

Government Regulations in Digital Banking: Bibliometric Studies From 2017 – 2021

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Abstract

As newly developing trends in the finance sector, digital banking has gained significant research interest. This research aimed to explore the role of government regulations in Digital Banking. The authors see that research on the Government regulation on Digital Banking are still limited. The paper uses a bibliometric analysis approach to summarize the trends of government regulations to digital banking. The research was limited to Scopus journals published during the 2017-2021 period. The results show that the number of government regulation research is low and keeps increasing to guard the development of digital banking to its users.

Keywords

bibliometric analysis;
digital banking;
government regulation



I. Introduction

Digital Banking (PB) is a new way to access banking services using Information and Communication Technology (ICT) devices such as smartphones and computers. Digital technology-based financial services are currently growing rapidly in line with advances in digital technology. Banks have started to switch from relying on conventional offices and services to digital application services. This is a transformation or change that cannot be avoided in the current era (Kholis, 2018). The history of Digital Banking can be traced back to the 1960s due to the increase in banking transactions (Shaikh et al., 2017). Banking services continued to transform, around the 1980s, banks began to use a data recording system that could be accessed by computers. This is the embryo of the development of financial technology that is starting to appear in the back office of banking services and other capital facilities (Kholis, 2018). In the same decade, automatic teller machines and cards were invented (Moşteanu et al., 2020). Then in the 1990s, banking services via the internet were discovered (Fehér & Varga, 2017).

Further improvements, banking services accessible using smartphones with sensors, Artificial Intelligence (AI), and Cloud Computing help create digital technologies that are practical and interactive with customers (Afonasova et al., 2019). Meanwhile, the world's population continues to grow, and the younger generation using digital banking is also increasing. This change causes the Digital Banking market size to exceed USD 10 trillion by 2027, according to a recent study by (Global Market Insights Inc., 2021). The rapid growth of digital banking is influenced by several things, based on a publication submitted by www.wearesocial.com which conveys the following data:

- a) More than half of the world's population uses smartphones
- b) Almost 2/3 of the world's population owns a mobile phone or mobile phone
- c) More than half of digital/internet data traffic, accessed by mobile phones and smartphones.
- d) More than 1/5 of the world's population shop online (online shopping)

The significant development of Information and Communication Technology (ICT) allows more people to use digital banking than conventional banking, especially the younger generation born in 1981 to 1995 or the Millennial generation. This generation is faced with many technological advances, one of which is smartphones. The banking industry is one industry that always follows the development of information technology. To display an advantage, usually service companies such as banking always offer various convenience services to obtain their customers, of course by using the carrying capacity of information technology (Nawang Sari and Iswah, 2019).

Many factors influence the development of digital banking, such as (1) the development of ICT, (2) the growing need for effective and efficient banking services, (3) changes in lifestyle, (4) competition in the banking industry, and (5) banking operations more integrated and efficient (Deorukhkar & Xia, 2015), (Sheikh & Rajmohan, 2017), (Kreitshstein, 2017), and (Vebiana, 2018). Nawangsari and Iswah (2019) wrote that due to the condition of the people who already know and understand digital features and facilities that require improvement in information technology, the speed and usability of information technology are needed in applications to be able to increase the effectiveness of individual performance in managing finances. It is also said that the conventional banking service process creates inefficiency because it takes up quite a lot of time, starting from filling out forms, to queuing and other processes that take time and energy. For this reason, banks offer services that are predicted to help reduce the complexity and impracticality of conventional methods.

The purpose of this study was to determine the development of government regulations in digital banking related to the distribution of bibliometric maps and research using the VOSviewer software. The distribution of the bibliometric map displayed consists of the type of publication of the topic area being studied.

II. Review of Literature

2.1 Digital Banking

Banking activities began to be known around 2000 BC in the cities of Assyria and Sumer, where there were traders who provided grain loans to farmers and traders who brought goods between cities. (Kholis, 2018). This activity continues to grow until centuries and later becomes a financial institution that has spread throughout the world. In the Law of the Republic of Indonesia No. 10 of 1998 concerning Amendments to Law NO. 7 of 1992 concerning Banking, it is explained that a Bank is a business entity that collects funds from the public in the form of savings and distributes them to the public in the form of credit and/or other forms in order to improve the standard of living of the people at large. (Kasmir, 2012)

In subsequent developments, disruption has led to changes in business progress in various economic sectors, including the banking industry which has evolved from manual and offline services, to online or hybrid services (Kurniati & Suryanto, 2022). The Banking Era 4.0., as concluded by Brett King (2019), can be a challenge for banks to be more innovative in providing services to customers by using technologies such as big data, artificial intelligence (AI), and Cloud Computing, so that the banking process digital services make it easier for customers to get online banking products and services, for example from opening an account, carrying out financial transactions, to closing bank accounts.

