

## A Literature Study on Network Society in Indonesia 1977-2022

Ferdian Ahya Al Putra<sup>1</sup>, Septyanto Galan Prakoso<sup>2</sup>, Nadia Dian Ardita<sup>3</sup>

Universitas Sebelas Maret

<sup>1</sup>ferdianahya@staff.uns.ac.id

### ABSTRAK

Saat ini, terdapat kelangkaan studi literatur yang tentang perkembangan masyarakat jaringan di Indonesia. Kajian untuk mengetahui topik-topik yang seharusnya mendapat perhatian lebih dari para akademisi dalam bidang ini, harus dilakukan. Studi terkait masyarakat jaringan yang ada saat ini masih cenderung bersifat umum dan tidak membahas detail dari topik dan isu yang mempengaruhi masyarakat jaringan di Indonesia. Oleh karena itu, penelitian ini bertujuan untuk mengidentifikasi keberadaan masyarakat jaringan dan isu-isu yang ada dalam masyarakat jaringan di Indonesia dari tahun 1977 hingga 2022 dari sudut pandang para akademisi melalui publikasi mereka dengan menggunakan studi literatur berbasis database Scopus dengan visualisasi data. Penelitian dilakukan melalui studi pustaka dengan fokus pada data bibliografis. Visualisasi data akan disajikan menggunakan program Vos Viewer, dengan pengambilan data menggunakan program Publish or Perish. Hasil dari penelitian ini menunjukkan bahwa fokus dari masyarakat jaringan di Indonesia dipengaruhi oleh fenomena yang pernah terjadi dan masih ada di dalam negeri. Artikel ini diharapkan dapat menjadi titik awal bagi riset-riset yang bertujuan untuk menemukan tren dalam masyarakat jaringan di Indonesia, dan juga menyediakan acuan untuk bentuk penelitian yang membahas mengenai masyarakat jaringan di Indonesia dengan lebih detail dan terkait fokus topik seperti isu keamanan, pendidikan, dan sebagainya.

**Kata Kunci:** masyarakat jaringan, Indonesia, studi literatur.

### ABSTRACT

*Currently, there is a lack of literature studies on the development of network societies in Indonesia. Studies to identify topics that should receive more attention from academics in this field must be carried out. Current studies related to network communities still tend to be general in nature and do not discuss in detail the topics and issues that affect network communities in Indonesia. Therefore, this research aims to identify the existence of a network society and the issues that exist in a network society in Indonesia from 1977 to 2022 from the perspective of academics through their publications using a literature study based on the Scopus database with data visualization. Research was carried out through literature study with a focus on bibliographic data. Data visualization will be presented using the Vos Viewer program, with data retrieval using the Publish or Perish program. The results of this research show that the focus of the network community in Indonesia is influenced by phenomena that have occurred and still exist in the country. It is hoped that this article can be a starting point for research that aims to discover trends in network society in Indonesia, and also provide a reference for forms of research that discuss network society in Indonesia in more detail and related focus topics such as security issues, education, and so forth.*

**Keywords:** network society, Indonesia, literature study.

## A. INTRODUCTION

The advancement of technology and information (TI) during the process of globalization has led to changes in how communication works. Today, communication is not limited to space or time since the invention of the internet in 1983 (Hui, 2010). Everyone can communicate without being represented. Moreover, people can easily absorb and discover anything. The development of TI is not only used for communication purposes, but also to facilitate human activities ranging from government, economic, educational and cultural activities. According to Manuel Castells, the development of IT occasionally cannot be seen from the advancement of hardware devices, but all of the human activities have led to the advancement of community communication to improve their living matters (Castells, 2004). This development led people or internet users to the network society.

The existence of a network society has led to the emergence of networked individualism. This is because the new communication technology provides an opportunity for individuals to build sociability based on their personal preferences. The preferences of each individual appear because individuals manage their obtained information and their experiences. Thus, it can be assumed that the network society is a society of networked individuals (Castells & Paul H, 2006). The elaboration of this argument is also somewhat interesting in the field of social

science, as it indicates the new checkpoint for the development, or even the evolution of society. There are already some recognized forms of society determined by its features that have already become established and popular objects or study in social sciences, like civil society, plural society, industrial society, and so forth. However, the very concept of network society, with the agreed definition refers to 'a society with networked individuals' as Castells and Cardoso have said, provides a certain interesting perspective on how to integrate (and to examine) the existence of network society into the scope of social science. Moreover, Castells came to the conclusion that the concept of information society should be replaced by the notion of network society (Anttiroiko, 2015).

