

DIGITAL BANKING PERFORMANCE: A SYSTEMATIC REVIEW AND BIBLIOMETRIC ANALYSIS

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Abstract

The purpose of this research is to systematically examine academic literature of e-banking over the last five years, or from 2016 to 2021. This study will look specifically at the development trend of e-banking literature. This study used a mix method approach, combining bibliometric methods and a literature review. This research provided usage 202 datasets from international publications with the keywords bank financial performance from 2016 to 2021, gathered via web scraping and sourced from the Scopus database. The articles used as data were screened using the quartile Scopus classification, with only articles Q1 and Q2 being used. According to the findings of this study, the most rapid growth in the topic area of bank financial performance from 2016 to 2021 occurred in 2019, with a total of 45 articles indexed by Scopus. The journal Banks and Bank Systems has the most international publications, with 9 articles. Furthermore, development maps are classified into eight clusters based on co-occurrence and keywords. The scope of the articles used, which were sourced from the SCOPUS database, is the research's limitation. In the future, in addition to conducting research using broader literature sources, the recommendations in this study can be used as hypotheses, and comprehensive and in-depth follow-up research can be conducted. The findings of this study are expected to serve as a resource for academics researching bank financial performance. The literature and bibliometric studies on the issue of bank financial performance could be Indonesia's first systematic literature review.

Keywords: Bank, Financial Performance, Systematic Review, Bibliometric Analysis

INTRODUCTION

This template, modified in MS Word 2007 and saved as a “Word 97-2003 Document” for the PC, provides authors with most of the formatting specifications needed for preparing electronic versions of their papers. All standard paper components have been specified for three reasons: (1) ease of use when formatting individual papers, (2) automatic compliance to electronic requirements that facilitate the concurrent or later production of electronic products, and (3) conformity of style throughout a conference proceedings. Margins, column widths, line spacing, and type styles are built-in; examples of the type styles are provided throughout this document and are identified in italic type, within parentheses, following the example. Some components, such as multi-leveled equations, graphics, and tables are not prescribed, although

the various table text styles are provided. The formatter will need to create these components, incorporating the applicable criteria that follow.

The fourth industrial revolution alters the course of people's lives in a variety of ways. One of the noticeable changes is the transition to the digital era, which affects all aspects of life, including the financial institution, such as banks, insurance companies, and financing firms. The Indonesian financial industry is challenged to respond quickly to various changes in the current digital era. In this paper scope, the banking sector is undergoing a digital transformation from the conventional form to digital banking. The phenomenon of financial technology (fintech) development is also one of the drivers of the banking sector in developing digital banking [4],[7], [8], [15], [27], [30]. The availability of online banking has altered the way most of its customers conduct their transactions. Banks and other financial institutions can maintain their competitiveness as they transition to a digital-dominated environment by utilizing Open Banking. Consumer habits have shifted. Digital technology creates competition, and the arrival of fintech creates competition in the banking industry. Consumer behavior shifts necessitate banks becoming more adaptable to digital technology [4], [7], [8], [15], [27], [30].

The establishment of Indonesian Fintech Association (AFI) in 2015 shows the importance of networks in providing qualified business partners and drives to growth of Fintech in Indonesia. The growing use of the internet in Indonesia has become one of the government's reference points for bringing innovation to financial services. The Financial Services Authority has registered and supervised over 150 fintechs to date (OJK). This raises the question of how do conventional banks compete with Fin-tech firms in Indonesia.

According to survey data from the Sharing Vision Telematics Research Institute in December 2020, there has been a shift in payment system business players in Indonesia since the financial technology industry began to flourish in the country. Banking dominated the payment system market leader in 2015. However, digital wallet fintechs began to shift in 2019 and are now at the top of the list. This phenomenon drew the attention of Bank Indonesia, which stated that while banks dominated in terms of digitalization in 2015, by the end of 2019, the role of non-banks had emerged, resulting in extraordinary developments. With the rapid development of the role of fintech, Indonesian banks are often left behind in digital transformation.

The shifting/changes in financial transactions from millennial generation customers creates an obligation/necessity for banks to carry out digital innovation and digital transformation, do or die [10]. This shift creates new challenges and opportunities in the banking industry. Companies must strive to outperform their competitors and maximize profits in accordance with their objectives. As a result, the company is constantly striving to improve its performance in order to win the competition and ensure the company's survival. Good performance can result in a slew of good systems that can later be used to make business decisions. Based on this phenomenon, the purpose of this study is to systematically examine research references pertaining to financial performance in the banking sector over the last five years, or from 2016 to 2021. This study will specifically examine the data-driven development trend of financial performance research in the banking sector into four issues: the pattern of digital bank

transformation, the measurement metrics used to evaluate the digital banking performance, other emerging themes and lastly, the future research direction.

