

Two Decades of Digital Citizenship Research Trends: A Bibliometric Analysis of the Scopus Database (2004–2024)

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Informasi artikel

Received: 2 Januari 2025;

Revised: 10 Januari 2025;

Accepted: 26 Januari 2025.

Keywords:

Digital Citizenship.

Bibliometrik.

Scopus.

ABSTRACT

Over the past few decades, digital citizenship has become an increasingly important subject of academic research. A person's ability to use digital technology effectively and responsibly in their daily lives is referred to as digital citizenship. To reduce the gap in access to technology, the public must participate in responding to the development of digital technology and the revival of internet use. The purpose of this study is to identify research trends on the subject of digital citizenship. This study used 215 documents searched in the Scopus database and used bibliometric analysis techniques with RStudio and VOSviewer. From the results of the analysis, it can be concluded that this study started from 2004 to 2024, with an increase of 24.19 percent in 2024. The devices with the highest h-index are Information Technology and Education. The most productive affiliates are The Ohio State University, University of North Carolina Charlotte, Near East University, University of Muhammadiyah Surakarta, and University of Missouri. Choi M discussed research on digital citizenship with the highest total citations. The words media literacy, digital citizenship education, teachers, and professional digital competence are recommended keywords used when you want to conduct research on the topic of digital citizenship.

ABSTRAK

Dua Dekade Trend Penelitian Kewarganegaraan Digital: Analisis Bibliometrik Database Scopus (2004-2024). Selama beberapa dekade terakhir, kewarganegaraan digital telah menjadi subjek penelitian akademik yang semakin penting. Kemampuan seseorang untuk menggunakan teknologi digital secara efektif dan bertanggung jawab dalam kehidupan sehari-hari disebut sebagai kewarganegaraan digital. Untuk mengurangi kesenjangan akses teknologi, masyarakat harus berpartisipasi dalam merespon perkembangan teknologi digital dan kebangkitan penggunaan internet. Tujuan penelitian ini adalah untuk mengidentifikasi tren penelitian tentang subjek kewarganegaraan digital. Penelitian ini menggunakan 215 dokumen yang dicari di database Scopus dan menggunakan teknik analisis bibliometrik dengan RStudio dan VOSviewer. Dari hasil analisis, dapat disimpulkan bahwa penelitian ini dimulai dari tahun 2004 hingga tahun 2024, dengan peningkatan 24,19 persen pada tahun 2024. Perangkat dengan h-index tertinggi adalah Teknologi Informasi dan Pendidikan. Afiliasi yang paling menghasilkan, yaitu The Ohio State University, University of North Carolina Charlotte, Near East University, Universitas Muhammadiyah Surakarta, dan University of Missouri. Choi M membahas penelitian mengenai Kewarganegaraan digital dengan total kutipan tertinggi. Kata media literacy, digital citizenship education, teachers, dan professional digital competence menjadi rekomendasi kata kunci yang digunakan apabila ingin melakukan penelitian dengan topik Kewarganegaraan digital.

Kata kata kunci:

Kewarganegaraan

Digital;

Bibliometrik;

Scopus.

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How to Cite : Aprilianata, Mahendra, W., & Ramadhan, I. (2025). Two Decades of Digital Citizenship Research Trends: A Bibliometric Analysis of the Scopus Database (2004–2024). *De Cive : Jurnal Penelitian Pendidikan Pancasila Dan Kewarganegaraan*, 5(1), 38–51.
<https://doi.org/10.56393/decive.v5i1.3032>



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Introduction

The rapid advancement of digital technology today has led to digital dependency across all aspects of life, enabling citizens to connect with one another (Kirani & Najicha, 2022). Essentially, the more sophisticated digital technology becomes, the more it transforms the world (Trisiana et al., 2019). Information and communication technologies are now closely linked to how citizens interact with each other (Zaki Hanafi & Ardianto, 2024). This is due to the dynamic development of technology, marked by the digital revolution, which also has the potential to create social gaps (Farida, 2024). These disparities can be observed in both the positive and negative impacts: for instance, improved individual connectivity on the one hand, and digital divides between developed and developing countries on the other (Alinata et al., 2024). Continuous technological advancements have also contributed to a moral and ethical crisis (Putri et al., 2023). This underscores the urgent need to develop digital citizenship in response to the disruptions and disparities emerging in the era of Society 5.0 (Nurul Insani & Hamidah, 2023).