In Indonesia, technological advancement has encouraged progress in various aspects. One of which in this process is the economic to political digitalization. In the economy, the transformation into digitalization can be used for global communication, which impacts R&D, global innovation, and global value chain (Knell, 2021). The collaboration between resources and knowledge are basically the requirements of the development and innovation in the economy. This is because the interaction and coordination between companies or organizations through agreement can form a network, which can create a global scale network (Knell, 2021). Whilst on politics, the network society can

influence the media which intends to create or shape an agenda setting and opinion.

Based on the Indonesian Digital Literacy Index organized by the Ministry of Communication and Information (Kemkominfo) and the Katadata Insight Center (KIC) in 2021, Indonesia's digital literacy index is measured at 3.49. This result puts Indonesia in the moderate category, with an index score of 0 to 5 (Husna, 2022). Another study, which was conducted by Hootsuite per January 2023, compared Indonesia's digital reports with the total population of Indonesians. The data showed that mobile connections in Indonesia have reached 128% (353.8 million). Meanwhile, the number of internet users has reached 77% (212.9 million) of the total population (276.4) (Hootsuite, 2023).

By these studies, we can conclude that the digital literacy index in Indonesia is increasing time by time. But how does such a

## **B. LITERATURE REVIEW**

Castells defined a network society as a society where the key social structures and activities are organized around electronically processed information networks. Therefore, it's not just about networks or social networks, because social networks have been very old forms of social organization, it's about social networks which process and manage information and are using micro-electronic based technologies (Castells, 2010). Here we can see that even in the era when the integration of the internet to everyday life is

certain statistic represent the current development of network society in Indonesia? A proper literature study should be conducted in response to the need for checking the development of network society in Indonesia, so that the current state, as well as the previous changes and checkpoints regarding the development of network society in Indonesia can be discovered. The study also should be conducted based on reliable data that exist and recorded from time to time as a result of scientific thinking, to ensure its validity. Therefore, although this article mainly will identify topics that are often discussed and related to network society in Indonesia in the last 45 years, it also has a primary objective to utilize the reliable database in order to respond to the question: how is the development of network society in Indonesia based on literature records?

scarce, Castells has already created an argument that shows the importance of collaboration between the advancement of technology and the very concept of organization. This is especially shown on his arguments that the rapid development of technology has provided benefits for networks to become an efficient organization, which are (Castells, 2004): (1) Flexibility: Refers to the ability of networks to adapt to new environments, stick to goals when experiencing changes, and seek connections;

(2) Scalability: Refers to a situation where they can expand or shrink with minimal disruption. Survivability: Networks do not have a center and can be formed in a wide range. So that the network is not easy to falter because the network code has many nodes so it is easy to emulate and create new ways to adjust. So, only the physical ability to destroy the connecting points can eliminate the network. This also represents the weakness of network society, as it is prone to physical threats towards its sustaining infrastructure.

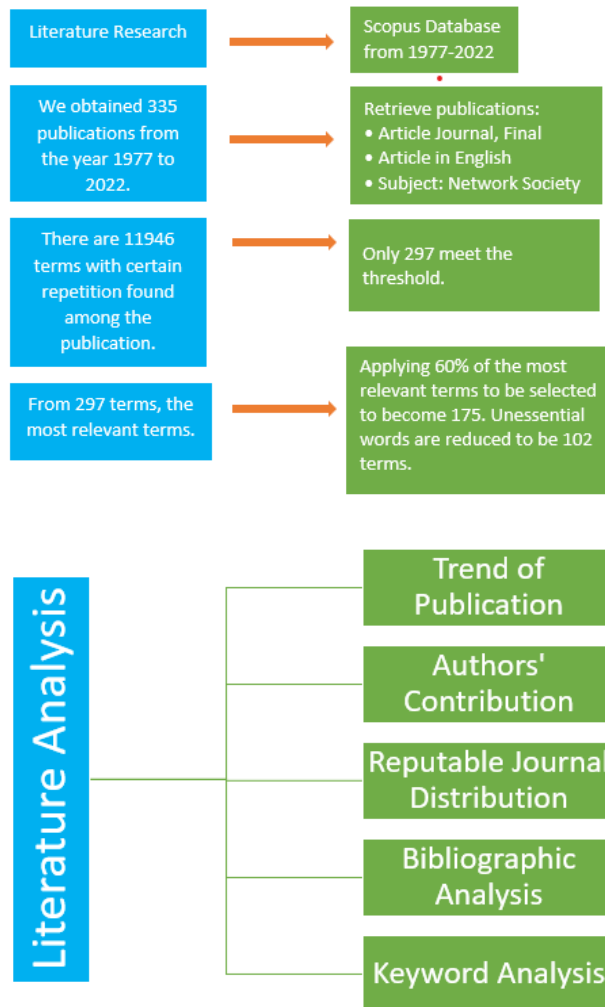
In the other discussion, Castells argued that the interaction of human relations changed due to the spread of capitalism in the world. This is also in line with the argument that capitalist and neo-liberal agendas that are implemented through structural adjustment plans in the name of development but end up increasing inequality in society (Psaltis et al., 2015). Since the Industrial Revolution happened, the economic pattern has restructured and accommodated the open market. In addition, by viewing from the historical perspective, network society shows a qualitative change in human experience, especially in the interaction between nature and culture. In the past, the pattern of human relations was only used as a way to survive on