LITERATURE REVIEW

Bank financial performance

According to [23] the bank's financial performance is part of the bank's overall performance, which is an achievement achieved by the bank in carrying out its operational activities related to aspects of marketing, finance, funding, human resources, and technology within a specific time frame. The goal is to maximize profit as determined by an examination of the data contained in the bank's financial statements. He went on to say that the literature on bank performance focuses on the main profitability indicators, such as Net Interest Margin (NIM), Return on Assets (ROA), and Return on Equity (ROE). Many empirical studies, such as [3], [9], [13], [14], [29] and [31] examine factors that affect bank performance, both internal and external. Internal factors influencing bank management decisions include liquidity, credit ratios, capital ratios, operational efficiency, and bank size. External factors, on the other hand, are related to the industry, such as government policies or regulations, ownership, and macroeconomic indicators such as inflation, GDP growth, and macro-financial growth.

Literature review

The literature used in this study is based on data from Scopus publications, which are then critically analyzed using a literature review approach. This method is a critical analysis research method that is used on specific topics, in this case stock returns, using various library sources [2], [12], [22]. This method is widely used in a variety of fields, including economics, management, and information technology.

Bibliometric analysis

A quantitative method for analyzing bibliographic data in articles/journals is bibliometric analysis. This analysis is typically used to investigate references to scientific articles cited in a journal, to map a journal's scientific field, and to classify scientific articles according to a research field. This method is applicable to sociology, humanities, communication, marketing, and other social groups. The citation analysis approach is used in bibliometric analysis to find one article cited by another, and the co-citation analysis approach is used to find two or more articles cited by one. The words (co-words) used in a document can reveal the concept of science contained within it. Co-word analysis is based on the co-occurrence of words or keywords in two or more documents that are used to index documents [5]. The use of non-standardized keywords can result in non-uniform terms, and a thesaurus is required to standardize them. A thesaurus is a glossary of terms that covers a specific field, allowing for more specific terms to be used. A thesaurus is not the same as a list of subject headings, which are usually broad in scope and cover all areas of knowledge. The use of descriptors in indexing is an attempt to represent a single concept. Using a thesaurus to standardize keywords aims to ensure that the words used are consistent, so that only one term is used for concepts represented in different writings and have the same meaning.

METHOD

In this study, the mix method approach [25] was used, which combined bibliometric methods and a literature review (see Fig. 1). This research provided use of data from international publications with the keywords bank financial performance from 2016 to 2021 (see fig. 2), which were collected via web scraping and sourced from the Scopus database (www.scopus.com). The articles used as data were screened using the quartile Scopus classification, with only articles Q1 and Q2 being used.

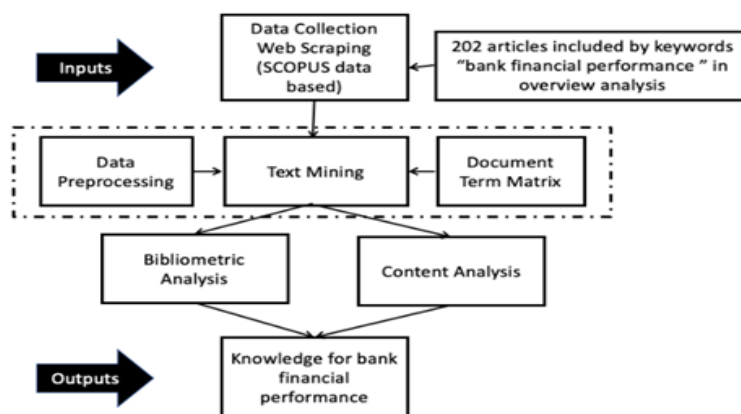


Figure 1: Literature review and bibliometric flow chart

Source: The author's own study, 2022

Litmaps was also used to analyze data on the number of publications per year, journals containing articles, authors, and subjects. Furthermore, VOSviewer software is used to analyze the development trend of international publications, which is followed by qualitative content analysis. VOS viewer is software that allows you to create and visualize bibliometric networks. Individual journals, researchers, or publications, for example, can be included in these networks, which can be built on citations, bibliographic aggregations, co-citing, or co-authoring relationships. VOS viewer also includes text mining functionality for creating and visualizing co-occurring networks of key terms from scientific literature.

