Knowledge Management, Innovation, and Islamic Banking

Aam Slamet Rusydiana¹, Lia Amaliawati²

¹SMART Indonesia
²Universitas Widyatama, Bandung, Indonesia

The external environment in which the company as an open system operates is constantly increasing dynamically. Companies accustomed to formulating their business strategies by predicting trends in the next five to ten years are frustrated because changes occur quickly and cannot be expected. As companies continue to emerge that are primarily engaged in the banking business and Islamic banking, the competitive competition between one company and another is increasing. This competition is one of the challenges and obstacles the company faces. To overcome this, one way that can be used to be superior to other companies is to make the best use of the information contained within the company, which can be used to meet the company's information needs. In the course of their business, companies will face significant employee turnover. In addition, the knowledge possessed by one employee becomes an asset of the employee himself. This is an obstacle. If the employee who has this knowledge is not in the office or out of the company, the knowledge will go along with the owner. As a result, the cost and time that the company must spend to provide training to new employees are more detrimental to the company. The concept of science that can answer these challenges is Knowledge Management. This study aims to determine the development of Knowledge Management in Islamic Banks research trends published by reputable scopus publication. The data analyzed consisted of 84 indexed research publications. The data is then processed and analyzed using the VoS viewer application to find out the bibliometric map of the development of Knowledge Management in Islamic Bank research.

Keywords: Knowledge Management; Islamic Bank; Bibliometric; VoViewer
INTRODUCTION

The external environment in which the company as an open system operates is constantly increasing dynamically. Companies accustomed to formulating their business strategies by relying on predicting trends in the next five to ten years are frustrated because changes occur very quickly and cannot be expected. Product life cycles are getting shorter. Consumer tastes are constantly changing along with changing lifestyles and technological developments trigger increasingly fierce competition, coupled with the emergence of new competitors from different industries with different strategies. The dwindling profit rate reduces the company's flexibility and ability to continue to grow.

As companies continue to emerge that are primarily engaged in the banking business and Islamic banking, the competitive competition between one company and another is increasing. This competition is one of the challenges and obstacles the company faces. To overcome this, one way that can be used so that a company can be superior to other companies is to make the best use of the information contained within the company, which can be used to meet the company's information needs.

In the course of their business, companies will face significant employee turnover. In addition, the knowledge possessed by one employee becomes an asset of the employee himself. This is an obstacle. If the employee who has this knowledge is not in the office or out of the company, the knowledge will go along with the owner.

As a result, what is more, detrimental to the company is the company's cost and time to provide training to new employees. The concept of science that can answer these challenges is Knowledge Management.

Knowledge management is not a new concept. However, its use in a company still plays a significant role. This is also recognized by Gao, Li, & Clarke (2008), which state that effective and efficient management of organizational knowledge and mobilization of personal knowledge can help achieve the company's goals.

At this time, companies are also competing to find new sources of competitive advantage, which are rare, difficult to imitate, and, if possible, can be used continuously. An excellent organization is an organization that can learn, generate knowledge so that it does not repeat past mistakes and can produce breakthroughs. Senge (1995) emphasized that in a learning organization, learning is human. So knowledge results from learning from humans, which is accumulated into organizational knowledge. The knowledge possessed by humans is not the same, so the combination of human expertise in the organization will produce different organizational understanding. Especially when combined with other knowledge circulating outside the organization.

As stated by English and Baker (2006), companies were busy looking for ways to out-door act better than their competitors in the past. Now the battle is going on to be out know or have a better knowledge strategy than other companies. Based on this background, the author tries to map research related to knowledge management in the Islamic banking industry in relation to innovation. This research uses a bibliometric approach using VoSviewer tools.

