

A LITERATURE REVIEW ON DIGITAL COMPETITIVE ADVANTAGE IN THE BANKING INDUSTRY

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Abstract

The objective of this paper is to conduct a systematic review of research references pertaining to digital competitive advantage in the banking sector from 1998 to 2022. From a data standpoint, this study will look specifically at the development trend of digital competitive advantage research in the banking sector. This study employed a qualitative method, specifically a literature review. This study made use of 48 datasets gathered via web scraping and sourced from the Scopus database from international publications with the keywords bank financial performance from 1998 to 2022. The articles used as data were screened using a variety of criteria, including h-index, g-index, and cite/paper. According to the findings of this study, the period between 2019 and 2022 will see the greatest growth in topics related to digital competitive advantage, amounting to more than 60%. Meanwhile, based on the network of articles, the review reveals that there are no researchers or articles that dominate the scope of research on this topic. The review's findings also show that Indonesia, Taiwan, America, Macedonia, Brazil, Vietnam, Lebanon, Kenya, and China are frequently used as case studies in digital competitive advantage studies. Meanwhile, in terms of the industrial sector, those related to technology and information are the most frequently studied. According to this finding, the banking sector is still understudied, accounting for less than 10% of all industries studied. Meanwhile, this review identifies several contexts that are frequently discussed in digital competitive advantage research, including those related to the impact of technological growth and sustainability issues. 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 interested in studying digital competitive advantage in the general sector and banking. The literature and bibliometric studies on digital competitive advantage in the banking sector may be Indonesia's first systematic literature review.

Keywords: Digital Competitive Advantage, Bank, Bibliometric Analysis, Systematic Review.

INTRODUCTION

The banking industry plays a critical role in economic growth (King & Levine, 1993). The role of banks in assisting the economy cannot be separated from their function as intermediary institutions that channel public funds into productive assets that promote real-world productivity (Bencivenga & Smith, 1991). Economic transformation is a critical prerequisite for Indonesia to become a high-income country by 2045. (Bank Indonesia, 2019a). This vision can be realized by strengthening priority sectors, which are sectors that support economic growth and external resilience, both through funding disbursement and payment system strengthening.

Rapid technological advancements occur in the financial industry as well, making it simple for new players to enter the market. Banks, as incumbents, face challenges in their core business, including competition from other banks and asymmetrical competition from new players such as Fintech. Increased competition is also fueled by changes in consumer behavior and customer expectations for banking services from customers who are becoming more accustomed to using technology. According to Statista data (2019), cellular users in Indonesia reached 79.7 million in 2018 and are expected to increase to 100.4 million by 2023. Changes in consumer behavior change behavior in conducting transactions at banks, according to a PwC consultant in the Indonesia Banking Survey (Wake & Suhenda, 2018), where 35 percent of banking industry respondents stated that transactions on mobile and internet banking channels had surpassed transactions on traditional channels such as transactions at branch offices, while transactions from ATM channels also experienced growth but not as much as transactions from mobile and internet banking channels.

Given the asymmetrical competition that banks face, Fintech focuses on specific segments of the financial institution value chain, with the goal of providing services and solutions that weaken the bond between banks and their customers (Kotarba, 2016). Fintech labels are given to the market for the adoption of technology to provide financial services, according to Arner, Barberis, and Buckley (2015). Fintech refers to new financial services processes and products made possible by advanced technology. Fintech is defined as financial innovation enabled by technology, resulting in new business models, applications, processes, or products with a materially associated effect on financial markets, institutions, and financial service providers ("Financial Stability Board" in Navaretti et al., 2018). Customers benefit from improved services and lower pricing as a result of Fintech competition. According to recent research, while banking is not being financially disrupted by Fintech, it may lose its competitive advantage if it does not incorporate digital technology and adopt a new business model (Karsh et al, 2020). Few studies also incorporate the future form of banking to gain a competitive advantage, whether it is a hybrid of digital and traditional banking as services or a pure digital game with various collaboration and implementation strategies (Broby, 2021; Agafonova et al, 2020, Wewege et al, 2020, Sibanda et al, 2020, Vovk et al, 2021).