RESULT AND DISCUSSION

Corpus profile

Fig. 2 depicts the number of articles used in this study in accordance with the context. According to the review, studies on bank financial performance experienced consistent growth from 2016 to 2021. Although its popularity has not been as widespread as that of other topics. This distribution trend, on the other hand, indicates that this topic is beginning to receive attention from academics or researchers in a variety of fields. Although there was a 15% decrease from 2016 to 2017, or from 28 articles in 2016 to 23 in 2017. However, this trend accelerated dramatically in 2018, reaching 36 articles, a more than 50% increase. While 2019,

with a total of 45 articles, can be considered the peak of the highest increase. Throughout the COVID-19 pandemic, the trend of academics or researchers studying this topic appeared to be consistent. Articles on bank financial performance remained stable in 2020, with a total of 43 references. Despite the fact that it is decreasing, articles on this topic will have 27 references by 2021. In this field, research trends can be described as stable. The figure below depicts the distribution of literature on the topic of bank financial performance.

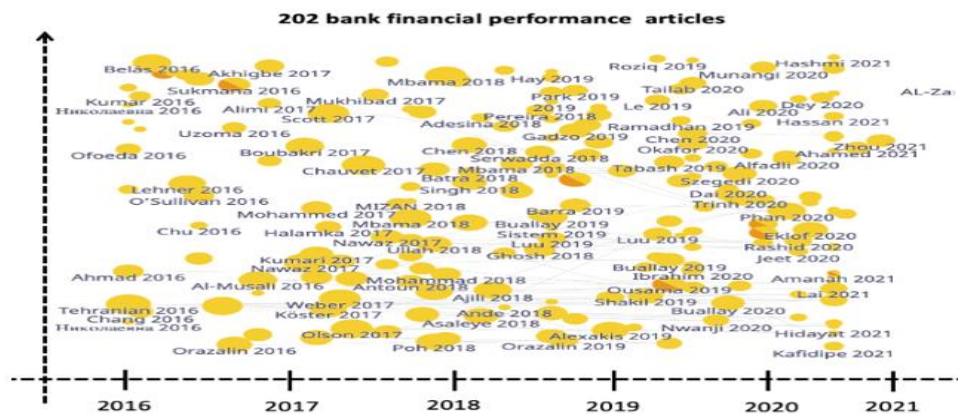


Figure 2: Trends in the distribution of scientific literature on bank financial performance for the period 2016-2021

Source: The author’s own study, 2021

Fig. 2 shows that research on bank financial performance continues to be a popular topic among academics. At least as evidenced by a consistent distribution year after year. However, based on the network of articles, the picture shows that no researchers or articles dominate the scope of research on bank financial performance. Each article's nodes or circle illustrations are fairly uniform in size, though there are a few that appear larger than others but are not significant.

The current trend of bank financial performance research

Furthermore, the content of the articles or references used will be examined, particularly in terms of title and context. During this phase, the entire literature will be treated as a text or corpus, which will be analyzed and classified based on topic and context. This review employs DTM in the form of word frequency as the output of the text mining process, which is visualized and analyzed qualitatively using VOS viewer.

The most recent journal on bank financial performance

On the basis of Scopus data, 202 publications were obtained based on search results for the keywords bank financial performance with the categories of article title, abstract, keywords from 2016 to 2021. The journal Banks and Bank Systems has the most publications of these, with 9 articles. The Academy of Accounting and Financial Studies Journal comes in second with a total of seven articles. The Journal of Islamic Accounting and Business Research comes in third place, with a total of six articles. The International Journal of Islamic and Middle

Eastern Finance and Management and the Journal of Asian Finance, Economics, and Business were ranked fourth and fifth, respectively, with 5 articles each. As shown in Table 1, research on the development of bank financial performance can be seen in at least five published articles from five journals.

Table 1: Top 5 latest journals in the scope of bank financial performance for the period 2016-2021

No.	Name of journal	Number of articles
1	Banks and Bank Systems	9
2	Academy of Accounting and Financial Studies Journal	7
3	Journal of Islamic Accounting and Business Research	6
4	International Journal of Islamic and Middle Eastern Finance and Management	5
5	Journal of Asian Finance, Economics and Business	5

Source: The author's own study, 2022

Table 1 shows that the majority of the journals that discuss the issue of bank financial performance extensively are journals with backgrounds or scope areas in economics, finance, and even accounting. This data demonstrates that the issue of bank financial performance is still rarely discussed in the context of research management.