the domination of nature. Whereas in the modern era, the rapid development of technology, which occurred since the industrial revolution, shows a new pattern in the society to be free from nature (Castells & Castells, 2010).

The proof of this statement can be seen on the emerging and/or developing state of a certain movement like green/environment movement or feminism which represent the urge of humanity to be 'free' from certain standards that limits them. Therefore, it can also serve as proof of how network society is also utilized as a campaign platform for the 'alternative' perspectives of individuals, which can be materialized into a movement easily, unlike the practices that have happened in the past, without any influence and/or disruption of internet and technological advancement, or basically any digital disruption towards the conception of 'network'. The previous research had conceptualized a network society as the social structure that results from interactions between new technological paradigms and social organization in general. Often, these emerging societies have been characterized as information societies or knowledge societies (Cardoso & Castells, 2006).

### C. METHODS

This article is conducted by literature study in three phases. The steps of this research can be seen in this following flow chart:



**Figure 1** The Research Flowchart

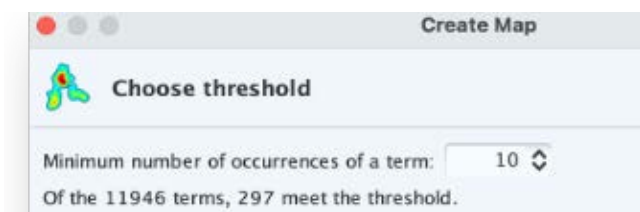
First, we searched all publications in Scopus related to Network Society in Indonesia from 1977 to 2022. This particular period (45 years) is chosen, so that the data which later will be visualized can portray the development and the dynamics of network society in Indonesia holistically. Interestingly, the database that we used also included some articles dated back to 1977 regarding the network society in

Indonesia. This means that the understanding of network society could be different from the year before the internet existed and is known especially in Indonesia around 1983. The Scopus indexed database is chosen as the main source because of its quality of publications. As we know, Scopus has already set certain standards and requirements for articles to be indexed in its database. However, it should be understood here that even though the coverage is considered vast in terms of period coverage, the database that used for this research does not yet completely represent all publications related to network society in Indonesia, as there are other databases that record those publications. Scopus is chosen in this study as the publications on it are more 'curated' and have certain standards of content and impact factors for the readers and the academicians alike. In the searching process using Publish or Perish application, we managed to get 335 publications from the year 1977 to 2022. Figure 1 shows the quantity and the statistics of the publications.

Citation metrics	
Publication years:	1977-2022
Citation years:	45 (1977-2022)
Papers:	335
Citations:	2977
Cites/year:	66.16
Cites/paper:	8.89
Authors/paper:	2.86
h-index:	28
g-index:	43
hI,norm:	20
hI,annual:	0.44
hA-index:	7
Papers with ACC $\geq$ 1,2,5,10,20:	110,65,20,4,0

**Figure 2** Quantity and the statistics of publications used in this study from Scopus database 1977-2022

The generated data is obtained and saved in the form of a library file (.ris). After that the data is undergoing a reduction process as well as visualization phase. From the 335 publications, the minimum occurrences of a term contained within is determined to 10, meaning that it needs 10 times of occurrence for a word in an article to be included as a term which will be used in this study. There are 11946 terms with certain repetition found among the publications, but only 297 meet the threshold.

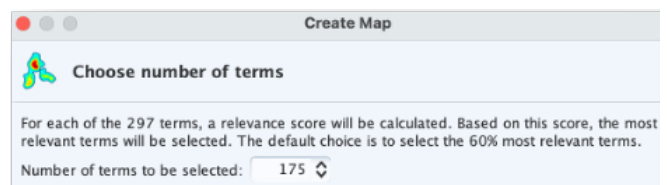


#### D. FINDINGS

The result of mapping the data in the Vos Viewer provides an intriguing networking interconnection between the terms related to