LITERATURE REVIEW

Knowledge Management

Knowledge management consists of 2 words, namely management and knowledge. According to the Big Indonesian Dictionary, management is the effective use of resources to achieve goals. According to Afif (2018), the definition of management is a unique and distinctive process consisting of planning, organizing, and mobilizing, and controlling what is done to determine the direction and achieve predetermined goals through the use of human resources and other resources. Meanwhile, according to Ricky W. Griffin in Oxford Dictionaries (2018), management is the process of planning, organizing, coordinating, and controlling every available resource to achieve the goals or objectives that have been determined effectively and efficiently. Effective means that the purposes can be performed according to the existing plan, and efficient means implemented correctly and organized according to a predetermined schedule. So, to put it simply, management is a way to plan, collect and organize, lead and control resources for a purpose.

According to Oxford Dictionaries, knowledge is facts, information, and skills acquired through experience or education; theoretical or practical understanding of a subject. The definition of knowledge in knowledge management is the overall cognition and abilities used by humans to solve problems. Knowledge can also be defined as the capacity to take action effectively. Sources of knowledge can come from books, newspapers, people, and various things.

Knowledge Management (KM) is the process of creating, sharing, using, and managing knowledge and information of an organization (Girard, 2015). Knowledge Management (KM) refers to a multi-disciplinary approach to achieving organizational goals by making the best use of knowledge. KM focuses on acquiring, creating, and sharing knowledge and the cultural and technical foundations that support them (Liu, 2018). So, it can be simplified. Knowledge management is a series of activities organizations, or companies use to identify, create, explain, and distribute knowledge to be reused, recognized, and
learned within the organization. These activities are usually linked to organizational goals and are intended to achieve specific outcomes such as shared knowledge, improved performance, competitive advantage, or higher levels of innovation.

The concept of knowledge management includes human resource management and information technology (IT) to achieve a better corporate organization to win the business competition. The development of information technology does play an essential role in the concept of knowledge management. The mastery of information technology will color almost all activities of human life, so when talking about knowledge management can not be separated from management. Knowledge management is the process of planning, collecting and organizing, leading, and controlling data and information, which has been combined with various forms of thinking and analysis from various competent sources.

Islamic Banking

The existence of Islamic banking reflects the need for a banking system that can contribute to stability in the national financial system. The Islamic banking industry also reflects public demand for an alternative banking system that provides banking services that comply with sharia principles (Machmud and Rukmana, 2011). The growth of Islamic banking, which is still relatively good compared to banking in general and Islamic finance globally in an economic condition that is still in the recovery stage, proves that national Islamic banking can survive its existence and development in facing the financial situation. However, it has challenges, among others, in terms of resources. Human resources (HR), network products, and capital compared to conventional and global Islamic banking (Islamic Banking Outlook, 2016).

The lack of Islamic banking innovation in managing new products and services is caused by various factors, ranging from regulatory issues to internal problems such as organizational culture and the lack of optimal knowledge management strategies to encourage innovation in companies (Jiménez, 2008). The facts show that the innovation of Islamic banking products in Indonesia is still lacking and far behind. This fact is supported by the statement of BI Director of Sharia Banking, Mulya Siregar, who stated that the innovation of Islamic banking products is still low. The development of Islamic banking products that are genuinely excavated from the roots of sharia will emphasize the difference between Islamic and conventional banking. Some products that can be extracted from the sources of sharia but have not yet appeared in Indonesia, he mentioned, among others, sharia bank management products and mudarabah financing. Most of the (existing products) are Murabaha, similar to conventional loans. The biggest obstacle, according to him, is the incompatibility of the supply of university graduates with the needs of the Islamic banking industry. Product innovation must be a priority strategy for Islamic banks because innovation is essential in a competitive market. The Islamic banking industry is required to continue to make innovations.

The importance of knowledge management in Islamic banking is expected to increase the ability to create new products, services, and systems that can be continuously adapted to current conditions but are still based on the principles and philosophy of Islamic banks themselves.

RESEARCH METHODS

This study uses data on papers sourced from various journals from 2007-2021 with research themed Knowledge Management in Islamic Banks. Data collection was carried out by searching for articles indexed by the Google Scholar database. The search was carried out by typing the keyword 'Knowledge Management in Islamic Banks, then selected papers relevant to the research theme Knowledge Management in Islamic Banks, for journal criteria filtered and processed in software indexed by Google Scholar is only a journal with a DOI. From the search results, there are 84 articles published from 2007-2021. Data in the form of topics used in the publication of papers with the theme Knowledge Management in Islamic Banks and analyzed using Microsoft Excel 2010. The trend of publication development on Knowledge Management in Islamic Banks was analyzed using VOSViewer software.