Comprehensive network analysis of bank financial performance research

Throughout this session, all articles will be bibliographically analyzed using the VOSviewer tool. The network and density of articles will be visualized in this analysis. Fig. 3 depicts the development map of the Scopus indexed bank financial performance topic area from 2016 to 2021, which can be divided into eight clusters based on co-word analysis. Cluster 1 is colored red and contains nine topic items: Bahrain, comparative analysis, comparative study, conventional bank, global financial crisis, impact, Islamic, Islamic bank, and Malaysia. Cluster 2 is shown in green and consists of eight topic items such as board, corporate governance, deposit money bank, empirical investigation, Nigeria, Nigerian deposit money bank, relationship, and study. Bank financial performance, China, corporate social responsibility, empirical evidence, perception, and role are among the six topic items in blue cluster 3. Cluster 4 is yellow, and it contains six topic items: cases, commercial banks, effects, financial performance, Jordanian banks, and Vietnam.

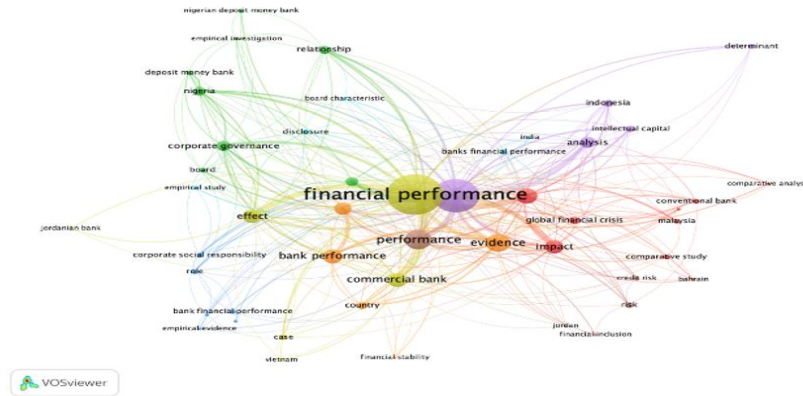


Figure 3: Text network analysis of bank financial performance research

Source: The author’s own study, 2022

Cluster 5 is purple, and it contains five topic items: analysis, bank, determinant, Indonesia, and intellectual capital. Cluster 6 is light blue and contains five topic items such as bank financial performance, board characteristics, disclosure, empirical study, and India. Cluster 7 is orange, and it contains five topic items: bank performance, country, evidence, financial crisis, and financial stability. Cluster 8 is pink and includes five topic items: credit risk, financial inclusion, Jordan, performance, and risk.

Fig. 4 depicts the network analysis results, which revealed that the correlation between nodes was divided into eight network clusters. Inner cores are clusters with a high frequency of occurrence of nodes and heavy edges. This cluster is a visual representation of the most frequently discussed issues in the context of bank financial performance. An outer core, on the other hand, is a cluster with a low frequency of node occurrence and a small edge weight. This cluster represents the issues that have received the least attention in the literature on bank financial performance.

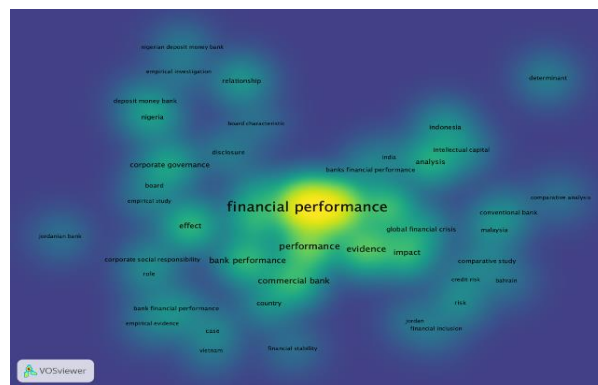


Figure 4: Density analysis of bank financial performance research

Source: The author’s own study, 2022

This review also exemplifies that the weights of nodes and edges in the inner core network vary, as indicated by the size scale of circles and connecting lines. The greater the weight or degree, the thicker the line connecting the two nodes and the larger the circle. Nodes and edges on a large scale are issues that are frequently discussed and are the essence of the topic of bank financial performance. This visualization is emphasized by labeling each node, as indicated by the identity token. These tokens or nodes represent issues that have received a lot of attention in the literature.

According to the definition, bank financial performance is the establishment of specific measures that can be used to assess the bank's success in generating profits. As a result, the above visualization of network analysis is contextually related to the empirical study of bank financial performance. As a result, some of the nodes that appear are terms that are commonly used in the context of banking and financial performance.

