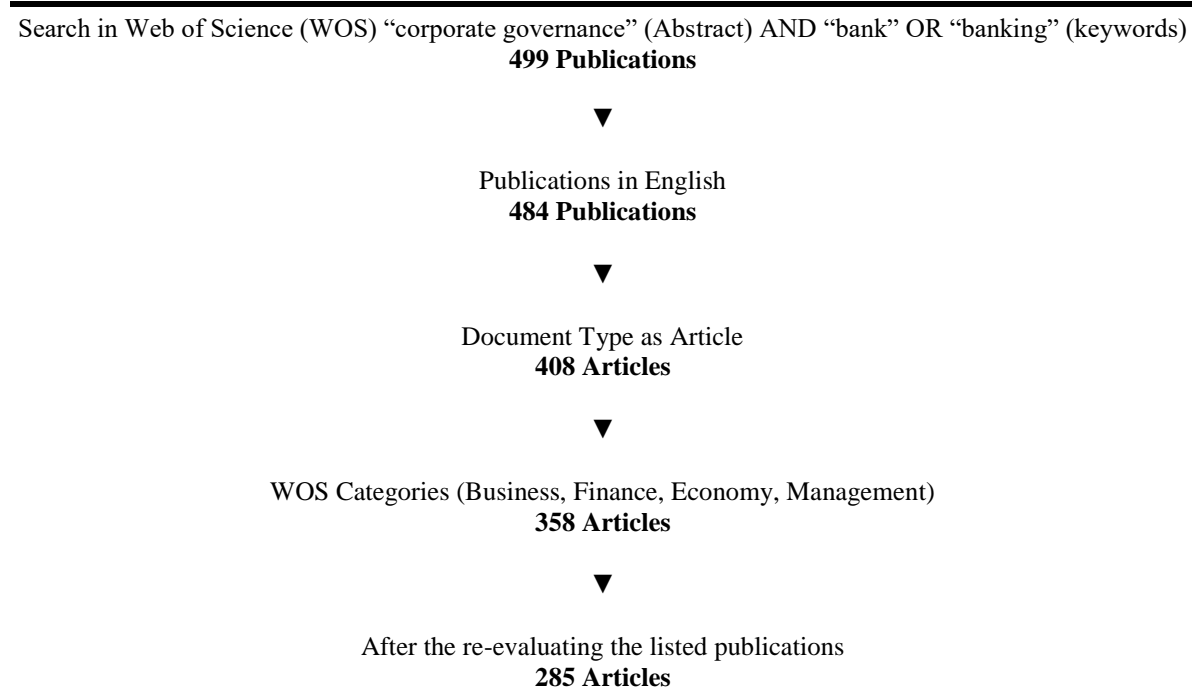
The structure of this article is as follows. Section 2 explains the research design in terms of data extraction process and the methodology, Section 3 provides the bibliometric and visual results, and Section 4 contains the main conclusions and limitations.

2. RESEARCH DESIGN

2.1. Data Extraction

For this study, the data was extracted from Web of Science (WOS) electronic database, a broad, multidisciplinary online database that gives users access to a number of citation databases (e.g. Science Citation Index Expanded (SCIE), Social Sciences Citation Index (SSCI), Emerging Sources Citation Index (ESCI). This database is commonly preferred in bibliometric studies as it only incorporates the publications with the highest standards and adheres to the most relevant publications with useful metadata (e.g. titles, keywords, abstracts, references, authors, journals and citations (Grueso-Gala et al., 2022; Galetta et al, 2022; Alam et al., 2021; Garrigos et al. 2018; Gaviria-Marin et al. 2019; Bartolacci et al. 2020 and Zhang et al. 2019; Effah et al., 2023).The data extraction steps for determining the final sample is shown below in Figure 1.

Figure 1. Data Extraction Steps

Search in Web of Science (WOS) "corporate governance" (Abstract) AND "bank" OR "banking" (keywords)
499 Publications

▼

Publications in English
484 Publications

▼

Document Type as Article
408 Articles

▼

WOS Categories (Business, Finance, Economy, Management)
358 Articles

▼

After the re-evaluating the listed publications
285 Articles

Search criteria can significantly affect the results of the study. Initially, academic publications on the research topic from 2003 to 2022 were retrieved from WOS on 5th of April, 2023. In order to reach as many articles as possible, search terms "corporate governance" in abstracts AND "bank" OR "banking" among the authors keywords were entered, yielding initially 499 publications and further

refined to the ones in English with 484 publications. The documents were then filtered by categories including "Business Finance", "Business", "Economy" and "Management" resulting in 358 documents. Proceedings papers, book chapters and early access documents apart from the articles were also included in the refined sample. All available data (author, title, source, abstract) offered by WOS were exported as BibTeX. The data was also downloaded as Microsoft Excel file to carefully screen the titles and abstracts of all studies for relevance and finally 285 documents were determined to be the final sample in the study. As can be seen, 73 studies (358-285) were excluded at the last stage because the authors made their own evaluations with the information they obtained in their previous studies on the subject. For example, studies focused on the board structure of businesses, not banks, such as the relationship between the board structures of enterprises and their bank selections, are excluded. Figure 1 above represents the data extraction process of this study.

2.2. Methodology

In this research, bibliometric analysis, known as the qualitative and quantitative research analysis technique, was employed to assess the impact of particular academics, research groups, countries, institutions, and scientific publications on the literature of a particular field. Generally, the goal of bibliometric analysis is to synthesize vast amounts of bibliometric data to illustrate the state of the intellectual structure and emerging trends in a field of research (Donthu et al., 2021a). By mapping large volumes of unstructured research works based on the most popular publications, this technique becomes especially useful for scholars before starting the literature review to uncover emerging trends in the extant literature. Hence, it provides a road map for researchers to identify the most influential studies in a particular field clearly and objectively (Zupic et al., 2015; Krauskopf, 2018; Effah et al., 2023; Galetta et al., 2022). Moreover, it guides researchers for future studies by identifying the research gaps (Zainuldin et al, 2022). Bibliometric analysis is an easier and more reliable method to process hundreds of articles compared to other text analysis methods, such as content analysis (Feng *et al*., 2017). Therefore, well-conducted bibliometric studies enable academics to (1) get a comprehensive picture of the research topic, (2) discover knowledge gaps, (3) generate original research questions, and (4) articulate their intended contributions to the subject (Donthu et al., 2021a).