Information and Communication Technology (ICT) is developing rapidly and creating new conditions for a digitally literate society and prioritizing efficiency and effectiveness in every activity, including financial activities. The banking industry then

responded by changing banking services from manual to digital. In addition, it is also claimed that digital banking services are expected to reduce the operational costs of the banking industry and create efficiencies in banking itself. In the long term, digital banking is expected to be able to facilitate all financial activities and thereby capture new markets. (Auta, 2010).

Digital banking is developing along with the development of Fintech (Financial Technology), a novelty that refers to financial innovation with a modern touch. Banking itself is everything related to banks, including institutions, business activities, as well as ways and processes in conducting business activities. (Djoni S. Ghazali and Rachmadi Usman, 2012)

In the process, banking is undergoing a digital transformation which provides an opportunity to make a total remodel of the work processes and systems that have been running so far so that the process becomes more efficient and effective (Omarini, Ana 2017). Online financial transaction activities through digital platforms provide promising opportunities for banks to change marketing strategies from conventional to digital. However, the transformation carried out certainly has a high risk because the digital strategy requires a comprehensive strategy that includes processes, talents and business models. Non-bank financial service providers or commonly referred to as fintech are also reasons that become competitors for the banking industry. According to Wasita and Subagyo (2019), the fintech industry has grown rapidly in the last two years due to the wider segmentation of the financial sector market. For Indonesia, according to the Chairman of the OJK Board of Commissioners, Wimboh Santoso, there were 127 online-based loan platforms as of early August 2019 registered with OJK (Wasita and Subagyo, Antara News, 2019)

In the end, banks have to compete with Fintech companies, this is based on a study conducted by the CCP Research Foundation in June 2015, which revealed that there are sixteen of the world's top global banks, among them spending US\$306 billion in product-related costs since 2010, this This shows that the banking sector is vulnerable to disturbances, such as the level of public trust which is very important although it has not been completely eliminated but is sure to be eroded. Otherwise, digital devices tend to be viewed in a positive light. Research conducted

for the Millennial Disruption Index report found that 73% of respondents (teenagers to mid-thirties) would be much more excited about a new financial service provided by Google or Apple than their old bank announced.

2.2 Digital Banking and Financial Technology (Fintech)

The Financial Technology (Fintech) industry is classified into four main segments according to their business model, Dorfleitner et al. (2017) the financing, asset management, payments and other fintech functions. The financing segment provides financing for individuals and businesses, such as receivables or loans. The asset management segment offers advice, asset management and aggregate indicators of personal wealth. Payment segment is a common term for fintech whose applications and services involve national and international payment transactions, including the blockchain and cryptocurrency sub-segment which includes fintechs that offer virtual currencies as an alternative to regular fiat currencies that are legal to allow storing, using and exchanging crypto (Bafin, 2016). Then finally, what is meant by other fintech segments is describing fintech businesses that cannot be classified by the other three traditional bank functions, namely financing transactions, asset management and payments. Fintech offers insurance or facilitates acquisitions, including in the insurance subsegment.

In the USA, fintech investment jumped to 9.9 billion in 2014 and throughout 2016, global fintech investment growth reached 17.4 billion US dollars. One-third of global consumers use two or more fintech services with 84% of consumers stating that they are aware of the existence of fintech, as stated by Ernst and Young (2017) in the Fintech Adoption Index. Angel List has registered 3800 fintech startups, trying to get business from traditional financial services players. Digital newcomers can successfully challenge the status quo by creating new, efficient business models that focus on specific areas of banking. They can separate and break down the retail banking sector into distinct service and product segments. The rapid development of the fintech industry is indicated by several factors, such as being influenced by customer experience, the relationship between finance and technology, data monetization and crypto technology and regulation. The Internet, mobilization, social networking and the emergence of price comparison sites have changed the game and have created a new generation of customers who demand simplicity, speed and convenience in their interactions with financial providers. While financial sector experts provide specialized knowledge such as risk management, financial analysis and regulatory compliance, IT experts contribute with technology expertise and understanding of the customer experience in the digital age. With the advent of sophisticated, low-cost computer technology tools and analysis, it is possible for companies to explore big data, identify emerging trends, and develop unique insights. In fact, blockchain technology is changing not only the way we make payments but the entire world of trading and settlements. Ultimately, in the future, Fintech will rely heavily on its capacity to overcome the highly demanding regulatory framework of the financial sector, but regulation can be a catalyst for fintech development or a major obstacle.