In response to increased competition, changes in customer behavior and expectations, and the availability of disruptive technology, incumbents, including banks, have sought digital transformation as a strategic response (Chishti & Barberis, 2016; Vives, 2017; Warner & Wäger, 2019). The use of digital technology (social media, analytics, and mobile technology) to provide massive business model improvements, such as improving customer experience, streamlining operations, and creating new business models, is referred to as digital transformation (Fitzgerald et al., 2013).

Continuous adaptation to an ever-changing environment is required for digital transformation. Even after an organization has successfully transformed, the need for transformation does not cease or diminish (Kane et al., 2017), so unlike traditional transformations, the target state of transformation is constantly changing and flexibility is required to remain competitive in the digital environment (Sailer et al., 2019). Even though the financial industry operates in a

volatile and unstable environment, it is still necessary to be an agile organization. Strategic agility is defined as a company's ability to renew itself proactively on an ongoing basis while remaining flexible without sacrificing efficiency (Doz & Kosonen, 2010; Clauss et al., 2019). Much of the literature on Strategic Agility focuses on strategic flexibility and adaptation at the organizational level, but Morton et al (2018) argue that it is important to examine how actors build and maintain Strategic Agility at a lower level.

As strategy is no longer relevant in creating sustainable competitive advantage, organizations must be agile and change course in various areas (Agafonova et al., 2020). In order to create future-ready, few studies underline how organization become ambidextrous, pursuing digital transformation (Sia et al., 2021; Tirado et al., 2019). Continuous adaptation during the digital transformation process has an impact on human resources, where employee reduction perceptions and changes in career path and procedure may stymie the digital transformation. Employees who are engaged share positivity, which helps the company achieve its goal of digital transformation. Engagement will result in innovation as a result of knowledge acquisition, utilization, and integration (Al-Dmour et al., 2020). According to recent studies, there is anxiety caused by work stress and job dissatisfaction during the transformation, which organizations must be aware of during the digital transformation (Winasis et al., 2020).

Based on this phenomenon, the purpose of this study is to systematically examine research references related to digital competitive advantage, particularly in the banking sector, over the last twenty-four years, or from 1998 to 2022. This study will look specifically at the development trend of digital competitive advantage research in all industrial sectors from a data standpoint. This study examines the publication pattern and growth of the number of Scopus international publications on the topic of digital competitive advantage in various industrial sectors from 1998 to 2022. Furthermore, this study aims to investigate the themes that have emerged in digital competitive advantage research over the last twenty-four years.

LITERATURE REVIEW

Digital Competitive Advantage

Previous research on bank performance in terms of financial performance, specifically financial ratios such as Return on Assets, Return on Equity, Profit Before Tax, and Net Interest Income, can be found (Dong et al., 2016; King et al., 2016; Monferrer Tirado et al., 2019; Singh & Rao, 2017; Wu & Shen, 2013; Karsh et al., 2020). Banking efficiency, such as the ratio of Operating Expenses to Operating Income, Non-Performing Loans (Dong et al., 2016; King et al., 2016), as well as non-financial performance, such as customer satisfaction and market share (Monferrer Tirado et al., 2019; Singh & Rao, 2017), are also indicators of performance (King et al., 2016).

Another research group presented findings on digital banking performance, emphasizing technology adoption as a service innovation to meet needs and increase customer satisfaction (Ameme & Wireko, 2016; Mbama & Ezepue, 2018; Nguyen, 2020; Shareef et al., 2018). With the application of digital banking, this study group elaborated from the perspective of using

digital banking, including the intention of customers to adopt internet and mobile banking (Avornyo et al., 2019; Baabdullah et al., 2019; Martins et al., 2014 ; Sharma & Sharma, 2019; Zhou, 2012; Nguyen et al., 2020, Son et al., 2019), which are influenced by service quality, functional quality, perceived value by customers, engagement between customers and employees, perceived usability, and perceived risk (Aboobucker& Bao, 2018; Mbama & Ezepue, 2018; Nguyen, 2020).