This analysis's popularity is increasing among scholars due to its ease of usage with software such as Biblioshiny, Gephi, VOSviewer, Leximancer, Citespace, and scientific databases like Scopus and Web of Science. Its popularity in social science research rose as well since it helps to reveal high-impact studies from immense amounts of scientific and objective data such as the number of citations and publications, occurrences of keywords and topics (Donthu et al., 2021a; Alam et al., 2021; Khan et al., 2021). A summary of bibliometric techniques used in this study is illustrated in Figure 2.

Figure 2. A Summary of Bibliometric Techniques Used in This Study
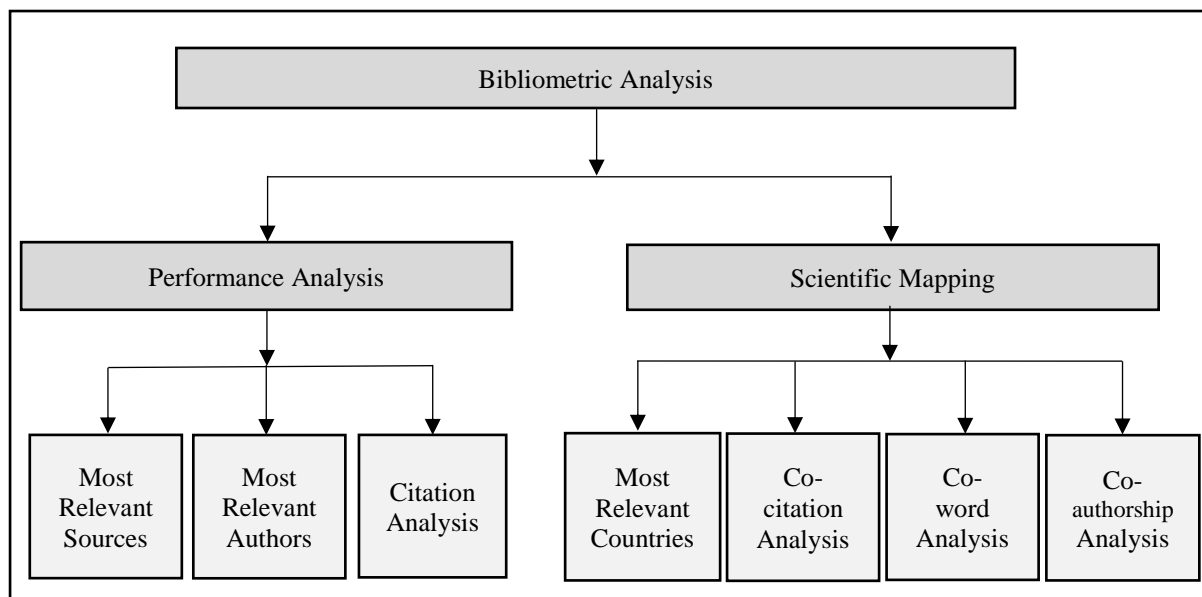
Source: Author's own scheme

Performance analysis and science mapping are two main techniques used in bibliometric analysis (Cobo et al., 2011; Donthu et al, 2021a; Alam et al., 2021). Performance analysis, also known as descriptive analysis aims to assess the research performance of scientific constituents (e.g., authors, affiliations, countries, and journals) in a particular field (Zupic et al., 2015; Zainuldin et al., 2020; Alam et al., 2021; Donthu et al., 2021a). Science mapping evaluates the connections between research constituents and the intellectual interactions that include the relational techniques of citation analysis, co-citation analysis, bibliographic coupling, co-word analysis, and co-authorship analysis through visualized representations (Baker, Kumar, & Pandey, 2021; Cobo et al., 2011; Zainuldin et al., 2020). It allows detection of patterns that would not be possible to find using traditional research techniques (Yamaguchi et al., 2023). A summary of bibliometric techniques used in this study is illustrated in Figure 2.

For the bibliometric analysis, the Biblioshiny, a web interface in the free R Bibliometrix Package (R), was utilized. Hence, all the data was exported in Bibtex format to R for data analysis in Biblioshiny. Biblioshiny allows for conducting various analyses through visualizations (Mougenot et al.,2023).

3. RESULT AND ANALYSIS

3.1. Performance Analysis

Performance analysis is the hallmark of bibliometric studies (Donthu et al., 2021b; Alam et al., 2021). In this section, descriptive analysis results for variables such as annual scientific production trend, most relevant journals, authors, most productive countries, and most cited documents are discussed, using the data set obtained from WOS in April 2023. Furthermore, citation per publication and h-index that combines both citations and publications is also used to measure the performance of research

constituents. This section introduces the metrics for performance analysis retrieved from Biblioshiny given below in Table 1.

Table 1. Main Information about Data

| Description	Results
Timespan	2003:2022
Sources (Journals, Books, etc.)	143
Documents	285
Annual Growth Rate %	20.39
Document Average Age	6.3
Average citations per document	22.57
References	11,495
Document Types	
Article	260
Article; Book Chapter	3
Article; Early Access	14
Article; Proceedings Paper	8
Document Contents	
Keywords Plus (ID)	472
Author's Keywords (DE)	873
Authors	
Authors	618
Authors of Single-Authored Docs	59
Authors Collaboration	
Single-Authored Documents	59
Documents per Author	0.46
Authors per Document	2.17
Co-Authors per Document	2.38
Degree of Collaboration	0.90
Collaboration Coefficient	0.54
Collaboration Index	2.47

Source: Biblioshiny

As shown in Table 1, the results show 285 articles with different types; journal article, article as book chapter, article as early access and article as proceedings papers. All publications were published from 2003 to 2022. The 14 early-access articles are included in the data to ensure the completeness of the data for a comprehensive trend analysis. The number of authors who contributed to the research area is 618, of which 59 were published solely. The collaboration index of 2.47 reveals that nearly 2 authors published one article, in other words the researchers are collaborative enough in this area with an average collaboration coefficient of 0.54 (between 0 and 1). Besides, the average number of citations per document is 22.57 and the total number of references disclosed in the papers is 11,495.

3.1.1. Annual Scientific Production Trend

This section demonstrates annual scientific production regarding the topic of corporate governance for banks. Figure 3 illustrates the publication trend over the period studied with an annual growth rate of 20.39%.