The VOS viewer tool also visualizes density-based analysis. This means that based on the color density in the visualization area, this illustration will make it easier to identify the contexts that are most frequently studied.

The review provides some critical information that can be classified into at least four major issues. First, based on the research sites, it is interesting to note that the majority of the countries are developing Asian countries such as Bahrain, Malaysia, Vietnam, Indonesia, and some of Asia's largest economies, namely China and India. Jordan and Nigeria are two other countries that are frequently studied. Second, based on the type of research approach used, data analysis reveals that the majority of the research employs an empirical study approach and case studies. Comparative analysis and causal relationships are two types of research that have been conducted. Third, in terms of context or research scope, several fields of study, including economics, finance, and accounting, dominate the studies related to. Indeed, this data analysis reveals that the topic of bank financial performance is still rarely discussed in the context of research management. Fourth, according to the review's findings, the most frequently raised issues are Islamic banks, corporate governance, commercial banks, conventional banks, corporate social responsibility, the global financial crisis, credit risk, and financial stability.

This study confirms that the visualizations that appear in network analysis are representations of issues that are frequently discussed based on the topics that are frequently researched. However, this review does not argue that low frequency is a minor issue. On the other hand, perhaps these issues (the outer core) are still under-researched areas of study or approaches that are rarely used. This cluster may require additional attention in future research.

This study comprehensively formulates ten points related to the studies that are needed and still little done in the context of research management, based on the framing of the network analysis context and supported by various financial performance literatures. Several empirical studies examining bank performance related to Organization Agility, Digital Technology, Intellectual Capital, and Ambidexterity Organizations include: [1], [6], [8], [11], [26], [32].

Previous research from 2017 to 2021 also shows that several factors influence banking performance in the era of the Industrial Revolution 4.0 and Society 5.0 in Covid pandemic

conditions through business agility. Operational management, knowledge management, firm performance, employee empowerment, intellectual capital, human resource management, organizational learning, dynamic talent management capabilities, organizational culture, knowledge sharing, transformational performance, new product development, dynamic capabilities, strategic transformation, marketing, scenario planning, cash flow and debt, fuzzy agility index, organizational creativity, and Information technology are some of them. This study recommends extensive research on Digital Innovation, intellectual capital, and organizational Ambidextrousness as factors that affect Organizational Agility and impact Banking Performance. In the context of bank financial performance, this issue is still very rarely studied and empirically proven.

As a result, this review suggests further research into the role of Digital Innovation, Intellectual Capital, and Ambidextrous Organizations in improving financial performance as mediated by Organizational Agility in the current technological and pandemic era.

CONCLUSION

Based on the findings and discussion of this study, it is concluded that the most rapid growth in the topic area of cellular payments from 2016 to 2021 occurred in 2019, with a total of 45 articles indexed by Scopus. The journal Banks and Bank Systems has the most international publications, with 9 articles. Furthermore, development maps are classified into eight clusters based on co-occurrence and keywords. This review, on the other hand, abstracts research trends in bank financial performance into four major issues. First, based on the research sites, it is interesting to note that the majority of the countries are developing Asian countries such as Bahrain, Malaysia, Vietnam, Indonesia, and some of Asia's largest economies, namely China and India. Jordan and Nigeria are two other countries that are frequently studied. Second, based on the type of research approach used, data analysis reveals that the majority of the research employs an empirical study approach and case studies. Comparative analysis and causal relationships are two types of research that have been conducted. Third, in terms of context or research scope, several fields of study, including economics, finance, and accounting, dominate the studies related to. Indeed, this data analysis reveals that the topic of bank financial performance is still rarely discussed in the context of research management. Fourth, according to the review's findings, the most frequently raised issues are Islamic banks, corporate governance, commercial banks, conventional banks, corporate social responsibility, the global financial crisis, credit risk, and financial stability.

This result recommends more research into digital innovation, intellectual capital, and organizational ambidextrousness as factors influencing organizational agility and its impact on banking performance. In the context of bank financial performance, this issue is still very rarely studied and empirically proven. As a result, this review suggests further research into the role of Digital Innovation, Intellectual Capital, and Ambidextrous Organizations in improving financial performance as mediated by Organizational Agility in the current technological and pandemic era. The scope of the articles used, which were sourced from the SCOPUS database, is the research's limitation. In the future, in addition to conducting research using broader

literature sources, the recommendations in this study can be used as hypotheses, and comprehensive and in-depth follow-up research can be conducted. The findings of this study are expected to serve as a resource for academics researching bank financial performance.

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