**Figure 3** Threshold of occurrences of terms used related to Network Society in Indonesia 1977-2022

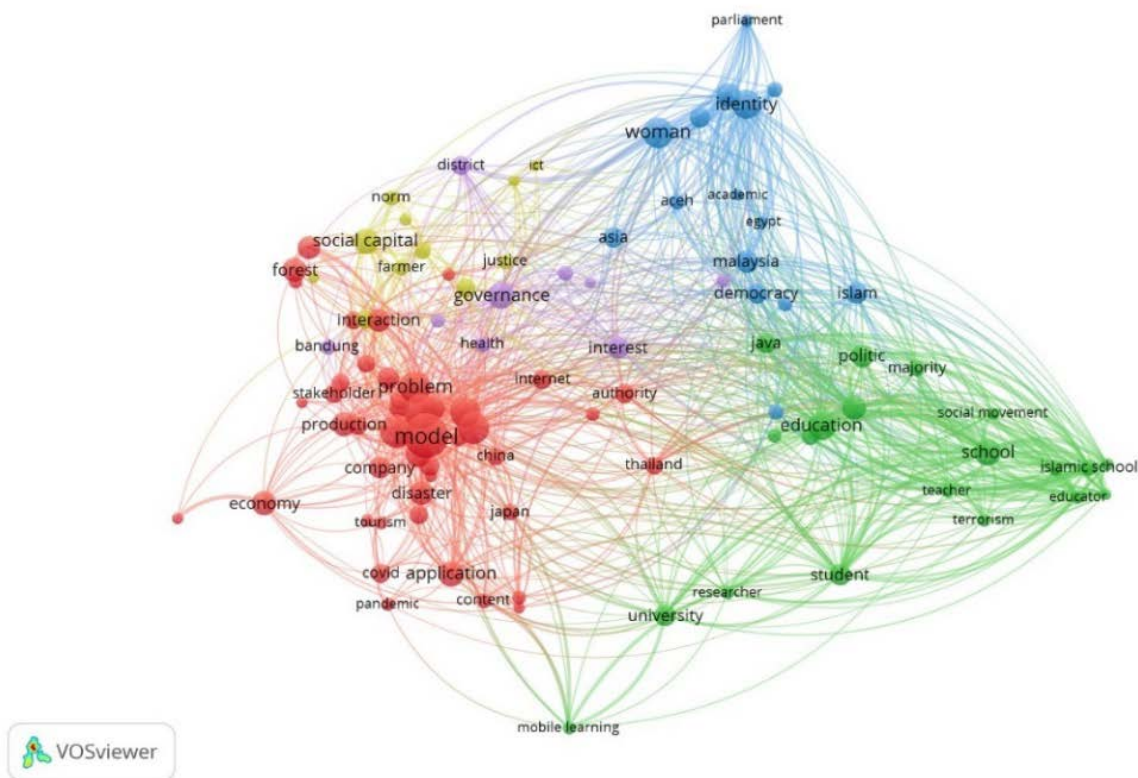
This study applies a certain threshold of occurrences of terms used related to network society in Indonesia (10 times per term minimum in a literature). From 297 terms, the most relevant terms can be determined by selecting the percentage of the most relevant words. In this study, the default setting is used, applying 60% of the most relevant terms to be included, reducing the terms to be selected to become 175.



**Figure 4** The number of terms to be selected in the study

Then, the terms which will be mapped in the visualization appear. From 60 terms, there are some words like conjunction, irrelevant, or non-impactful words. These words are removed from the selection, providing the research with the most significant terms, counting up to 102 terms.