Figure 3. Annual Scientific Production, 2003-2022
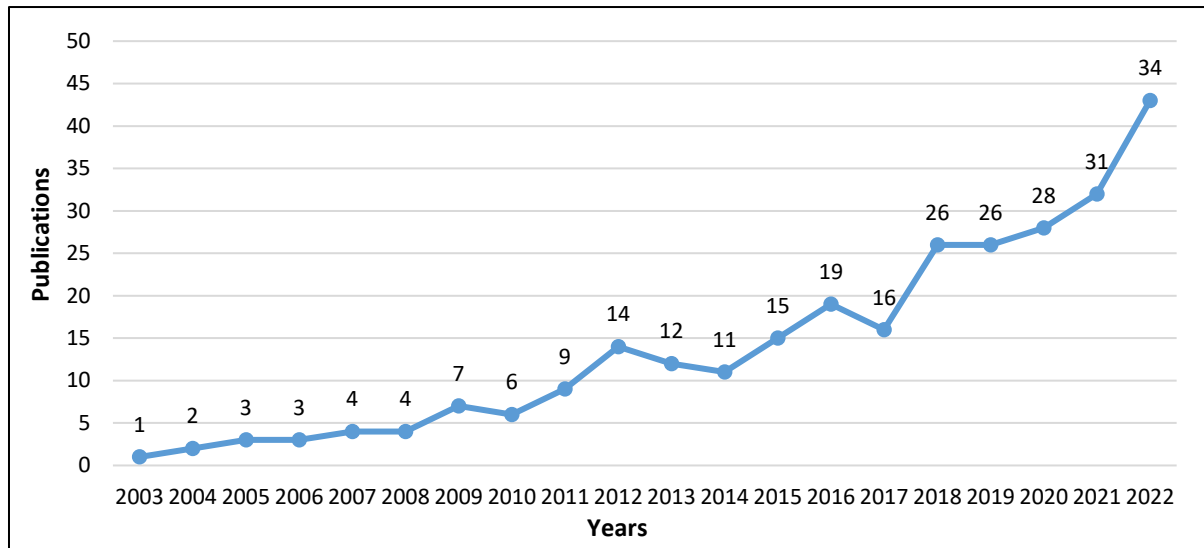
Source: Biblioshiny
Notes n=271, Although 285 articles are within the study's scope, the total data in the graph is 271, because the system (Biblioshiny) does not count early access articles in production trend.

The first article that was published in 2003 by Cornett MM et.al. was about the effect of corporate governance mechanisms in reducing the manager-shareholder conflict to enter value-destroying bank acquisitions. The number of published articles between 2003 and 2008 was quite low. Since 2009, the number of publications has started to increase. Although the annual production number decreases from time to time, it is seen that the interest in the field has increased and the curve is moving upwards. The increasing trend after 2009 shows that interest in the subject has increased after the global financial crisis. Following a significant decrease in 2017, a noticeable upward trend started in 2018 reaching its apex with 34 publications in 2022.

3.1.2. Most Relevant Sources, Authors

This section demonstrates the most relevant journals and authors regarding corporate governance for banks.

Table 2. Most Relevant Sources

Rank	Journal	h_index	g_index	TC	TP
1	Corporate Governance-The Int. Journal of Business in Society	12	19	363	21
2	Journal of Banking & Finance	10	10	1,349	10
3	Corporate Governance-An International Review	6	9	272	9
4	Journal of Asian Finance Economics and Business	3	7	59	8
5	Managerial Finance	7	8	133	8
6	Emerging Markets Finance and Trade	4	6	90	6
7	International Journal of Disclosure and Governance	2	2	11	5
8	International Journal of Islamic and Middle Eastern Fin. and Mng.	3	5	125	5
9	Journal of Corporate Finance	4	5	170	5
10	Journal of Finance Regulation and Compliance	2	3	14	5

Source: Biblioshiny **TC:** Total Citation **TP:** Total Publication

Table 2 shows the top ten journals with the greatest number of papers published in the field. With 82 out of the 285 total articles published, these top 10 journals account for nearly 29% of all publications and 40% of total citations with 2,586 citations. Corporate Governance-The International Journal of Business in Society is the most relevant, productive journal with 21 articles (7.4%) and 363 citations distinct enough from the others. Regarding the number of times its articles cited related to the topic, Journal of Banking & Finance lead the ranking. Albeit this journal had 10 publications, the number of citations was 1,349. Corporate Governance - An International Review is in third place with 9 publications and 272 citations, followed by Journal of Asian Finance Economics and Business and Managerial Finance published 8 articles each but the latter received 133 citations and the former received 59 citations over the period. Emerging Markets Finance and Trade had 6 and the remaining journals, namely the International Journal of Disclosure and Governance, International Journal of Islamic and Middle Eastern Finance & Management, Journal of Corporate Finance and Journal of Financial Regulation and Compliance had 5 publications each.

Table 3. Most Relevant Authors by Total Publications

Rank	Authors	TOTAL PUBLICATION (TP)	TOTAL CITATION (TC)	TC/TP	PUBLICATION YEAR
1	Hasan I	5	211	42.2	2011
2	Mollah S	4	297	74.25	2015
3	Gallo A	4	67	16.8	2015
4	El-Chaarani H	3	13	4.3	2022
5	Fang Y	3	179	59.7	2011
6	Lin CY	3	33	11.0	2018
7	Marton K	3	179	59.7	2011
8	Orazalin N	3	93	31.0	2016
9	Zhang Y	3	19	6.3	2012
10	Abraham R	2	13	6.5	2022

Source: Biblioshiny

Table 3 below displays the top ten influential authors with the highest publications among 618 authors. The contribution of top ten authors to the research area is 11.5% (33 articles). Hasan I and Mollah S are the most relevant authors in terms of total publications with 5 and 4 articles, respectively. After Gallo A in the third rank with 4 publications and 67 citations, 6 authors, namely, El-Chaarani H, Fang Y, Lin Cy, Marton K, Orazalin N and Zhang Y published 3 articles each in the field, and the last author had 2. Additionally, 17% of the total citations are made up of the following top ten authors where Mollah S, Hasan I, Fang Y and Marton K are seen to be the first four.

3.1.3. Geographic Distribution

A total of 52 countries, based on the corresponding authors' countries, contributed to the field of research.

Table 4. Top Ten Countries by Documents and Citations

Rank	Country by Documents	Documents	Rank	Country by Citations	Citations
1	United Kingdom	32	1	USA	2651
2	USA	29	2	Germany	510
3	China	17	3	United Kingdom	332
4	India	16	4	China	282
5	Indonesia	15	5	Sweden	246
6	Italy	13	6	Spain	155
7	Spain	11	7	Australia	147
8	Tunisia	11	8	Belgium	126
9	Germany	9	9	Finland	126
10	Malaysia	8	10	Korea	124

Source: Biblioshiny

Table 4 shows the top ten countries that have contributed to the research area by documents (56%) and citations (73%). As seen in the table, United Kingdom, as the most prolific country, published 32, USA published 29 and China as in the third rank published 17 articles, accounting for 27% of the total papers. Based on the table, in terms of citations, the United States was the main contributor with 2,651 citations, followed by Germany (510) despite being ninth in total publications and United Kingdom (332). Moreover, Figure 4 depicts both the productivity of the countries and the collaboration between them.