Bibliometric Analysis

Bibliometric analysis is a quantitative method for analyzing bibliographic data in articles/journals. This analysis is commonly used to investigate references to scientific articles cited in a journal, to map the scientific field of a journal, and to categorize scientific articles according to a research field. This method can be used in sociology, the humanities, communication, marketing, and other social groups. In bibliometric analysis, the citation analysis approach is used to find one article cited by another, whereas the co-citation analysis approach is used to find two or more articles cited by one. The words (co-words) that are used in a document can reveal the scientific concept that is contained within it.

The co-occurrence of words or keywords in two or more documents used to index documents is the basis for co-word analysis (Effendy et al., 2021).The use of non-standardized keywords can result in non-uniform terms, which require the use of a thesaurus to standardize. A thesaurus is a glossary of terms that covers a specific field, allowing for the use of more specific terms. A thesaurus is not the same as a list of subject headings, which are typically broad and cover all areas of knowledge. The use of indexing descriptors is an attempt to represent a single concept.

Literature Review

This study's literature 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, and it makes use of a variety of library sources (Knopf, 2006; Randolph, 2009; Booth, Sutton, & Papaioannou, 2016). This technique is widely used in many fields, including economics, management, and information technology.

METHOD

The qualitative method approach (Sekaran, 2016) was used in this study, which combined bibliometric methods and a literature review (see Figure 1). This study made use of data from international publications containing the keywords digital competitive advantage from 1998 to 2022 (see figure 2), which were gathered through web scraping and sourced from the Scopus database (www.scopus.com). The articles used as data were screened using a variety of criteria, including h-index, g-index, and cite/paper.

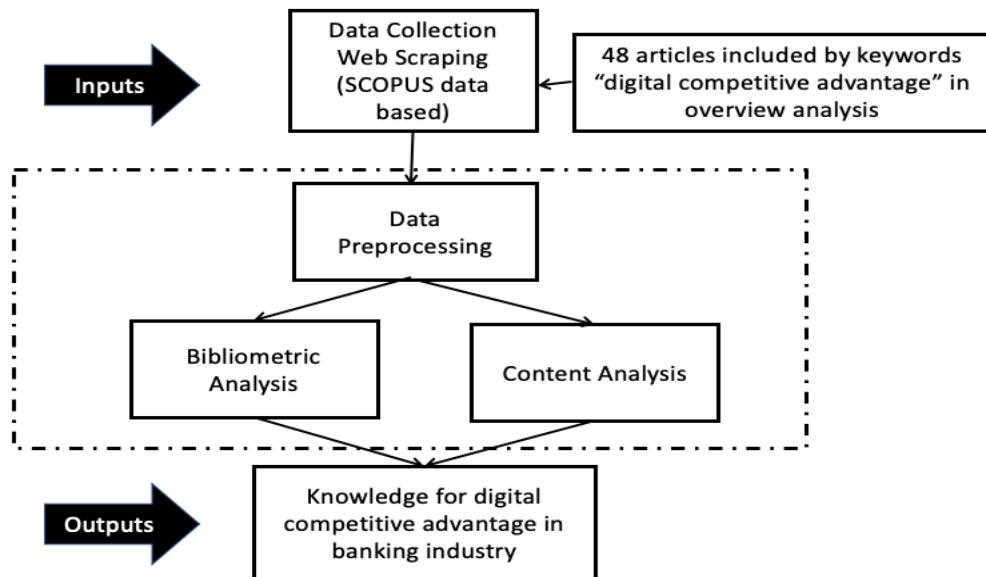


Figure1: Literature review and bibliometric flow chart

Source: The author's own study, 2022

Lit maps were also used to analyze data on the number of publications per year, journals with articles, authors, and topics. In addition, VOS viewer software is used to analyze the development trend of international publications, followed by qualitative content analysis. VOS viewer is bibliometric network creation and visualization software. Individual journals, researchers, or publications, for example, can be included in these networks, which can be constructed using citations, bibliographic aggregations, co-citing, or co-authoring relationships. Text mining functionality is also included in VOS viewer for creating and visualizing co-occurring networks of key terms from scientific literature.