The computer program that was introduced was called VOSviewer. VOSViewer is a program developed for creating and viewing bibliometric maps. This program is available free of charge to the bibliometric research community (see www.vosviewer.com). VOSviewer can create author maps or journals based on co-citation data or create keyword maps based on shared incident data. The program offers a viewer that allows bibliometric maps to be examined in detail.

VOSViewer uses the VOS mapping technique to build the map, where VOS stands for visualization similarity. For previous studies where the VOS mapping technique was used. VOSviewer can display maps constructed using appropriate mapping techniques. Therefore, this program can display maps built using the VOS mapping technique and display maps created using multidimensional scaling techniques. VOSviewer runs on many hardware and operating system platforms and can be started directly from the internet.
RESULTS AND DISCUSSION

The following is a table showing the collection of documents used in research with the theme Knowledge Management in Islamic Banks in library research. Of the total 84 documents used, they are divided into four types of documents, including journal articles (70 documents), anthology/book chapters (2 documents), Conference Papers (8 documents), and Reviews (4 documents).

<table>
<thead>
<tr>
<th>No</th>
<th>Document Types</th>
<th>Number of Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Journal article</td>
<td>70</td>
</tr>
<tr>
<td>2</td>
<td>Book chapter</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Conference Paper</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>Review</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>84</td>
</tr>
</tbody>
</table>

Based on the results of the grouping of document types above, the most widely used document types as research subjects with the Palace Library theme are documents in the form of Journal articles with a percentage of 83.33% or as many as 70 documents. Meanwhile, the fewest documents used were in a review of 2.39% or as many as two documents. This shows that the references used are quite valid because most of them come from documents in the form of scientific journals.

Bibliometric Graph Analysis

Bibliometrics is based on the calculation and statistical analysis of scientific outputs in articles, publications, citations, patents, and other more complex indicators. It is an essential tool in evaluating research, laboratory, scientist activities, and scientific specialization, and country performance. After establishing the background for bibliometric development, the report presents the database from which the bibliometric was created, as well as the primary indicators used.

In this section, a visual mapping chart from 84 journals published by Knowledge Management in Islamic Banks will be presented to explore the meta-analysis results. The results of the keyword mapping analysis become the basis for mapping together important or unique terms contained in specific articles. Mapping is a process that enables one to recognize elements of knowledge and their configuration, dynamics, interdependencies, and interactions.

Related to bibliometrics, science mapping is a method of visualizing the field of science. This visualization is done by making a landscape map that can display topics from science (Royani et al., 2013). The results of network visualization from 84-word map journals with the theme Knowledge Management in Islamic Banks can be seen:

Bibliometric Author Mapping

Using the VOSViewer software, we found the author's bibliometric mapping, as shown in the following figure. The bigger the shape and the brighter the color, the author is publishing more and more his writings related to Knowledge Management in Islamic Banks.
The appearance of the cluster density depends on the level of yellow light brightness. This identifies that the yellow color on the map depends on the number of items associated with other things. This section helps get an idea of the general structure of a bibliometric map by paying attention to which parts of the light are considered essential to analyze. It is possible to interpret the authors who have published the most from the map.

In general, each researcher has different tendencies. Some writers are indexed as a single author, others co-author with other researchers so that multiple clusters appear, indicating different densities. However, the authors with a reasonably large density show that they publish more research on the theme of Knowledge Management in Islamic Banks than those with a lower density. These results can be used as a reference for future researchers.

Based on these results, the bigger and brighter the author's name, the more papers he publishes. The author's most printed publications related to Islamic banks' knowledge management are based on bibliometric mapping, namely Amin H.

Bibliometric Institutions Mapping

In bibliometric analysis, the author's institution can be seen from which institution they come from. We were able to interpret the institutions that wrote the most publications through these results.