**Figure 4.** Country Collaboration Map
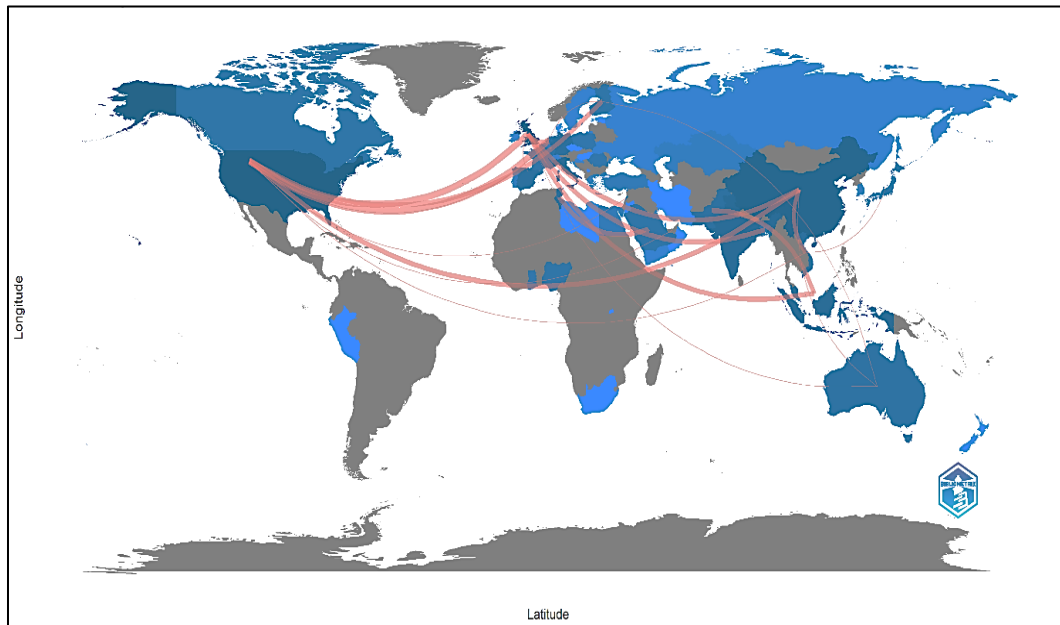
Source: Biblioshiny

The intensity of the color shows productivity, the circle size reflects the number of publications by country, and the thickness of the lines represents the degree of collaboration. Regarding collaboration, scholars from the United States, Western and Northern Europe and China show a great cooperation.

For further collaboration analysis, co-authorship analysis by countries was utilized and displayed in Figure 5 with five clusters. The node in the analysis represents the influential countries of authors and the lines between them represent the degree of collaboration.

Figure 5. Co-authorship Analysis by Countries Map
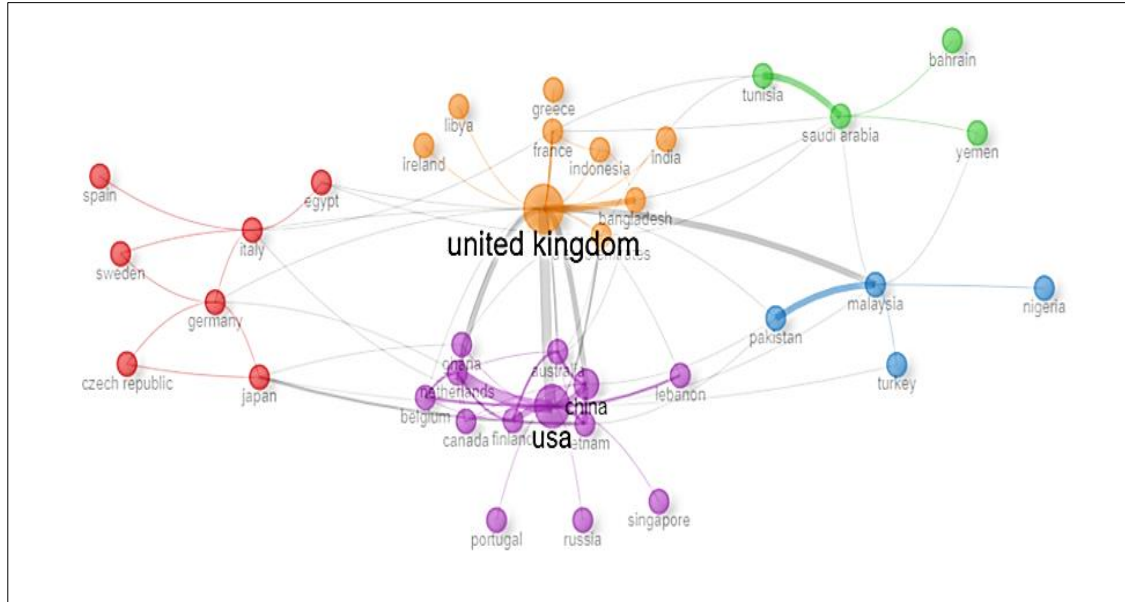
Source: Biblioshiny

The first cluster is led by United Kingdom and also includes Indonesia, India, United Arab Emirates, France, Bangladesh, Greece, Ireland and Libya. USA is the leading country, together with China, Vietnam, Australia, Lebonan, Canada, Finland, Ghana, Portugal, Netherlands, Belgium, Russia, and Singapore. Third cluster is a group from mainly European countries such as Italy, Spain, Germany, Sweden, the Czech Republic and also Japan, and Egypt. Malaysia, Pakistan, Nigeria and Turkey are in the fourth cluster. The last cluster consists of Tunisia, Saudi Arabia, Yemen and Bahrain. United Kingdom in the first cluster and the United States in the second cluster which are placed in the center of the map are the top publishing countries with the highest collaboration of 22 and 19, respectively. Those countries mainly not only collaborate within their cluster, but also with the ones in other clusters. These results could be verified with Table 4 listing USA as the top country with 2,651 citations and a production frequency of 97 and United Kingdom ranks the fourth with 280 citations and a production frequency of 96. USA mostly collaborated with United Kingdom, Netherlands, China and Finland whereas Bangladesh, China, Malaysia and Netherlands are the countries that United Kingdom collaborated.