The presence of companies in the increasingly fintech industry can be a nuisance to the flow of financial activities related to banks, this is based on the ease with which fintech customers can access funds from anywhere and make payments easier and more practical. However, Banking and fintech can do collaboration, with good preparation and the necessary openness to the requirements of the other party. Collaboration between fintech and banks can take various forms. Some fintechs are tied to services that only those with banking licenses can offer. In fact, some fintech industries are more focused on partnerships with banks with the aim of expanding their customer base and at the same time enriching the product and service offerings of each bank.

Fintech which goes through rapid development based on technological developments is inversely to Banks which seem slower due to the risk-averse nature of the Bank as well as regulatory limitations and their obligations. But Banking capabilities allow them to open accounts, deposit money, and provide credit and offer other regulated products and services. That way they can add industry, regulatory, legal, compliance and risk management expertise and give fintechs access to their own global payment systems and customer base.

In addition, instead of making the fintech industry a nuisance to the banking sector, it is certainly better to make fintech as a partner. For fintechs themselves, if the new brand is trusted enough and attracts enough customers of course they do business without a partnership with a bank, but this is too complicated and takes a lot of time, then it is better to look for the right bank to work with. This of course requires careful preparation by choosing the right partner because the termination of the partnership can be done due to dissatisfaction with one of the parties. Furthermore, the bank certainly has to innovate with current customers who choose a new bank at the right time and according to them. Banks must be able to compete and keep pace with the increasing trends of customers and technology.

2.3 Government Regulation

An innovation can bring about major changes that affect efficiency and practicality in human life (Guttentag, 2015). In the digital era 4.0, especially in the banking industry, technology has changed banking products and services to become more flexible, transparent, efficient and effective. However, there are concerns that the new banking business process will have a negative impact on society. Some of these weaknesses are the concept of data privacy and illegal use of identity. Therefore, government regulations play an important role in solving problems to increase innovation progress while reducing the risk of negative impacts (Brummer, 2015).

A crucial and emerging issue along with the rapid development of digital transactions, including banking transactions in it, is online trust. Online trust refers to public trust in bank and non-bank financial institutions that provide digital transaction services, in maintaining the security of privacy data used and required in transactions. Privacy and personal data are important because users on the network will not carry out digital transactions if they feel that the security of their privacy and personal data is threatened. One of the protections for privacy and personal data relates to how the personal data will be processed, including sensitive data from users which if distributed to irresponsible parties will have the potential to cause financial losses, even threaten the security and safety of the owner. The threats arising from the weak protection of privacy and personal data have a straight line correlation with economic growth resulting from transactions (Rosadi and Pratama, 2018). The economic condition of the population is a condition that describes human life that has economic score (Shah et al, 2020). Economic growth is still an important goal in a country's economy, especially for developing countries like Indonesia (Magdalena and Suhatman, 2020).

Without regulations that protect the security of people's privacy and personal data, manipulation of data is very likely to occur, and can cause material and non-material losses. Manipulation of personal data is an act that fulfills the elements of a criminal act, such as elements of the crime of theft and elements of a criminal act of fraud and other criminal acts, both in terms of objective elements and subjective elements. With the fulfillment of these elements, administrative sanctions, civil sanctions and criminal sanctions are not sufficient to accommodate the criminal act of manipulation of personal data which is in fact a perfect form of crime. (Situmeang, 2021). At this matter, the government should be present to protect the interests of the community to maintain the security of their privacy and personal data with regulations that favor the community and have severe consequences so that the manipulation of such data does not occur. The expert suggested that regulators and stakeholders in the banking industry meet to discuss the potential advantages and disadvantages of digital banking. Government regulations with the correct process are then the result of the Triangle Cooperation Concept between the private sector, the government and the community. The regulation itself must contain at least four elements, namely neutral, adaptive, collaborative, and have universal values (Panetta, 2018).