Figure 1: Bibliometric Author Mapping

![Bibliometric Author Mapping](image1)

Figure 2: Bibliometric Institutions Mapping

![Bibliometric Institutions Mapping](image2)
Based on the following figure, the cluster of institutions seen with large circles shows how productive these institutions have contributed in publishing papers with the theme Knowledge Management in Islamic Banks. The most significant number of institutions is calculated from the number of publications and links to other institutions, where an author can write many papers in different journals. The most popular institutions are calculated based on the number of publications and links to other institutions, where a paper writer can write many papers in different journals. The most well-known ranking of institutions shown by the results of bibliometric mapping is the Faculty of Economics and Muamalat, Universiti Sains Islam Malaysia, Malaysia.

**Bibliometric Country Mapping**

Furthermore, the visualization of the journal publisher mapping is illustrated in the bibliometric image of the journal source below. Based on the picture, it can be seen that several clusters of countries appear to publish the most articles with the theme Knowledge Management in Islamic Banks.

![Bibliometric Country Mapping](image)

Based on the picture above, the larger the circle of the publishing country, the more papers that government publishes. Seen that the land of Malaysia has the brightest light. This means that Malaysia publishes the most papers on Knowledge Management in Islamic Banks compared to other countries.

**Bibliometric Keyword Mapping**

VOSViewer can also find the bibliometric mapping of the most used keywords in the Knowledge Management in Islamic Banks theme related to Islamic economics and finance. The bibliometric mapping of the keywords used can be seen in the image below. Keywords with a more effective form indicate that the word is used more in journals related to Islamic banks' knowledge management.
Some of the keywords that often appear in papers with the theme of Knowledge Management in Islamic Banks are divided into 5 clusters, namely:


- Cluster 2 in green color consists of 11 keywords: Accounting, Central Bank, Competency, Demand, Industry, Islamic Finance, Islamic Financial Institution, Shariah, Shariah Compliance, Skill, Stakeholder.

- Cluster 3 in blue color consists of 7 keywords: Awareness, Commitment, Intention, Interest, Islamic Banking Industry, Islamic Value, Lack.


- Cluster 5 in purple color consists of 4 keywords: Bank Size, Dual Banking System, Dynamic, Influence.

Keywords divided into 5 clusters above are arranged in colored circles that indicate the indicating cluster. This data can be used to determine the trend of keywords in the last year.

The bibliometric analysis shows several keywords widely used in the paper, which are the object of research. The more keywords that appear, the wider the circle is shown. Meanwhile, the line relationship between keywords shows how related they are to other keywords.

**Bibliometric Index Mapping**

Then, this study also obtained results in the form of an index that is often used by the author and is interrelated in the theme of Knowledge Management in Islamic Banks, which is related to Islamic economics, as shown in the image below. An index that has the same color indicates a very close relationship.
Based on the results obtained, the lighter the color, the more the index is used. In the word index of the paper with the theme of Knowledge Management in Islamic Banks related to Islamic economics, several words are most widely used, namely Knowledge Management, followed by the words' Banking and Knowledge.