3.2. Science Mapping

Science mapping analysis aims to show how various research components are connected in terms of their structural and intellectual networks. This section of the analysis shows the results of citation analysis, co-citation analysis, co-word and co-authorship analysis. Citation analysis makes it

possible to examine the most significant works in a field of study to learn about the intellectual dynamics of that topic (Donthu et al., 2021a). Co-word analysis models the frequency of co-occurrence of keywords used in scientific publications related to the subject (Whittaker, 1989). It then visualizes these results by revealing the interactions between the keywords (Callon et al., 1991; Su et al., 2010). Co-citation was introduced by Small (1973) as the most helpful measure of relatedness because when two publications are cited together in the references list of another article, they are connected by a co-citation network (Donthu et al., 2021a; Zainuldin et al., 2020). In other words, it shows that the works that are frequently referenced together have comparable themes (Hjørland, 2013). Co-authorship analysis is conducted to examine the social interactions or relationships among authors and their impacts on the development of the research field (Donthu et al., 2021a).

3.2.1. Citation Analysis

Citation analysis, which demonstrates the relevance of documents by the number of citations received, is the essential method of scientific mapping. This analysis enables the researchers to find the most significant documents in the research area and therefore understand the intellectual dynamics of the research area (Galetta et.al, 2022; Feng et.al, 2017; Alam et.al, 2021). Table 5 presents the top twenty influential documents in the field.

Table 5. Top Twenty Most Cited Articles

Rank	Document	DOI	TC	TC/Year
1	Laeven L, 2009, J Financ Econ	10.1016/j.jfineco.2008.09.003	1392	92.80
2	Aebi A, 2012, J Bank Financ	10.1016/j.jbankfin.2011.10.020	393	32.75
3	Berger A, 2006, J Bank Financ	10.1016/j.jbankfin.2005.05.015	309	17.17
4	Mollah S, 2015, J Bank Financ	10.1016/j.jbankfin.2015.04.030	240	26.67
5	Mikes A, 2009, Manage Account Res	10.1016/j.mar.2008.10.005	201	13.40
6	Grove H, 2011, Corp Gov	10.1111/j.1467-8683.2011.00882.x	150	11.54
7	Chen Y, 2011, Aestimatio	*N/A**	116	8.92
8	Fang Y, 2014, J Bank Financ	10.1016/j.jbankfin.2013.11.003	110	11.00
9	De Haan, J. and Vlahu, R, 2016, J Eco Sur	10.1111/joes.12101	110	13,75
10	Becht M, 2011, Oxf Rev Econ Policy	10.1093/oxrep/grr024	102	7.85
11	Ahn S, 2009, J Bank Financ	10.1016/j.jbankfin.2008.08.013	89	5.93
12	Bhagat S, 2015, J Bank Financ	10.1016/j.jbankfin.2015.06.018	86	9.56
13	Peni E, 2012, J Financ Serv Res	10.1007/s10693-011-0108-9	84	7.00
14	Anginer D, 2018, J Financ Econ	10.1016/j.jfineco.2018.06.011	80	13.33
15	Berger An, 2017, Manage Sci	10.1287/mnsc.2016.2422	80	11.43
16	Qian M, 2015, J Corp Financ	10.1016/j.jcorpfin.2014.10.006	76	8.44
17	Hinson R, 2010, Int J Bank Mark	10.1108/02652321011085176	73	5.21
18	Garcia-Herrero A, 2006, Cesifo Econ Stud	10.1093/cesifo/ifl006	67	3.72
19	Bose S, 2018, Asia Pac J Manag	10.1007/s10490-017-9528-x	57	9.50
20	Yeh Yh, 2013, Pac-Basin Financ J	10.1016/j.pacfin.2012.08.003	54	4.91

**Notes**: *Articles without DOI numbers according to WOS database

Nine of them have more than 100 citations. The article written by Laeven L. (2009) received the highest number of citations (n=1,392) and the highest number of citations per year (92.8) standing out from the remaining ones. The article was about the effects of the same regulation on bank risk-taking depending on the bank's corporate governance structure. Aebi (2012) and Berger (2006) rank second and third with 393 and 309 citations, respectively. The former investigated whether risk management-related corporate governance mechanisms are associated with better bank performance during the financial crisis of 2007/2008 and the latter studied the effect of leverage on agency costs and thereby its influence on firm performance. From the table, it can also be derived that, nearly 51% of the total citations were received during 2006-2009 (n=2,058). This is primarily due to the highest citations received by Laeven L., Mikes A. and Ahn S. in 2009.

The article written by Mollah and Zaman differs from its predecessors among the widely cited studies. This study, titled "Shariah supervision, corporate governance and performance: Conventional vs. Islamic banks", has been one of the studies that steered the field of corporate governance in Islamic banking.

3.2.2. Co-Citation Analysis

Co-citation analysis is a science mapping technique in which two publications are cited together in a third one (Small, 1973). Since other publications often cite these two publications together, these two publications likely have something in common (Benckendorff et al., 2013). In this way, researchers can identify critical scientific publications, research trends, the structure of scientific disciplines, and their change over time. Briefly, co-citation analysis is a very useful tool for mapping the science of the citation field (Vanraan, 1990). The analysis shows the intellectual structure of the research field by grouping the most related works into thematic clusters. Through the analysis of those clusters, scholars can understand the main streams of research and at the same time discover the new routes in the area by focusing on the papers that were left out of those clusters. Different types of co-citation can be utilized such as document co-citation analysis, author co-citation analysis and journal co-citation analysis. Figure 6 displays the co-citation analysis map in two clusters (red and blue).