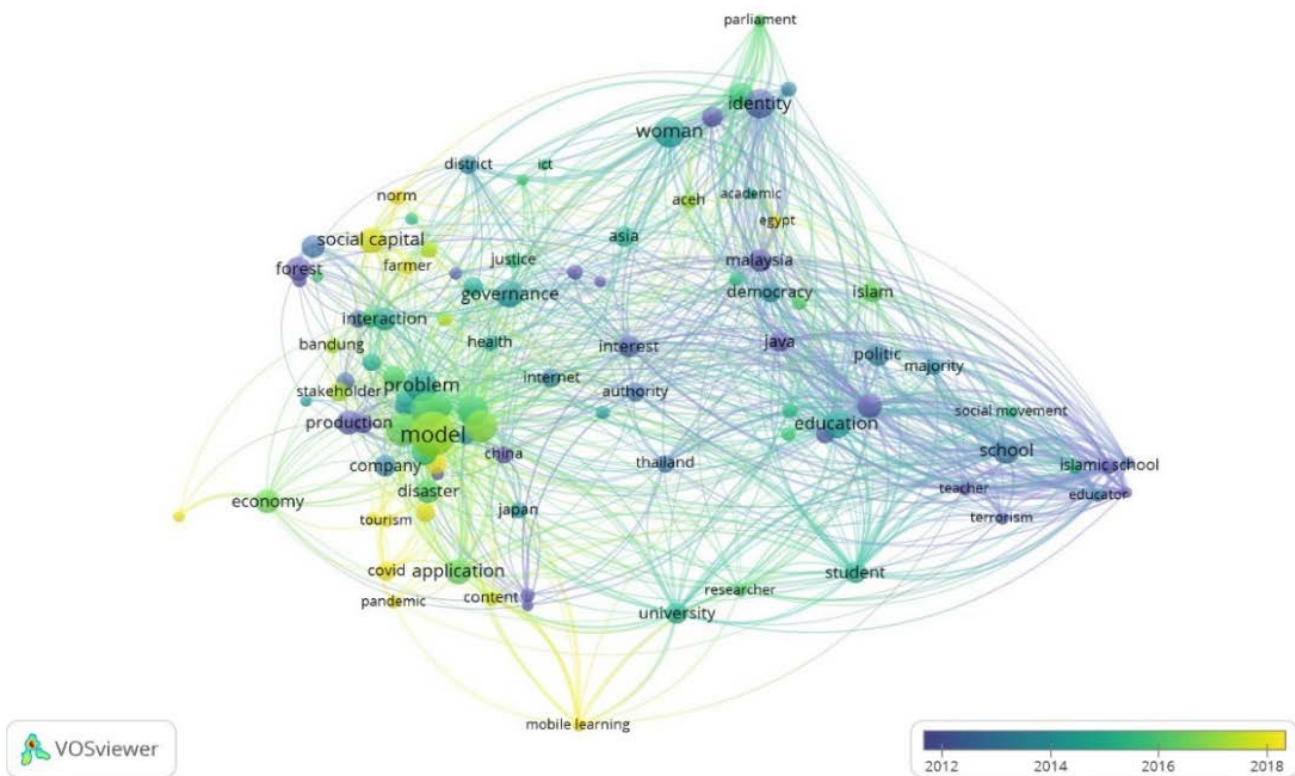
Network Society in Indonesia in the span of 45 years. The result can be seen as follows:



**Figure 5** Network visualization of terms derived from publications related with Network Society in Indonesia 1977-2022

The visualization process on Vos Viewer also creates the time-based overlay of the terms, like what can be seen in the next picture, where it explains the shift in the object of interest in research on network society in Indonesia every

year. It can be observed that the increasing research about network society started in 2012. The scholars' interests developed and affected by the current phenomenon that happened in a certain year



**Figure 6** Network time-based overlay visualization of terms derived from publications related with Network Society in Indonesia 1977-2022

Vos Viewer also provided a density map based on the data, to show the relevance based on how often a particular term appears in the publication related to the topic of Network Society in Indonesia from 1977-2022. There is a shifting of discussion by the scholars related to network society. At the beginning period, the field they talked about was most closely related to education issues. As we can see in the picture, the dark blue color represents the earlier period where there are keywords such as "school", "teacher", "Islamic school", "educator". But there are also other keywords like "terrorism", "identity" that means that there is correlation between both fields. This means that there is a discussion on how education is used to counter the terrorism.

Related to this field, for example, there is a concept on anti-terrorism educations. Anti-terrorism education refers to education that is anti against all forms of violence, either direct violence or indirect violence. The culture of violence with its various forms is actually contrary to the spirit of education which in fact aims to humanize humans, especially religious education which always calls for peace. Violence often arises against the background of an understanding of religious teachings in a textual or closed (exclusive) manner (Marianti, 2020). This also can be explained that network society could be shaped from school or something related to education. Therefore, the map shows the connection between school or education with the terrorism issue.