RESULT AND DISCUSSION

Corpus Profile

Figure 1 depicts the number of articles used in this study in accordance with the context. According to the review, the growth of studies on digital competitive advantage is inconsistent. This problem was first identified in a 1998 publication titled "Competitive advantage on cable's digital tier." Following that, 12 publications were published between 2003 and 2014 in the context of digital competitive advantage. This figure increased to 16 articles from 2015 to 2018, representing a 40 percent increase over the previous period. Meanwhile, the period between 2019 and 2022 was recorded as having the highest number of articles discussing this issue, with 27 articles, representing a more than 60% increase. In recent years, research trends in this field have been stable. The figure below depicts the distribution of literature on the topic of digital competitive advantage.

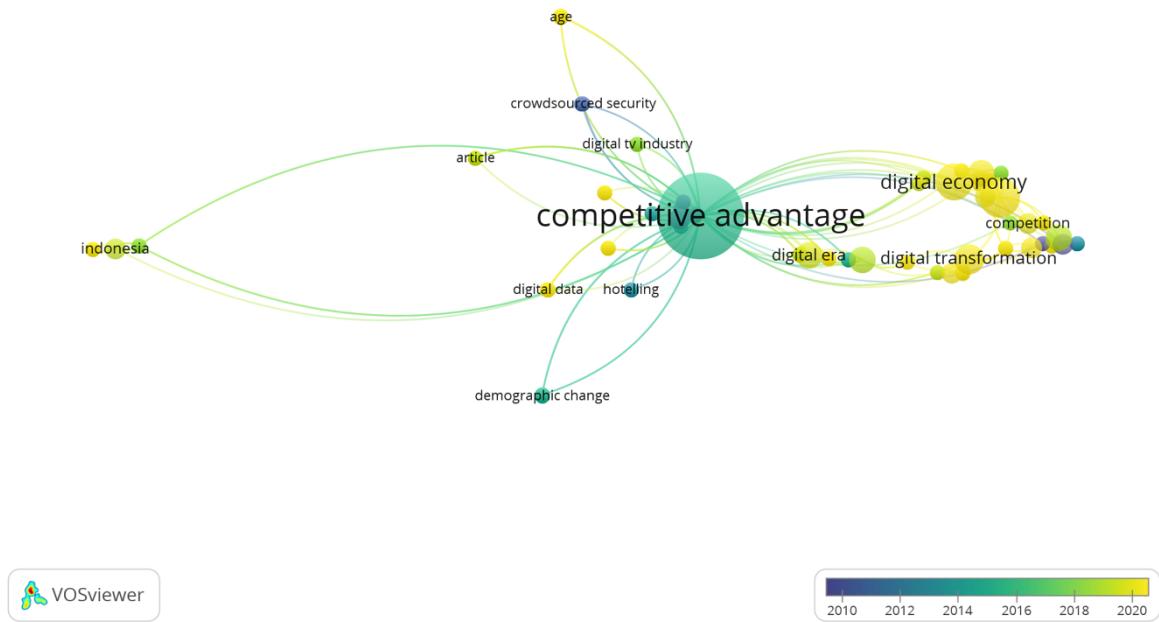


Figure 2: Trends in the distribution of scientific literature on digital competitive advantage for the period 1998-2022

Source: The author's own study, 2022

Figure 2 shows that research on digital competitive advantage continues to be a popular topic among academics. At the very least, the varying distribution each year demonstrates this. However, based on the network of articles, the picture shows that there are no researchers or articles that dominate the scope of digital competitive advantage research. Each article's nodes or circle illustrations are fairly symmetrical, though there are a few that appear larger than others but are not significant.

The current trend of digital competitive advantage research

In addition, the content of the articles or references used will be scrutinized, especially in terms of title and context. During this phase, the entire body of literature will be treated as a text or corpus, which will be analyzed and classified according to topic and context. The output of the text mining process in this review is DTM in the form of word frequency, which is visualized and analyzed qualitatively using VOS viewer.