Figure 6. Co-citations Analysis Map
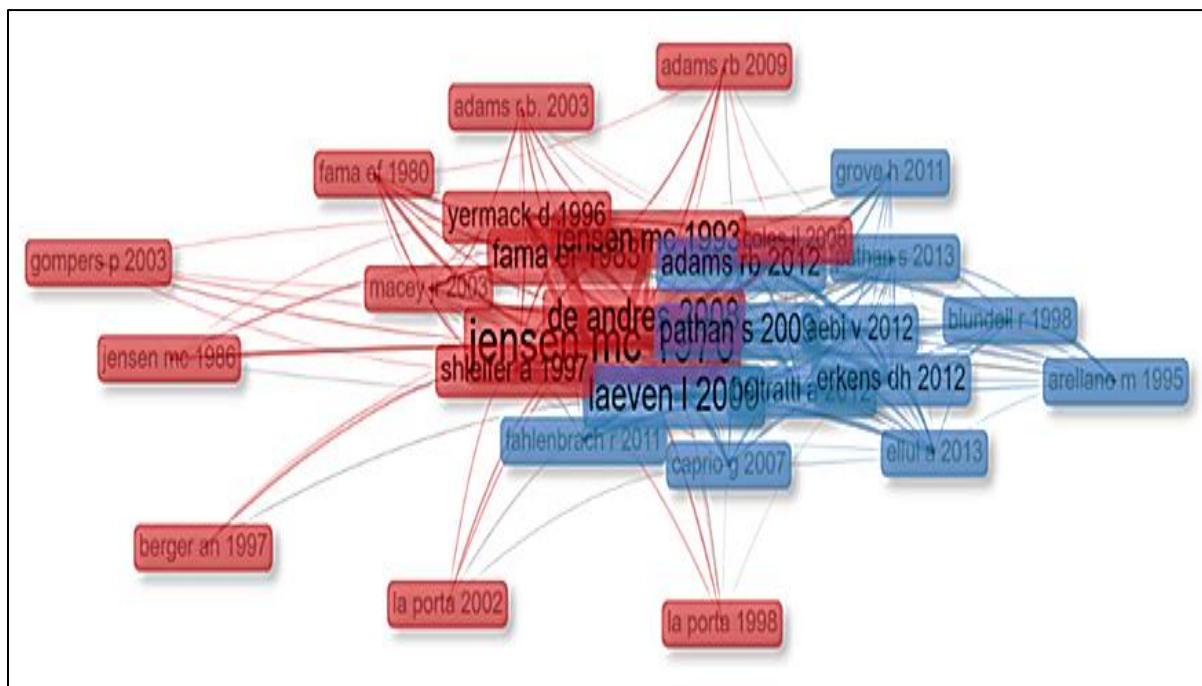
In the red cluster, there are pioneering studies in the field of research. In these studies, the concept of corporate governance has been explained where especially the agency problem was the main focus (e.g. Jensen and Meckling's Theory of the firm: Managerial Behaviour, Agency Costs and Ownership Structure, Fama's Agency Problems and Residual Claims). In order to solve the agency problem, the duties and structures of the board of directors have begun to be discussed in the articles (e.g. Coles' Boards: Does One Size Fit All). The documents in this cluster were published between 1976 and 2009, with the average year of publication being 1996. While this cluster forms the basis for corporate governance, it also contains the first studies in the field of corporate governance of banks (e.g. Macey's The Corporate Governance of Banks, Adams' Is Corporate Governance Different for Bank Holding Companies).

The studies in the blue cluster focus on corporate governance practices, in particular for banks. In particular, the relationship between the structure of the board of directors and bank performance or bank risk has been studied. Documents in this cluster were published between 1995 and 2013, and the average year of publication is 2009. As seen in the citation analysis, the most cited publication in the field of corporate governance in banks is the work published by Laeven and Levine (2009) and is included in this cluster. This study, the subject of which is the effect of regulations on different ownership structures, has attracted attention after the global crisis. This study has been cited together with studies focusing on the risk appetite of banks (e.g. Pathan's Strong boards, CEO power and bank risk-taking, Aebi's Risk management, corporate governance, and bank performance in the financial crisis, Beltratti's The credit crisis around the globe: Why did some banks perform better?)

3.2.3. Co-Word Analysis

The purpose of co-word analysis is to determine frequently used keywords and their relations (e.g. together the existence of keywords in the same article) (Whittaker, 1989; Grueso-Gala et al., 2022). The distance between terms in the co-word map shows the relatedness. In other words, it connects keywords when they appear in the same document (Donthu et al., 2021a). Hence, co-word analysis, like co-citation analysis, assumes that words that commonly occur together have a thematic association with one another. Keywords allow scholars to identify the conceptual structure of a discipline without referring to the full text of the articles (Romo-Fernández et al., 2013). It then visualizes these results by revealing keyword interactions (Callon et al., 1991; Su et al., 2010).

For the analysis, keyword plus was considered which is provided in R. Keyword plus is a list of words determined by artificial intelligence to facilitate traditional keyword and title access. A merge list was created to collect words used with the same meaning under one word, and a remove list to remove words that did not make sense from the map. For example, the words Islamic banking, Islamic bank, shariah bank, shariah banking are combined as "Islamic banking". Also, the words that indicate methods such as; model, impact, pay were removed. The co-word analysis map in two clusters (red and blue) is shown in Figure 7.

Figure 7. Co-Word Analysis Map
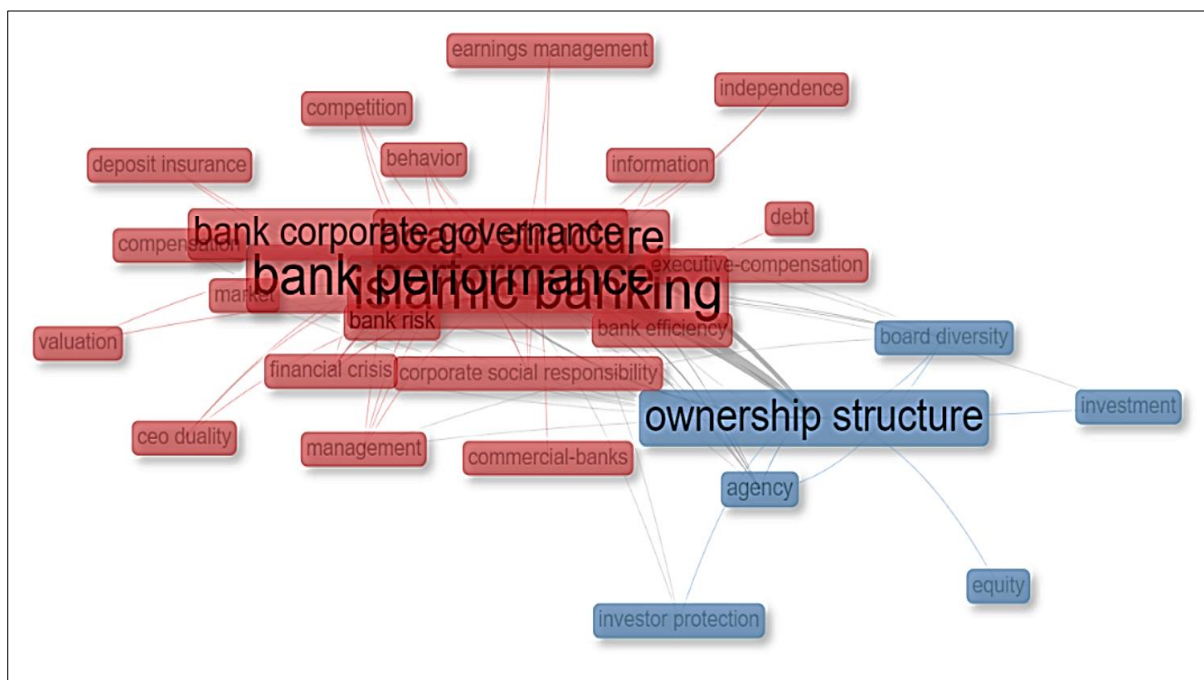
 Source: Biblioshiny

As a result of the co-word analysis made in the R program, the shape with 2 clusters was reached. Words in the same clusters are frequently used together. Keywords such as "agency, ownership structure, investor, investor production" are included in the cluster shown in blue. This cluster shows similarities with the red cluster reached in the co-citation analysis. We have mentioned that in the red

cluster reached by co-citation analysis, there are articles that deal with the subject in a comprehensive manner in the formation of the field. The keywords in the blue cluster we reached in the co-word analysis are also the basic keywords of corporate governance.