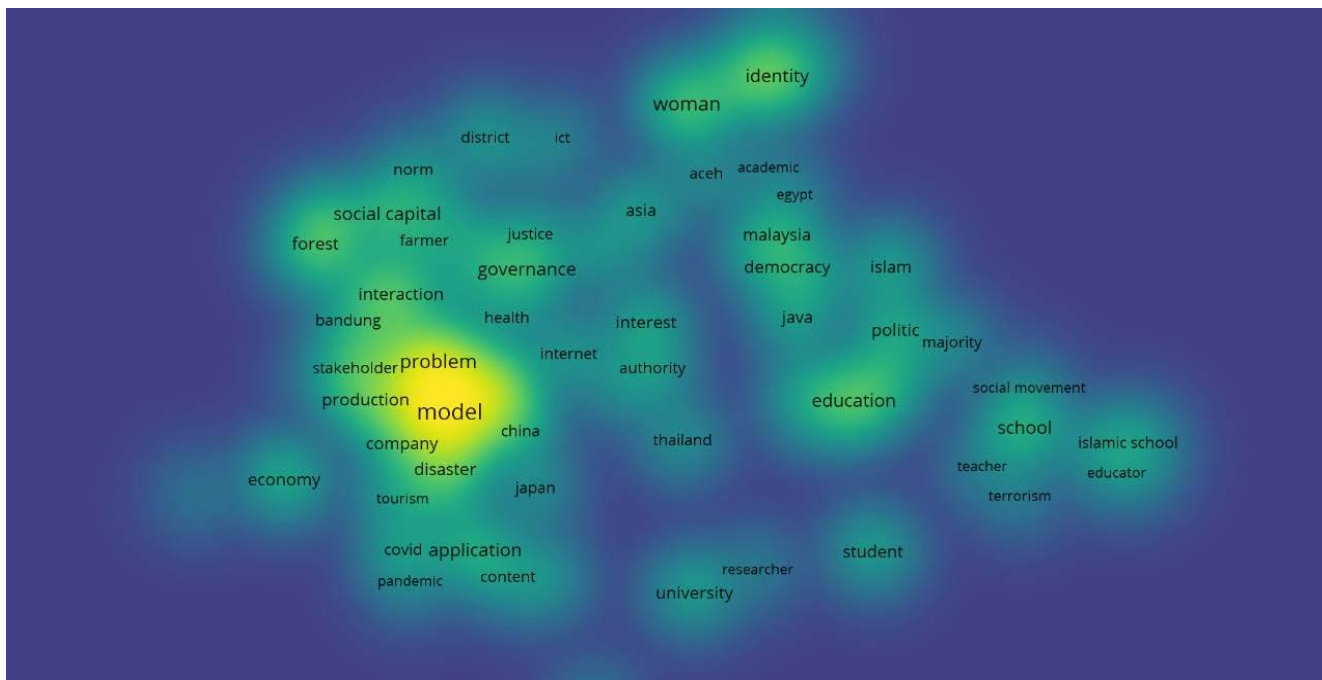
In recent years, discussion related to “network society” shifts to talk about COVID-19 pandemic. For example, previous research examining people's perception of the relationship between COVID-19 and 5G networks, interpreting their attitudes to the pandemic, and analyzing possible ways of managing the info about pandemic crisis (Achem Victor Onyilor & Ani Kelechi Johnmary, 2022). This is interesting since the COVID-19 pandemic has entered almost every aspect in human life, including this field. The COVID-19 pandemic is considered a non-natural disaster. Which means that we need good management to tackle it. As we all know, in order to handle the pandemic, many countries in the world including Indonesia implemented restriction policies to prevent the spread of viruses. The evolution of network society opens up significant opportunities for developing countries, improved quality of life, and the emergence of new traditions which together transform established social structures, groups and local networks, so that the world becomes more connected and interdependent (Milovidov, 2021). One key factor to support this effort is by taking advantages from implementing various digital platforms. Based on the data from *Dewan Teknologi Informasi dan Komunikasi Nasional* (Wantiknas) or National Information Communication and Technology Council in Indonesia, reported that Telkom (a state-owned telecommunications company) has an increase of around 15 percent compared to the average traffic. Then, Traffic of WhatsApp and

Instagram applications rose 40% during the pandemic, since many people use social media to communicate during quarantine. The survey of consulting firm Kantar shows that WhatsApp is one of the applications that has seen a high increase in usage during this time. That number increased from 27% at the start of the pandemic to 41% in the middle of this phase. The government's instruction to carry out activities from home has changed a number of community patterns in conducting financial transactions through online platforms, where there's a significant increase on this aspect (Wantiknas, n.d.). From the data above, we can see that COVID-19 pandemic had an impact on digital activities. As mentioned before, it is closely related to development of technology and information.

Therefore, it's not surprising that literature review on network society will be associated with COVID-19 pandemic where the situation during the pandemic had pushed various activities organized virtually. It can be mentioned that pandemic is a momentum to boost the digitalization process. This also means that the pandemic situation can enhance the network society itself since many activities are driven using online platforms. There are different lenses to fully understand COVID-19's impact at the traffic level wherein the mornings and late evening hours contain more traffic. Meanwhile, in the workday traffic patterns are rapidly changing and the relative difference to weekends is disappearing (Feldmann et al., 2020). Another research had

explored how Internet traffic demands changed as a result of the abrupt daily patterns caused by the COVID-19 lockdown. How these changing traffic patterns finally affected the performance of Internet Service Providers in various countries around the world (da Silva et al., 2021). Moreover, this article found the most

talked about “keywords” that can be seen from the following density map. The density map can also be used to analyze what kind of factor that affects the development and the dynamics of network society in Indonesia throughout the years. The density map can be observed as follows:



**Figure 7** Density visualization of terms derived from publications related with Network Society in Indonesia 1977-2022

From the picture above, it shows that the word “model” and the keywords around them is the most discussed topic. Based on this visualization, the circle consists of words such as production, stakeholder, company, China, and etc. Thus, these words are supposed to discuss economic growth or other topics related to development studies. Meanwhile, this data visualization also

## E. DISCUSSION

Regarding the result that led to categorization of the keywords/terms from

presents the clusters of the terms, which are identified by color code on the dots on the map. These clusters of terms can help to determine how Indonesian scholar study about network society in Indonesia. Moreover, it shows the development of trends regarding network society in Indonesia throughout the years.

the research, it is shown in the first map (network map, shown as Figure 4) the

keyword or the terms are grouped in 5 clusters:

**Table 1** Clusters of most relevant terms from publications related with Network Society in Indonesia 1977-2022

No	Clusters	Keywords
1	Cluster 1	Application, Australia, authority, Brazil, China, company, comparison, content, Covid, disaster, disease, distribution, economy, evidence, forest, illegal logging, Impact, implementation, information, interaction, internet, japan, location, management, market, model, observation, oil, pandemic, piracy, platform, problem, production, representative, smuggling, social medium, social network analysis, solution, stakeholder, technology, Thailand, tourism, underground, economy, vietnam, village.
2	Cluster 2	Bali, child, education, educator, Indonesian society, islamic boarding school, islamic education, islamic school, java, majority, mobile learning, politic, researcher, school, social movement, Southeast Asia, student, teacher, Terrorism, university
3	Cluster 3	Academic, Aceh, Asia, democracy, Egypt, identity, Indonesian, Islam, Malaysia Nationalism, parliament, party, Singapore, violence, woman
4	Cluster 4	Farmer, ICT, justice, norm, rural area, social capital, social network, social, structure, technique, trust, welfare.
5	Cluster 5	Bandung, citizen, decentralization, democratization, district, governance, health, interest, local government.

This also marks the findings of our article that if we take a deep look at publications regarding the network society and Indonesia based on the Scopus database in the span of 45 years, the topics that are

represented by keywords/terms are grouped into 5 clusters. For each of the clusters, there is a specific characteristic in the form of general/common denominator that bridges all of the keywords inside.

For the detailed explanation for each cluster the elaboration is as follows: It can be understood that Cluster 1 consists of terms that are related with Economic growth and environment issues. There is also a high chance of case study approaches among the publications as there are several countries that appear in this cluster, as well as certain commodities that are related with trade and environment at the same time (forest, oil,

tourism, etc.). It is also certain that words that have correlation with network society exclusively also appear here (interaction, information, internet, etc.). Moreover, the discussion on COVID-19 pandemic is included in this cluster. It means that, when we're talking about economic growth, it can't be separated from the pandemic situation. In other words, the pandemic had a big impact on this field of study. This also emphasizes

that there is a connection between pandemic and network society since the pandemic has boosted the implementation of technology as an alternative of doing various things like economic activity to working from home during the social restriction policy. Research has found that the COVID-19 pandemic has directly affected the supply and output of labor, resulting in a significant negative impact on economic growth (Xiang et al., 2021).

Meanwhile, cluster 2 consists of terms that belong to education sector and also terms that have closer proximity with Indonesia, or what has happened in Indonesia, since words like Bali, terrorism, Java, Islamic education, politic. The terms in cluster 2 focusing on security, especially terrorism issue. As we all know together that there was terrorism accident happened in Bali Island. On October 12, 2002 at around 11 pm, three bombs were detonated in Bali, to be precise at the Sari Club and Paddy's Bar and one in front of the American consulate, which in fact is a busy area. At least 202 people were killed, of whom 88 were Australians, and hundreds injured. The action was carried out by the Jemaah Islamiyah terrorist organization (National Museum Australia, 2022). There was also other security-related event in Indonesia which attract international attention such as JW Marriot bomb explosion in 2009 (Schulze, 2018). This may heavily prove the existence of events which drive the

development of network society in Indonesia, as we can see that most of the term related with network society in this context is associated with the security issues by the scholars since there's connection based on the map above.