The most recent journal on digital competitive advantage

From 1998 to 2022, 48 publications were obtained utilizing Scopus data based on search results for the keywords digital competitive advantage with the categories of article title, abstract, keywords. Based on this number, it is clear that the E3S Web of Conferences has the most publications, with four articles. Meanwhile, there are two articles in each of the following journals: 7th AIAA Aviation Technology, Integration, and Operations Conference; IET Conference Publications; International Journal of Networking and Virtual Organizations; and

Strategic Direction. 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 digital competitive advantage for the period 1988-2022

No.	Name of journal or Conferences	Number of articles
1	E3S Web of Conferences	4
2	Collection of Technical Papers - 7th AIAA Aviation Technology, Integration, and Operations Conference	2
3	IET Conference Publications	2
4	International Journal of Networking and Virtual Organizations	2
5	Strategic Direction	2

Source: The author's own study, 2022

Table 1 show that the majority of the journals that mostly discuss the issue of digital competitive advantage have a background or scope in information technology and strategic management areas. This data demonstrates that the issue of digital competitive advantage is still rarely discussed in economics, finance, research management, or even the banking sector.

Comprehensive Network Analysis of Digital Competitive Advantage Research

Using the VOS viewer tool, all articles will be bibliographically analyzed throughout this session. In this analysis, the network and density of articles will be visualized. Figure 3 depicts the development map of the digital competitive advantage topic field in all Scopus indexed sectors from 1998 to 2022, which can be grouped into 25 clusters based on co-word analysis. Cluster 1 is colored red and contains 12 topic items such as building, cade, context, development, digital economy, digital twin, energy efficiency, implementation, network, projection, structure, and sustainable competitive advantage. Cluster 2 is shown in green and includes eleven topic items such as banking, cases, communication technology, competitive advantage improvement, digital branch, digital gramedia archipelago (gramedia digital nusantara), Indonesia, industrial era, information, publishing industry, and soup. Cluster 3 is blue and includes nine topic items such as alliances capability, build value, digital disruption era, effects, digital era, green transformational leadership, incumbent telecommunication firm, innovation, and substantiation. Cluster 4 is light green and contains nine topic items: case study, China, digital competitive advantage, digital content industry, hospitality industry, organizational capability, Taiwan, travel, and typology.

Cluster 5 is purple and contains eight topic items: BMI, business automation, digital era, framework, human capital analytics, innovative entrepreneurial company, international development, and supply chain strategies. Cluster 6 is light blue and includes eight topic items such as boundary spanning, digital new venture, digital transformation, empirical study, high competitive advantage, manufacturing enterprises, relationships, and resources. Cluster 7 is orange, and it contains seven topic items: American, Chinese digital platforms, competition, digital platform provider, insight, market entry strategy, and temporary advantage. Cluster 8 is

pink, and it contains seven topic items: bank, corporate image, and efficiency, enhance competitive advantage, entrepreneurial personality, performance, and role.