Education plays a crucial role in addressing the disruption caused by information and technology. This is in line with the role of digital technology, which has made education globally accessible (Dina Destari, 2023). In this context, Civic Education aims to develop digital literacy focused on cultivating citizens who can critically, responsibly, and empathetically engage with information a concept widely known as digital citizenship (Feriyansyah & Dwiputri Maharani, 2023). Digital citizenship is closely linked to civic values, which are increasingly important in the digital era, as they significantly influence citizens' behavior. Moreover, a strong sense of citizenship helps to address widespread social issues in the digital era and contributes to national security and sovereignty (Cahya et al., 2024). The concept of digital citizenship is essential in today's globalized and technologically dynamic world, given its substantial impact on societal thinking and behavior. It is therefore necessary to cultivate a resilient civic mindset so that citizens develop a sense of responsibility and care for their nation and fellow citizens. This is especially vital in the complex and rapidly evolving digital age (Rizka Wulandari et al., 2023). Without proper implementation, the current era of digital technology, information, and communication may potentially conflict with the core values of Pancasila (Akmalludin et al., 2024). All these factors demand secure data management and guaranteed privacy to ensure the protection of citizens' personal information, thus accelerating both local and global citizen connectivity, particularly through education (Permatasari et al., 2024).

Digital citizenship is a process through which individuals or groups commit to social justice by critically analyzing the social, political, economic, and technological impacts of digital developments using the knowledge, skills, and attitudes they possess, with the goal of participating responsibly in digital society (Peart et al., 2024). In line with this, digital citizenship refers to a person's presence in the digital world and reflects their behavior through the legitimate, safe, ethical, and responsible use of information and communication technology (Gulcan Ozturk, 2021). Digital citizenship is closely tied to individuals' online behavior and their active engagement as citizens through digital platforms (Jones & Mitchell, 2016). It is a term that encompasses the competencies, knowledge, and behaviors needed to use digital technology wisely and productively (Setyawan et al., 2023). In connection with the rapid industrial era, one indicator of a country's success is how wisely it uses digital technology to improve societal well-being (Tutur Mulia, 2023).

Discussions on digital citizenship are closely related to the rapid development of information and communication technology. In Indonesia, the development of ICT infrastructure has shown positive progress. This is reflected in the increasing Information and Communication Technology Development Index (ICTDI), which reached 5.85 in 2022—higher than in the previous four years: 5.76 in 2021, 5.59 in 2020, 5.32 in 2019, and 5.07 in 2018 (BPS, 2023).

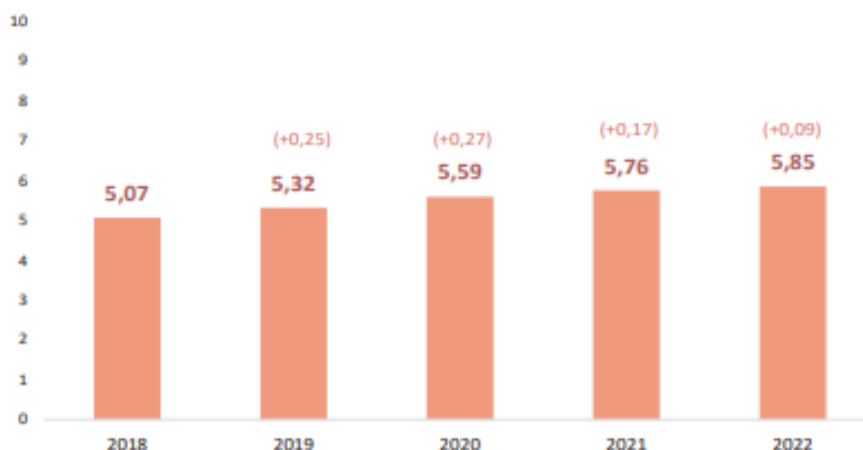


Figure 1: ICT Development Index in Indonesia, 2018–2022 (BPS, 2023)

In correlation with the steadily increasing Information and Communication Technology Development Index, the number of internet users in Indonesia has also grown each year. According to data from Repotal (2024), the year 2024 recorded the highest number of internet users in Indonesia, reaching 185.3 million users. The internet was primarily used to access information via Google and, more prominently, through social media platforms (Frisca Rizti, 2024). The growing use of digital technology, information, and communication through the internet presents both opportunities and challenges in fostering good and smart citizenship in the digital era.