III. Research Method

The method used is bibliometric analysis of secondary data. All journals in this study were taken from the Scopus database. Bibliometric analysis has several advantages, the database is the most comprehensive and reviewed journal in the world, and can provide good scientific academic information. Bibliometric analysis attempts to analyze the bibliography of scientific activities, with the assumption that the bibliography has been

communicated and discussed scientifically, to colleagues. Communicating and discussing research topics and results needs to be done so that it can continue to grow (Tupan, et al, 2018). Scientific journals from Google Scholar were also used to complete this research data, conducted by online search on January 18, 2022 using the keywords “Government Regulations on Digital Banking”, issued between 2018 and 2022. Source type is journal final and downloaded in *.pdf format and organized using Mendeley Software, and exported to *.ris format. Furthermore, VOSviewer is used to visualize and analyze trends in the form of bibliometric maps (van Eck & Waltman, 2010).

IV. Results and Discussion

VOS viewer can display bibliometric mappings in three different visualizations; network visualization (Fig. 1a), overlay visualization (Fig. 1b), and density visualization (Fig. 1c). Keywords are labeled with colored circles. The results of the extraction of titles, keywords, and abstracts found 15 documents consisting of 1 document in 2022, 7 documents in 2021, 2 documents in 2020, 4 documents in 2019, and 3 documents in 2018.

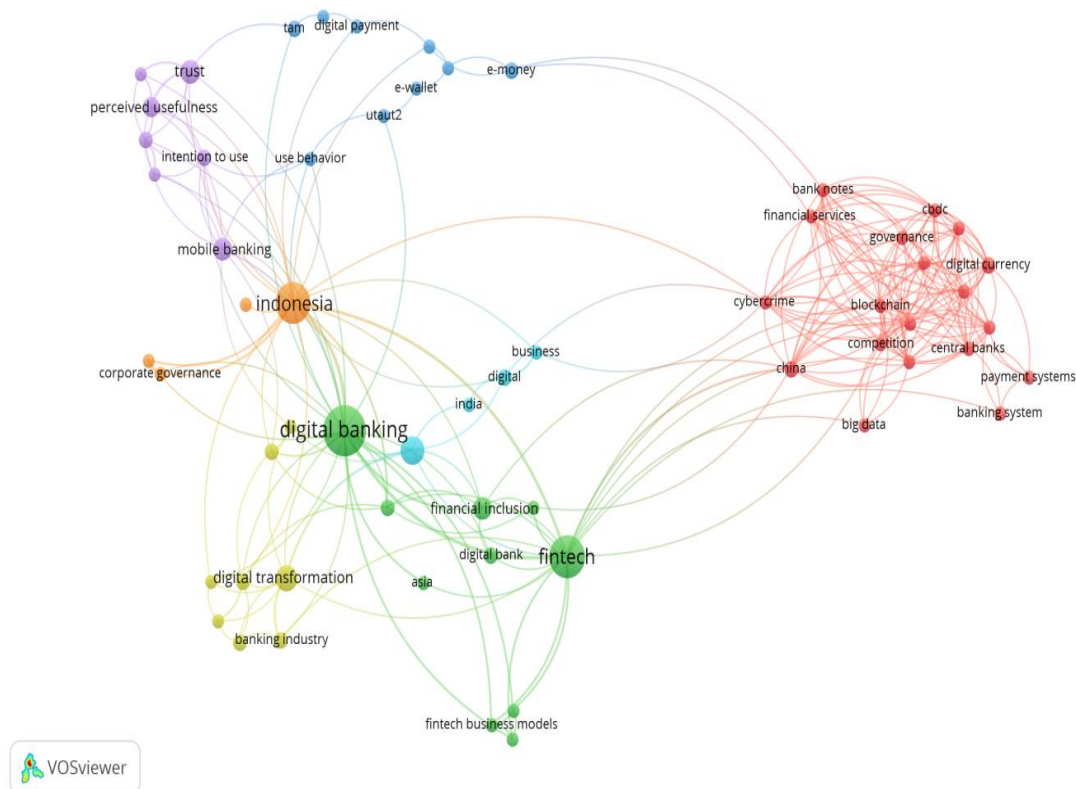


Figure 1. Topic area visualization using VOS viewer using network visualization

Figure 1 shows the clusters in each of the topic areas studied. It can be seen that the keyword Government Regulation on Digital Banking (green area) has links to Fintech, cybercrime, blockchain, e-money, trust, and Indonesia. Meanwhile, Figure 2 shows the trend from year to year related to this study. In this image, we can see the trend of digital banking towards e-wallet, digital currency, big data, and China.