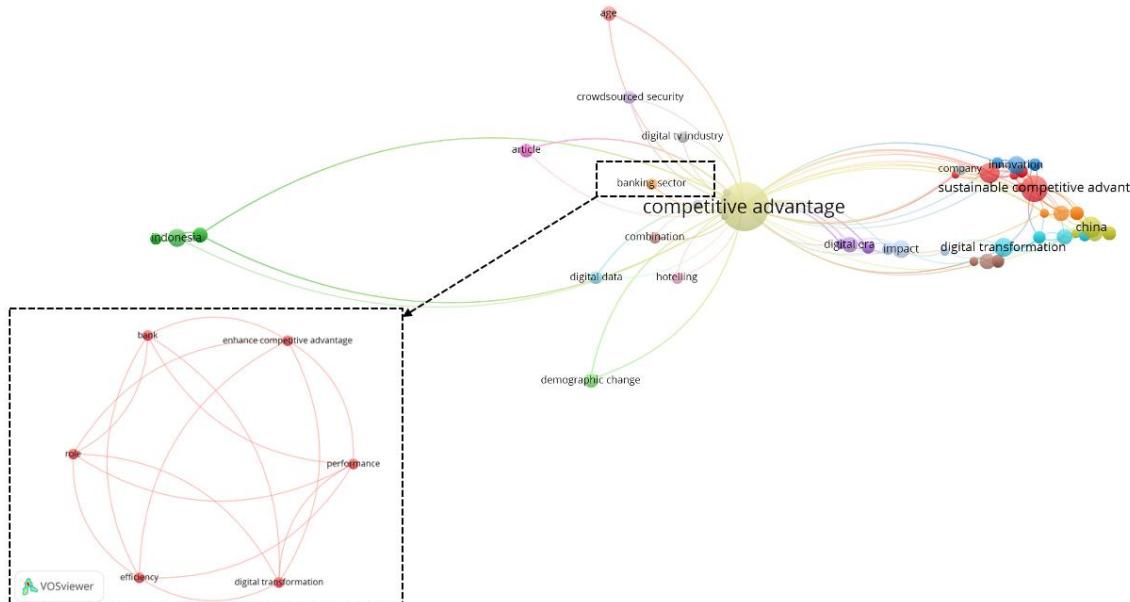


Figure 3: Text network analysis of digital competitive advantage research

Source: The author's own study, 2022

Cluster 9 is pink, and it contains six topic items: articles, big tech companies, copyright, digital single market, directives, and upload filters. Cluster 10 is light blue and contains six topic items such as Age, bring revenue, digital Brazilian news player, digital news business models, industry, and technology new ways. Cluster 11 is light green in color and contains six topic items: demographic change, digital educational content gain, digital learning content, knowledge loss, knowledge retention, and use. Cluster 12 is light blue in color and consists of six topic items: bank industry, digital presence, firm competitive advantage, impact, study, and systematic literature review.

Cluster 13 is light green and contains five topic items: competitive advantage, designing a digital marketplace, digital technology, the digital world, and a sustainable digital economy. Cluster 14 is light purple in color and contains five topic items: crowd sourced security, digital megacity, harmonious development, social intangible assets, and trust & cooperation.

Cluster 15 is light blue in color and consists of five topic items: digital data, mediation effects, process efficiency, product effectiveness, and streams. Cluster 16 is orange, and it contains four topic items: banking, digital services, Macedonia, and tools. Cluster 17 is purple, and it contains four topic items: combination, digital age, radical management practice, and technology. Cluster 18 is gray and contains four topic items: a digital versatile disc patent pool, hoteling, a multidimensional quality module, and tsup2 soup. Cluster 19 is gray and contains four topic items: digital television industry, evidence, firm, and strategic entrepreneurship.

Cluster 20 is a light green color that contains three topic items: business, digital social media, and interactive technology. Cluster 21 is orange, and it contains three topic items: company, formation, and supply chain management. Cluster 22 is light green in color and contains two topic items: cable and digital tier. Cluster 23 is light green and contains two topic items: digital lean manufacturing and DLM. Cluster 24 is light green in color and contains two topic items: the digital sector and the strategic business model. Cluster 25 is light green in color and contains two topic items: b2b digital marketplace and info mediation.

Furthermore, Figure 3 shows that the development map of the digital competitive advantage topic area, particularly in the banking sector (circle cluster image in the left corner), only exists in 2015, 2018, and 2021 (4 articles) and is grouped into a single cluster. Banks, digital transformation, efficiency, enhancing competitive advantage, performance, and roles are among the six topic items in the red cluster. The network analysis results are depicted in Figure 4, which show that the correlation between nodes was divided into eight network clusters. Inner cores are clusters with a high number of nodes and heavy edges. This cluster depicts the most frequently discussed issues in the context of digital competitive advantage. An outer core, on the other hand, is a cluster with a low node occurrence frequency and a low edge weight. This cluster (image of a circle cluster in the left corner) represents the issues that have received the least attention in the literature on digital competitive advantage.

This review also shows how the weights of nodes and edges in the inner core network vary, as shown by the size scale of circles and connecting lines. The thicker the line connecting the two nodes and the larger the circle, the greater the weight or degree. Nodes and edges on a large scale are frequently discussed issues that are at the heart of the topic of digital competitive advantage. Labeling each node, as indicated by the identity token, emphasizes this visualization. These tokens or nodes represent topics that have received a great deal of attention in the literature.