Keywords such as "Islamic banking, bank performance, bank corporate governance" stand out in the red cluster, which results from the co-word analysis. Betweenness measures the capacity of a keyword to connect other keywords in data transmission within the network, such as an intermediary (Sedighi, 2016). Keywords such as "Islamic banking, bank performance, bank corporate governance" stand out in the red cluster, which is reached as a result of the co-word analysis. Islamic banking has the highest betweenness value in this cluster. In order to understand this situation, we examined the studies on Islamic banking within the scope of the study. 49 out of 285 articles were on Islamic banking. The average year of publication of these studies is 2019. The differences between conventional banking and Islamic banking and the rapid growth of Islamic banking have led researchers to work in Islamic banking (Zaher et al., 2001). According to The Banker Database data, while conventional banking will grow by single digits as a percentage, Islamic banking will grow by double digits in 2023 (The Banker Database, 2022).

With the perspective of Islamic banking, the subject of corporate governance in banks began to be studied later than the subject of corporate governance in conventional banking. For researchers focusing on this field, it has been seen that the relationship analyses made in the field of conventional banking should be re-evaluated from an Islamic point of view. For this reason, studies in the field of corporate governance in conventional banking enabled the testing of ready-made relationship models for the field of Islamic banking. Thus, corporate governance studies in Islamic banking have increased more rapidly in less time.

3.2.4. Co-Authorship Analysis

Co-authorship analysis shows research collaboration among authors. Figure 8 displays the map of co-authorship with 11 clusters. Out of 618 authors, 31 collaborated in this research field. Clustering is made up of at most 5 authors. The first cluster comprises 5 authors collaborating and is led by Hasan, among the top ten most relevant authors shown in Table 3. The other authors in this cluster are Fang, Lin, Marton and Chen. Mollah, Keasey and Mobarek are in the second and Gallo, Battaglia and D'amato are in the third cluster. The remaining clusters except 8, 9 and 10 have only 2 authors that have common publications.

Figure 8. Co-Authorship Analysis – Cluster
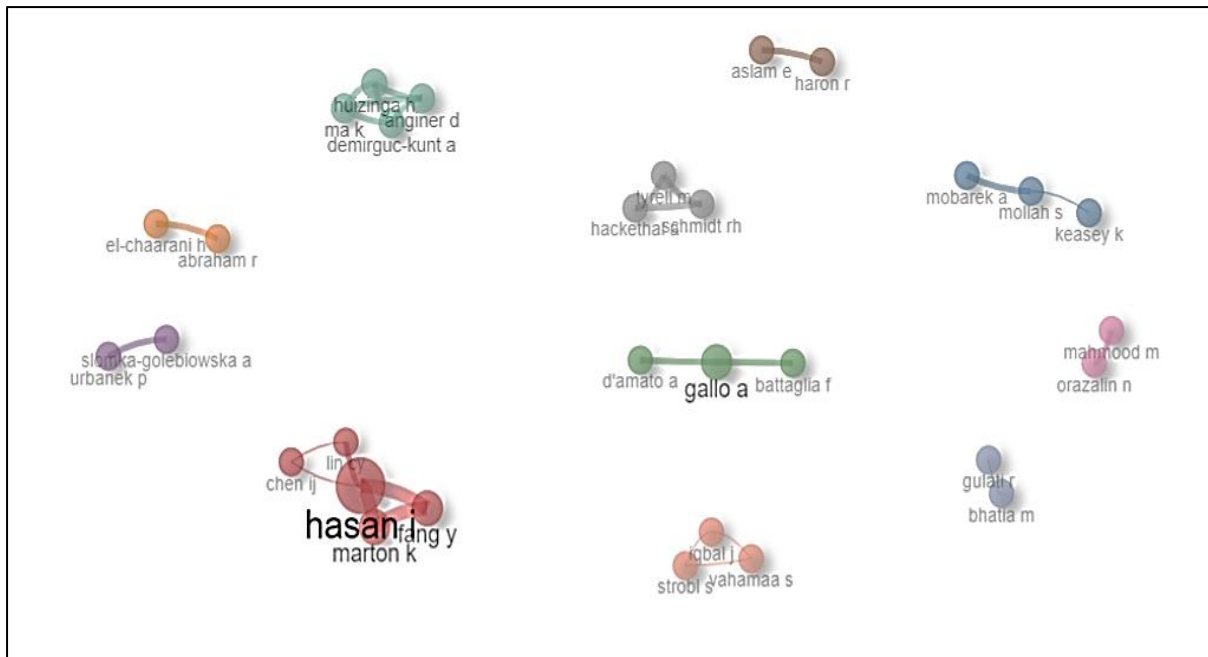
Source: Biblioshiny

Since co-authorship analysis also examines intellectual collaboration at the organization level this section explains the results of co-authorship network analyses, specifically by institutions are explained in this section. In other words, it shows the authors' institutional ties. Figure 9 exhibits the co-authorship analysis results by institutions.