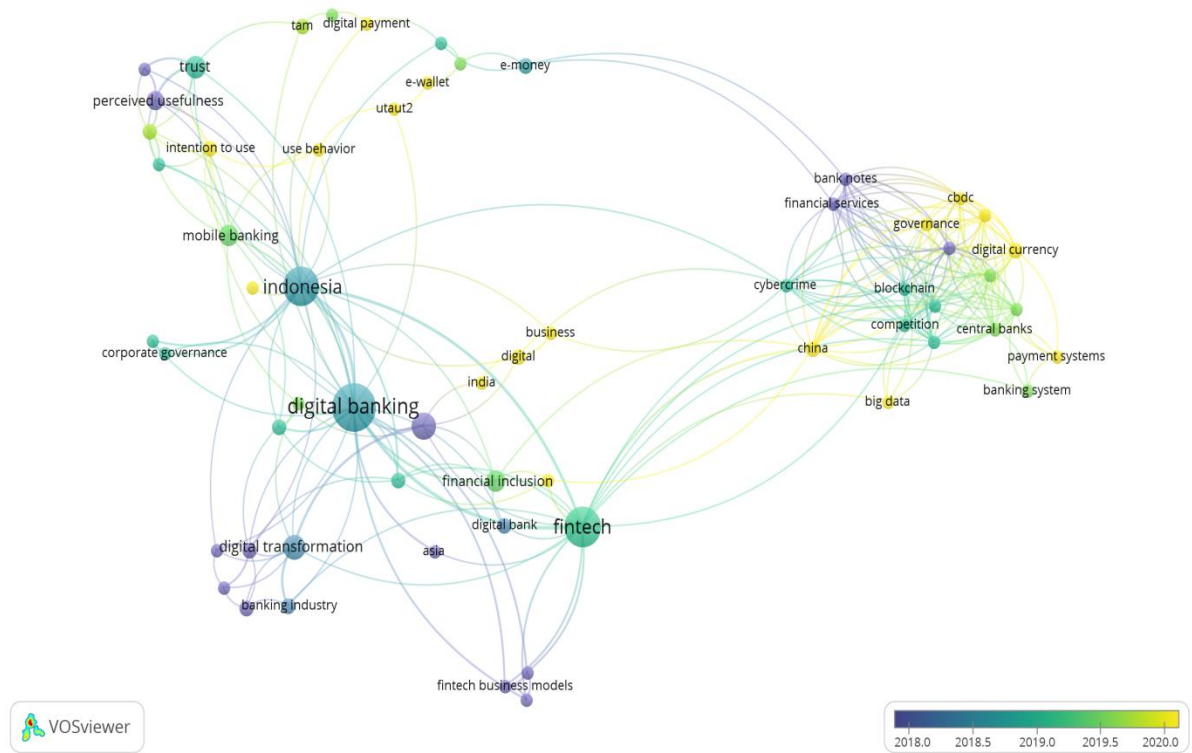


Figure 2. Topic area visualization using VOSviewer using overlay visualization

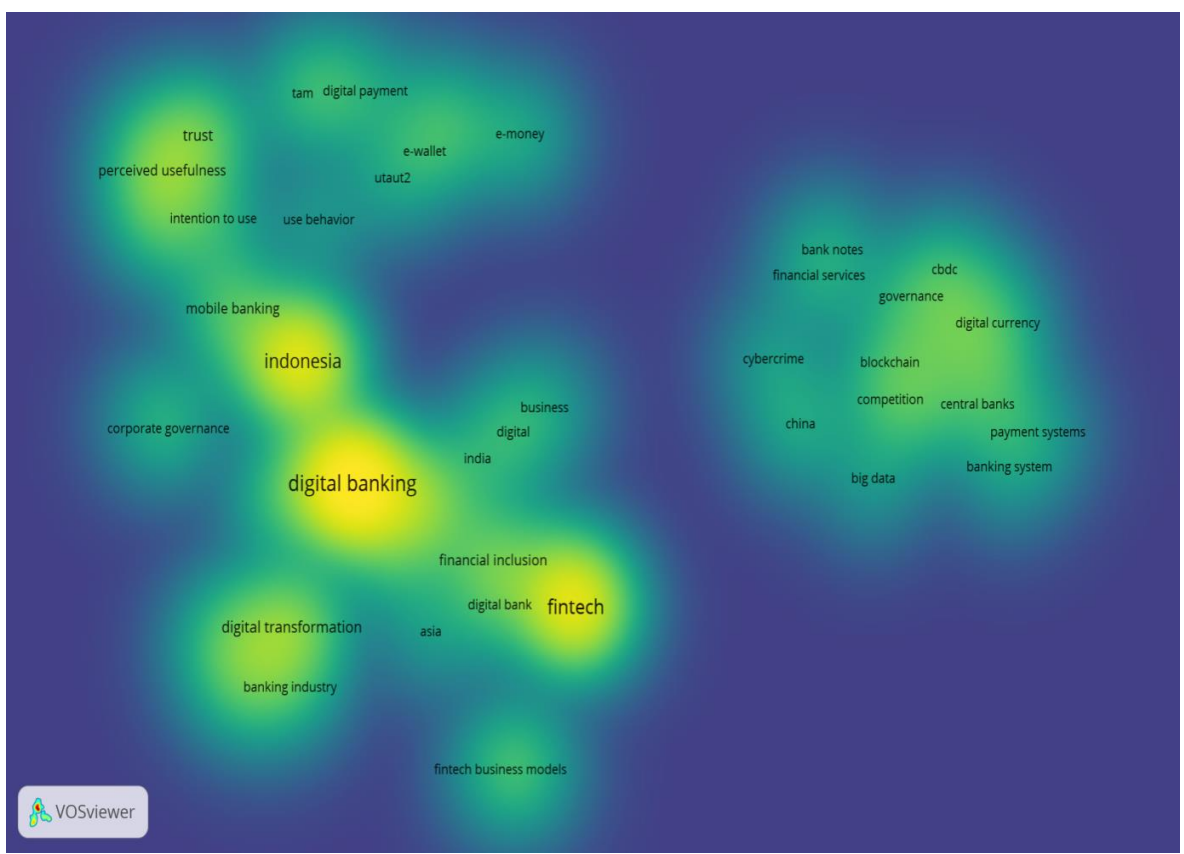


Figure 3. Topic area visualization using VOSviewer using density visualization

Meanwhile, Figure 3 shows the depth of research, answering that the more concentrated the color appears and the more research. From Figure 1-3, it can be seen that the keywords that often appear are Digital Banking, Fintech, and Indonesia. Based on the mapping using Vosviewer, it shows that the countries that use digital banks are China, India and Indonesia.

V. Conclusion

Digital banking is developing rapidly, but along with its development there are quite serious risks or dangers related to the misuse of personal data used and required in the process of financial transactions in digital banking. However, there are not many studies that discuss government regulations in digital banking matters. Whereas research on government regulations is expected to encourage the birth of regulations that protect the privacy and security of people's personal data so that there is no misuse of data that can cause financial and non-financial losses. The Digital Banking trend is not only increasing towards digital currencies, payment systems, but also cybercrimes. Therefore, government regulations are very important to protect the public from unlawful acts such as One Time Password (OTP) fraud, carding, hacking, and phishing. Governments and regulators need to monitor and control, including misappropriation of public money, public data storage, and financial crimes are all things that need to be checked and guarded. However, the analysis reveals that there are few journals devoted to the topic. This research hopes that in the future there will be more journals published on these topics.

Examples of cases of misuse of personal data, including:

- 1) Copying of customer ATM card data and information (skimming) where the perpetrator skimming makes a withdrawal of funds elsewhere.
- 2) Online loans, where the transaction mechanism fills in online data but in the case of late payments it is not uncommon to use collectors to intimidate the customer, the customer's family, the head of the place customers work and can even access data from their mobile phones.
- 3) Online transportation, where consumers are sexually harassed through the number whatsapp.

This research takes data from various disciplines and their relationship to each other. Although there is no systematic evidence of this, this article attempts to configure and visualize the systematic sharing of literature and analyze it through a bibliometric approach. This bibliometric approach is used to identify key themes in each study or scope of knowledge or research that has been carried out so far and is useful for determining novelty in conducting further research.

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