This study attempts to take a proxy for digital competitive advantage from the value generated by digital transformation, based on the arguments of several previous studies. The result of digital transformation efforts is digital excellence. Neumeier et al. (2017) proposed the hypothesis of organizational excellence in several areas in their study on the value of the benefits of digitalization. Customer tailored solutions, product and service quality, innovative products and services, and the convenience of customer interaction are among the benefits in the corresponding customer area.

According to researchers Sigalas et al (2013), competitive advantage has many meanings and that there are two major streams of defining competitive advantage. The first stream is concerned with performance-based competitive advantage. In the meantime, other research suggests that competitive advantage is determined by determinants. Based on the results of the network analysis visualization above, this definition appears to be related to the empirical study of digital competitive advantage. As a result, several digital competitive advantage nodes that appear in the context of the banking industry are terminology that is commonly used in the context of banking and financial performance.

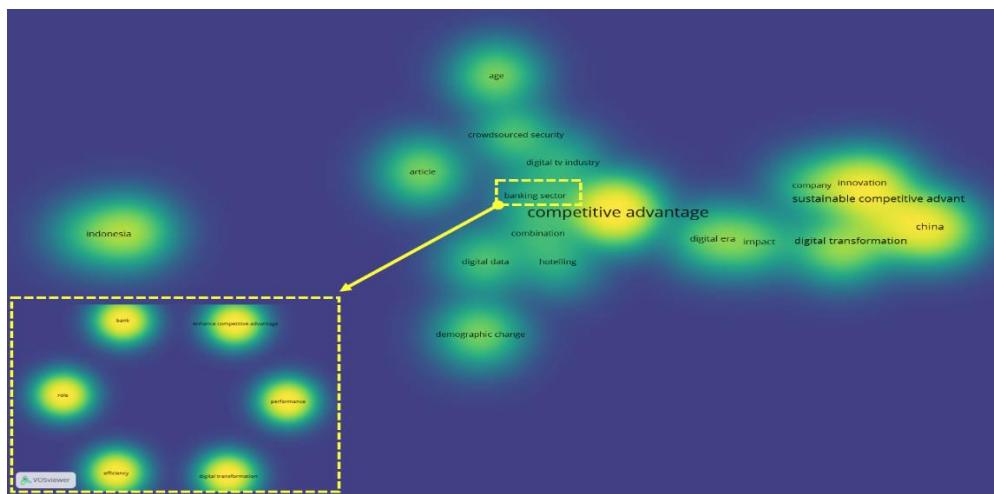


Figure 4: Density analysis of digital competitive advantage research

Source: The author's own study, 2022

Density-based analysis is also visualized by the VOSviewer tool. This means that, based on the color density in the visualization area, this illustration will make identifying the most frequently studied contexts easier. 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.

The review's findings are classified into three groups based on the location of the case study, the sector or industry being studied, and the context of the issue being studied. According to the review's findings, the country's most frequently used as case studies in digital competitive advantage studies are Indonesia, Taiwan, America, Macedonia, Brazil, and China. Meanwhile, the most frequently studied aspects of the industrial sector are communication technology, information, publishing, hospitality, hotels, travel, human capital analytics, entrepreneurial companies, manufacturing enterprises, big tech companies, and digital marketplaces. According to this research, the banking sector is still understudied, accounting for less than 10% of all industries studied. This fact presents an opportunity for future digital competitive advantage research in the banking sector. Mostly because the study's space or scope hasn't been thoroughly explored. Meanwhile, this review identifies several contexts that are frequently discussed in digital competitive advantage research, including those related to energy efficiency, network, sustainable competitive advantage, competitive advantage improvement, digital branch, effect of digital disruption era, green transformational leadership, innovation, digital competitive advantage, business automation, digital transformation, competition, copyright, deregulation, and deregulation. As previously stated, the issues raised are primarily concerned with the challenges and opportunities for growth or technological progress in various industrial sectors. These issues also appear to be novel in traditional sectors that have

received little attention. As this review has demonstrated, academics and researchers have paid little attention to the banking sector. Several issues in the banking sector that are frequently studied include digital transformation, efficiency, enhancing competitive advantage, performance, and roles. This fact demonstrates that there is still a great deal of analysis that needs to be done in the banking sector in the future.