**FINDINGS**

Table 2: Keyword, Authors and Institution with The Highest Publication

<table>
<thead>
<tr>
<th>Rank</th>
<th>Keyword Occurence</th>
<th>Authors with The Highest Publication</th>
<th>Institution with The Highest Publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Islamic Banks</td>
<td>Amin H.</td>
<td>Faculty of Economics and Muamalat, Universiti Sains Islam Malaysia, Nilai, Malaysia</td>
</tr>
<tr>
<td>2.</td>
<td>Knowledge Management</td>
<td>Kamarudin F.</td>
<td>Ahlia University, Bahrain</td>
</tr>
<tr>
<td>3.</td>
<td>Islamic Banking</td>
<td>Tabash MI.</td>
<td>Brunel University, United Kingdom</td>
</tr>
<tr>
<td>4.</td>
<td>Islam</td>
<td>Grassa R.</td>
<td>Griffith University, Australia</td>
</tr>
<tr>
<td>5.</td>
<td>Banking</td>
<td>Buallay A.</td>
<td>University of Wollongong, Australia</td>
</tr>
<tr>
<td>6.</td>
<td>Knowledge</td>
<td>Hamdan A.</td>
<td>Accounting and Finance, Universiti Putra, Malaysia</td>
</tr>
<tr>
<td>7.</td>
<td>Banks</td>
<td>Archer S.</td>
<td>King Abdulaziz University, Saudi Arabia</td>
</tr>
<tr>
<td>8.</td>
<td>Conventional Banks</td>
<td>Alam MK.</td>
<td>Labuan School of International Business and Finance, Universiti Malaysia Sabah-Labuan International Campus, Malaysia</td>
</tr>
<tr>
<td>9.</td>
<td>Risk Management</td>
<td>Hosen S.</td>
<td>Department of Economics, Kulliyyah of Economics and Management Sciences, International Islamic University Malaysia, Malaysia</td>
</tr>
<tr>
<td>10.</td>
<td>Performance</td>
<td>Thakur OA.</td>
<td>New York Institute of Technology, Bahrain</td>
</tr>
</tbody>
</table>

Knowledge management in Islamic banking can be done by conducting market research and investing in research and development. Research is crucial for managing knowledge, which will lead to competitive and creative product and service results and, in turn, will lead to growth and profit. Islamic banks must transform research data into information that can be used to be considered in making strategies. This information can then be used to take appropriate action.

Central bank governors of several countries have implemented knowledge management principles in their financial institutions. They determined that the primary purpose of implementing knowledge management is to support disseminating and sharing information among bank employees, as is the case in other institutions. The World Bank has proven to have
difficulty in knowledge management due to poor integration of their knowledge. Some of this may be due to the problem of attracting and integrating data from multiple sources. The concept of knowledge management is still in the early stages of adoption as a strategy for developing banking institutions, especially Islamic banking. Through knowledge management, it is hoped that all parties in banking can exchange ideas or information even more, participate, and be empowered to solve problems (Cader et al., 2013).

One way to implement knowledge management is by, for example, increasing the quality and quantity of Islamic banking product innovations. In addition, by increasing training and research, institutions always need to produce better performance. The complexity of knowledge management in Islamic banks is determined by the quality of knowledge, knowledge perspective, openness of company boundaries, and components of knowledge assimilation and synthesis (Nurdin et al., 2018). There is a strong correlation between knowledge management, innovation, quality human resources, and good business value, so bank executives need to share expertise and collaborate with research institutions, not only to rely on pre-existing knowledge but also experimenting with developing knowledge and learning from other financial institutions (Alomari et al., 2020).

In theoretical constructs, knowledge management systems aim to unify various knowledge activities related to productivity in organizations, including the innovation of new products or services. This makes knowledge management a central and explicit part of the mission of banking institutions, including Islamic banking. The objectives of Islamic banking, such as increasing market share, improving knowledge-based innovative products or services, enhancing innovative strategies that lead to customer and stakeholder satisfaction, and accumulation of knowledge that is beneficial to human welfare and profit, all stem from a statement of planning and managing knowledge management carefully crafted (Cader et al., 2013).

On the other hand, the use of technology in knowledge management can improve the performance of Islamic banking. Employees with more understanding and knowledge can produce creative and innovative ideas to produce new Islamic banking products and new marketing strategies (Nurdin, 2016). Innovation is the key to the success of Islamic banks, so innovation depends on the availability of various knowledge and their knowledge management systems (Nurdin et al., 2018; Nurdin & Yusuf, 2020).