Cluster 3 consist of terms that are related with Islam, democracy, and Malay-related things, shown by the words that appear, including democracy, Aceh, Malaysia, Singapore, and Islam. The keywords imply that they have geographical proximity. Moreover, they also have similarity that they have background with Muslim countries. As we all know that Islam can serve as common denominator among certain regions. In this case, in Southeast Asia, Islam becomes one of important factors to be considered when formulating foreign policy (Riyanto et al., 2018). The same thing also happened in Malaysia, where the Islamic political movement in Malaysia was controlled by the political party holding the reins of power, namely UMNO (Rohman, 2020). These topics are also considered important in Indonesia as there were publication and researches related to the discussion about Islam, democracy, and neighboring countries.

Next, cluster 4 contains social justice and issues that may be related to it, represented by terms like justice, social, structure, and trust. When discussing social justice in society, it is very vulnerable towards the trust issue developed in society since

dissatisfaction emerged from injustice in government policy. We can take the example of a social assistant towards justice using network society during the COVID-19 pandemic. The case of the former Minister of Social Affairs, Juliari Peter Batubara, who was accused of accepting bribes from Rp. 32.482 billion from 109 companies providing social assistance during the COVID-19 pandemic have caused polemics, which have tarnished the history of government and bureaucratic practices in Indonesia. The party that should be relied on by the community actually betrayed the public's trust due to the bribery incident (Savitri, 2021).

Last but not least, Cluster 5 consists of terms that may be related with local government, shown by the word "decentralization", governance, district, and so forth. Indonesia is a country that adheres to the principle of decentralization. According to Law No. 23 of 2014 concerning regional government, decentralization is defined as the handover of government affairs by the central government to autonomous regions based on the principle of autonomy. The purpose of decentralization is to create a democratic government, through effective, efficient and economical public services (Qothrunnada, 2021). When we find "Bandung" in cluster 5, we believe Bandung was the most discussed object by the scholars on decentralization or local governance issues. Based on the 5 clusters above, it can be concluded that the

topics on network society in Indonesia are extensive because the discussion emerged in various fields. Starting from the economic aspect, security issue, social injustice, identity to local governance issue.

In the generated data visualization by Vos Viewer, especially in the density map, it showed that some words have brighter colors compared to others. This indicates that the particular words (in this case are words with yellow 'aura') hold more significance in the publications about network society in Indonesia, as maybe there are more scholars talking or discussing it. In this case, the term/keyword that belongs to this category is "model", "problem", "identity", and "education". Based on the explanation above, literature on network society resulted in a broad spectrum. The aspects discussed by the scholars grew depending on the trend or phenomenon developed in society. This also can be mentioned that the topic linkages on the network societies move very dynamic. Furthermore, Castell consider power relations to be the basic relations of society in all domains, showing how his research uses this approach to study urban structure and spatial dynamics; use and consequences of information technology; globalization process; the formation of new social structures, network societies; and the interplay between communication and power in digital environments (Castells, 2016).

## F. CONCLUSION

From the result, it can be seen that there are 5 clusters of terms on how Indonesian scholars scrutinize issues regarding network society through their publications on Scopus database during 1977-2022. There are clusters that are related with the issue about (but not limited to) Economic Growth and Environment Issue, Education Issue, Regionalism and Identity, Social justice and its complexity, and last but not least is about Local Governance. It can be understood also that during the development of Network Society in Indonesia, there are some special events that heavily influenced how it is utilized or formed, like COVID-19 pandemic and terrorism acts. This is interesting since the keyword "terrorism" intertwined with terms related to education. This means that this research can contribute for the future research and this can be the basis for the next researcher to deepen the analysis on the specific topic related to terms "education" and "terrorism". This is also very important since "terrorism" in Indonesia is very sensitive and closely related to identity issue. Even though, there are various narration stated that education in one hand can be the medium to counter the terrorism, but in the other hand, vulnerable towards spread inappropriate thoughts such as radicalism.

Still, the discussion about the most suitable or affirmed 'model' of network society for Indonesia is one that exists throughout the years. The most suitable model of network

society to be used in Indonesia also may stimulate benefit on the efforts to solve the problem within the digitally-influenced Indonesian society. In addition, it is suggested that somehow, education and identity are the keywords that are more significantly related to network society-based research, but slowly replaced by mobile learning, pandemic, and social capital in recent years. This is because the pandemic has transformed to the new habit where various activities in daily life move to virtual or using digital platforms. Another finding can also become an insight and consideration for future research and studies related to the development of network society in Indonesia is that the impact of network society towards individuals in Indonesia is also potential to be assessed.

There is a need exist for research and studies that can be able to measure the significance of network society towards individual behavior in Indonesia. Lastly, we can conclude that the development of network society in Indonesia is propitious, and this study also shows that there are possibilities of a new trend of research, centered in the problem-reaction or a pathway to find a new model/variation of network society, especially in Indonesia. These possibilities can also be directed to more detailed research on specific topics such as security, education, religious studies, politics and so fourth.

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