Several studies that investigate the digital competitive advantage of the banking sector include Riyanto's 2018 publication, "Digital branch: Competitive advantage of banking in Indonesia through information and communication technology to face the industrial era." De Oliveira published a study titled "The impact of digital presence on competitive advantage: a study applied to the Brazilian bank industry" in 2015. Furthermore, two studies written by Stojkovski & Rashwan will be published in 2021. They conduct research on "Digital services as a tool for creating competitive advantage in the banking sector in north Macedonia" and "The Role of Digital Transformation in Increasing the Efficiency of Banks' Performance to Enhance Competitive Advantage."

As previously stated, the phenomenon of digital transformation, particularly as it relates to digital competitive advantage in the banking industry, necessitates constant adaptation and flexibility in order to compete in the digital environment (Sailer et al., 2019). The fit between variables is the key to company performance, according to the Contingency Theory (Burns & Stalker, 1961). The environment in which digital transformation operates determines its success. Lexandrova et al. (2019) added that a digitalization-based strategy is one of the steps to always providing the best service for consumers on a competitive basis. This is one of the aspects that a company must carry out, particularly in the financial sector, which requires long-term adaptation to changing conditions (Yuryeva, 2020). As a result, this study comprehensively formulates several issues that need to be investigated in the future, including aspects of Leadership Ambidexterity, Strategic Agility, and Corporate Culture, based on the framing of the network analysis context and supported by various digital competitive advantage literature. Furthermore, many banking industries have failed to implement digital transformation, prompting this research to recommend a study of Readiness for Change factors in digital transformation implementation.

Future research is expected to focus on developing dynamic capabilities to carry out digital transformation strategies in order to gain a competitive advantage, with the banking industry in Indonesia as a case study. In the context of digital competitive advantage in the banking sector, this issue is still very rarely studied and empirically proven.

CONCLUSION

Based on the findings and discussion of this study, it is concluded that the period between 2019 and 2022 will see the greatest growth in topics related to digital competitive advantage, with 27 articles, representing a more than 60% increase. Meanwhile, based on the network of articles, the review reveals that there are no researchers or articles that dominate the scope of research on this topic. E3S Web of Conferences, on the other hand, is listed as the publisher that publishes the most articles related to digital competitive advantage, with a total of four

articles. Furthermore, the development map is divided into 25 clusters based on co-occurrence and keywords, with only one cluster related to the banking sector. This review, on the other hand, divides the trend of digital competitive advantage research into three categories: the location of the case study, the sector or industry being studied, and the context of the issue being analyzed. According to the review's findings, the country's most frequently used as case studies in digital competitive advantage studies are Indonesia, Taiwan, America, Macedonia, Brazil, and China. Meanwhile, in terms of the industrial sector, those related to technology and information are the most frequently studied. According to this research, the banking sector is still understudied, accounting for less than 10% of all industries studied. Meanwhile, this review identifies several contexts that are frequently discussed in digital competitive advantage research, including those related to the impact of technological growth and sustainability issues. As previously stated, the issues raised are primarily concerned with the challenges and opportunities for growth or technological progress in various industrial sectors. These issues also appear to be novel in traditional sectors that have received little attention.

However, several issues in the banking sector that are frequently studied include those related to digital transformation, efficiency, enhancing competitive advantage, performance, and roles. This fact demonstrates that there is still a great deal of analysis that needs to be done in the banking sector in the future. As a result, this study suggests that future research should focus on aspects of Leadership Ambidexterity, Strategic Agility, and Corporate Culture. Furthermore, many banking industries have failed to implement digital transformation, prompting this research to recommend the study of Readiness for Change factors in digital transformation implementation. This study is expected to focus on developing dynamic capabilities to carry out digital transformation strategies in order to gain a competitive advantage, using the banking industry in Indonesia as a case study. In the context of digital competitive advantage in the banking sector, this issue is still very rarely studied and empirically proven. 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 interested in studying digital competitive advantage in the general and banking sector.

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