Knowledge classification is carried out in knowledge management by identifying the types of knowledge that are useful for Islamic banking. For example, understanding customers, products, processes, and competitors include best practices, knowledge and value heuristics, patterns, business processes, frameworks, and technology. In addition, knowledge implementation has knowledge sharing (knowledge sharing among employees provides expertise in product development, and knowledge about customer needs, attitudes, and satisfaction. Thus, knowledge sharing contributes to innovation), organizational environment (studying the corporate climate to evaluate factors -determining factors of organizational culture that support knowledge sharing, creativity and creation), organizational strategy (forecasting the future of the business or drawing policies in the long term, to increase presence in the market and maintain a strong position in the related industry or economy), organizational structure (encourage implementation of company values, such as pleasing customers and helping each other), communication (related to cooperation and building trust between employees and also between different departments in the hierarchical organization of the company), employee motivation (motivating employees and building trust between them will encourage them to think creatively in the right direction and will even eliminate types of defects and errors), and business evolution (related to the adoption of appropriate technology, and improving research and technical systems used) (Alrawi & Elkhathib, 2011).

In the end, in facing various economic challenges, the survival of Islamic banking is significant. Therefore, Islamic banking must be more innovative in cutting operating costs, reengineering production processes, and finding new products or services to remain relevant in the market. Knowledge management has been identified as an essential element critical for Islamic banking to be innovative (Bakar & Hashim, 2011). The processes that need to be carried out include innovation, renewal, operational procedures, and the process of offering financial services (Alomari et al., 2020).

Knowledge management is one aspect of company operations that requires technical support. Technology enhances Knowledge Management to support new strategies, processes, methods, and techniques to create better, disseminate, share and apply the best knowledge, anytime and anywhere, across teams, across organizations, and across multiple organizations, especially its clients, customers, partners, suppliers and other key stakeholders.

Technology support is considered very important for KM in an institution. KM projects tend to be successful when advanced technology infrastructure is implemented and deployed within the organization. Several IT infrastructures have been used to support knowledge management processes such as email, document management, data warehousing, workflow software, decision support systems, etc. Other IT infrastructure technologies such as Intranets, document management systems, information retrieval engines, group goods, workflow systems,
brainstorming applications, and data warehousing and mining tools can also be used in knowledge management (Nurdin, 2016).

Islamic banks must integrate knowledge management into Islamic legal beliefs and standards before storing, sharing, utilizing, and enhancing them, as seen in the theoretical model (Nurdin & Yusuf, 2020). However, knowledge resources are essential to building a stable organizational environment. However, as knowledge and information proliferate and become increasingly available via the internet, management and organizations are faced with the problem of navigating the ocean of information. Knowledge management systems are becoming an essential tool for today's banking service environment (Alrawi & Elkhatib, 2011). It is important to emphasize that knowledge management systems providing organizations with a sustainable competitive advantage require integration with resources and competencies. These are necessary to develop and maintain a sustainable competitive advantage through product and process innovation. In this situation, the knowledge management system is critical in turning learning skills and core competencies into sustainable benefits by facilitating and updating the company's learning and resource development processes (Bakar & Hashim, 2011).

**CONCLUSION**

This study aims to determine the extent of developing the theme of Knowledge Management in Islamic banks globally. The results show an increasing number of papers published on this theme from 2007 to 2021. More than 84 studies have been published on this theme. Bibliometric mapping visualization shows that Amin H. has written the most about Islamic banks' knowledge management. The institution that publishes the most papers related to Knowledge Management in Islamic Banks is the Faculty of Economics and Muamalat, Universiti Sains Islam Malaysia, Value, Malaysia. And the country that publishes the most papers related to Knowledge Management in Islamic Banks in Malaysia.

The Knowledge Management in Islamic Banks research development map is divided into 5 clusters. Cluster 1 consists of 16 topics, cluster 2 consists of 11 topics, cluster 3 consists of 7 topics, cluster 4 consists of 7 topics, and cluster 5 consists of 4 topics. In the word index with Knowledge Management in Islamic Banks, the most widely used term is Knowledge Management.

Recommendations that can be given to academics are to continue to develop scientific research on the theme of halal economics, especially by utilizing bibliometric results, for example, using popular keywords, selecting references based on the most popular authors, institutions, countries, keywords, and indexes. Academics can also expand the study of halal economics literature with more specific references, such as articles indexed by Scopus, or using other software to produce more diverse bibliometric mappings, such as R Biblioshiny.

**REFERENCES**