Figure 9. Co-Authorship Analysis – Institutions
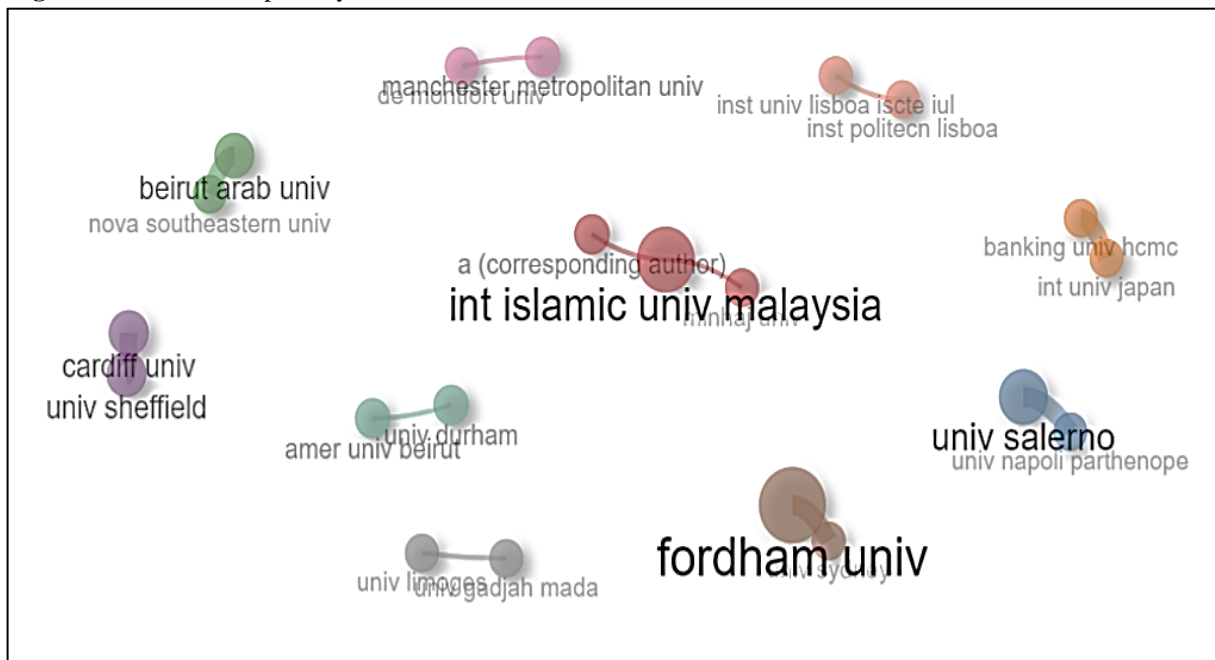
Source: Biblioshiny

As seen in Figure 9, 21 out of 160 institutions are collaborating related to the research topic. The figure includes 10 clusters each cluster has 2 affiliations except the corresponding author existing

in the cluster where International Islamic University Malaysia is the leader. Fordham University is the most influential institution collaborated with University of Sydney, followed by International Islamic University Malaysia. It is noteworthy that these institutions' countries were listed among the top ten list in Table 4.

4. CONCLUSION

Bibliometric analysis, frequently encountered in the literature, allows researchers to see the invisible based on the data of studies conducted in a particular area and a specific period. The results obtained from the analyses facilitated the understanding of the field. The reason why bibliometric analysis is frequently used in the literature is that analyses can be done in a short time with various programs. However, to interpret the analysis results and discover the unseen, the researchers need to know the subject and interpret the bibliometric analysis results with the support of content analysis when necessary. Considering the academic development, the number of academic studies in the corporate governance field is increasing. In this study, as a first in the literature, articles on corporate governance specific to banks were obtained from the Web of Science (WOS) database and analyzed. They focuse primarily on the banking sector because corporate governance in banks is handled differently from other sectors. The reasons for this differentiation are that banks are the key institutions that fulfill the function of transferring funds in the economy, the number of stakeholders is very high, and the problems they experience are not only a sectoral problem but have the potential to affect the entire economy and even the global financial system. In this sense, the banking sector is central to all other sectors. This study aims to support researchers in better analyzing the concept of corporate governance within banking-related research.

The analyses made within the study show that there has been an increase in the production of publications in the field, especially after the 2008 financial crisis. During this period, a financial crisis occurred due to banks and other financial institutions attracted by the returns of risky assets. Many researchers have started to work on the subject to understand the causes of the crisis and learn the necessary lessons.

Most articles on the field were published in the Corporate Governance-International Journal of Business Society. The total number of citations received by the articles published in the Journal of Banking & Finance, the second-ranked journal, is more than that of the articles published in the Corporate Governance-International Journal of Business Society.

Iftekhar Hasan is the author who has done the most work on the subject. Hasan made his first publication on the subject in 2011. He has worked with prominent researchers in corporate governance, such as Hasan, Fang, Marton, and Nguyen, who are co-authors. Hasan's study at Fordham University has made this institution one of the most important universities in the field.

Regarding the production of articles on the subject of the countries, the UK, USA, and China are the countries that produce the most. When co-authored studies are examined based on their countries, the UK and USA are also at the forefront of producing publications with researchers from other countries. It provides a positive interpretation of the research environment in these countries. These countries are also the countries where vital regulations in the field of corporate governance are made (Cadbury Report, 1992; Sarbanes-Oxley Act (SOX), 2002). Therefore, they come to the fore with both research and regulations.

The USA ranks first, considering the number of citations of the produced publications. The article "Bank Governance, Regulation, and Risk Taking" prepared by Levin and Levin and published in 2009, has the largest share in the total number of citations of publications produced in the USA. This article, written after the financial crisis, revealed that regulations affected bank structures differently.

In the co-citation analysis, in which the articles included in the bibliography of the examined articles were examined, a two-cluster structure was reached. While the authors' studies in one of these two clusters are the articles that form the foundations of the field of corporate governance, it is seen that the studies in the other cluster focus on corporate governance, particularly for banks. Similarly, in the co-word analysis, which analyzes the use of keywords together, words such as ownership structure, agency, and investor production, which are the basic concepts of corporate governance, are in one cluster, while words such as Islamic banking, bank performance, corporate bank governance, which are related to corporate governance in banks, are in the other cluster.

Islamic banking is the most frequently included with other keywords in the co-word analysis. 49 out of 285 articles are related to corporate governance in Islamic banking. The fact that the average year of publication of 49 studies is 2019 shows that the field is a relatively new title and is progressing rapidly. When the reasons for this are examined, the rapid growth of Islamic banking and the studies on corporate governance specific to conventional banks can be reworked for Islamic banking. In other words, studies in the field of conventional banking can be a guide for studies in the field of Islamic banking.

Malaysia is important in corporate governance in Islamic banking. Malaysian researchers have strong relations with the UK in the co-authorship. Malaysia has also established co-authoring ties with other Islamic countries. For this reason, it acts as a bridge between the UK and Islamic countries in Islamic banking. Although the UK is not an Islamic country, it is crucial regarding financial size and literary production in Islamic finance.

Limitations

This study has three key limitations; firstly, albeit there are other databases to collect data, Web of Science was chosen because it incorporates the publications with the highest standards. Secondly, in the search process, additional keywords could be selected to reach further articles. Thirdly, to elaborate

further on the topic, other methodologies such as meta-analysis and systematic literature review could be conducted.

The study does not necessitate Ethics Committee permission.

The study has been crafted in adherence to the principles of research and publication ethics.

The authors declare that there exists no financial conflict of interest involving any institution, organization, or individual(s) associated with the article. Furthermore, there are no conflicts of interest among the authors themselves.

The authors contributed equally to the entire process of the research.

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