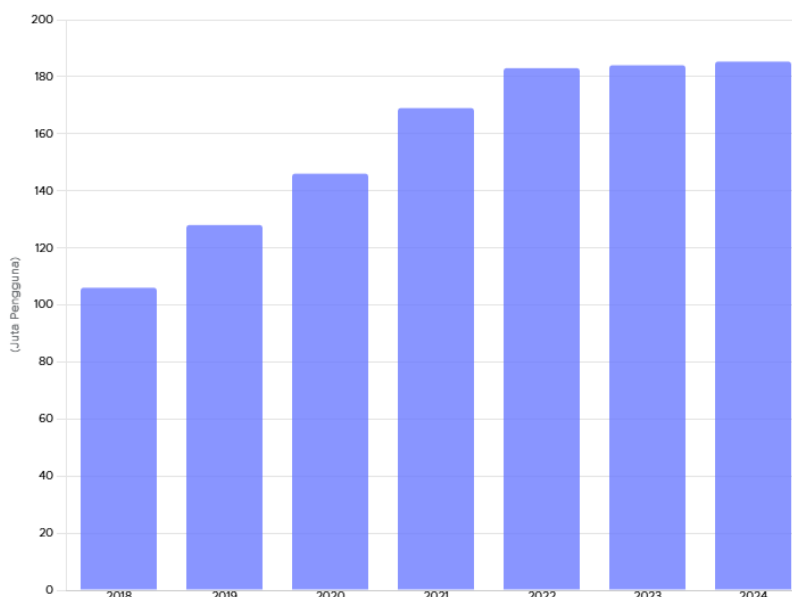


Figure 2. Reportal Data on the Number of Internet Users in Indonesia

Based on the explanation above, the concept of digital citizenship can serve as a strategic alternative to maximize the potential associated with the growing number of internet users in Indonesia, while also offering a solution to address the accompanying challenges. This forms the rationale for the present study, which aims to conduct a bibliometric analysis of research trends related to digital citizenship using the Scopus database. Scopus is recognized as a global, reputable, and up-to-date database that indexes high-quality and trustworthy journals. This analysis aims to identify key topics discussed, methodologies employed, and the countries and institutions most active in this field of research.

Through bibliometric analysis, the study is expected to reveal trends and gaps in the existing literature. Most importantly, digital citizenship is considered a crucial topic within the social sciences, particularly in the field of civic education in the current information technology era. It encompasses citizens' rights, responsibilities, and participation in a complex digital environment shaped by the rapid development of information and communication technologies. In line with this, research on digital citizenship can ultimately help guide future research and inform public policy in order to better understand the dynamics of digitalization that affect social, political, and educational life. Furthermore, it plays a critical role in promoting digital literacy education among citizens, particularly concerning digital issues, data privacy security, communication ethics, and active participation in digital spaces (Milenkova, & Lendzhova, 2021).

Method

This study employs a bibliometric analysis using the Scopus database as the primary data source. Bibliometric analysis is a statistical method related to publication information, used to examine publications within a specific field (Muhammad et al., 2022). It is applied to understand the development of a scientific discipline through a scholarly assessment from social, intellectual, and conceptual perspectives (Zafrullah & Ramadhani, 2024). Bibliometric analysis explores the evolution of a research domain, highlighting key topics, authors, and the conceptual structure of a discipline through a quantitative study of journals and other sources of scientific communication (Zafrullah et al., 2024). The selection of Scopus is based on its multidisciplinary coverage and reputation as one of the leading sources of scientific information. Data collection began by filtering articles based on their titles, focusing on the keyword *digital citizenship*. The use of this keyword was intended to narrow the scope of the topic and yield more specific and relevant literature. The search was limited to the number of publications, keywords, and document titles. The publication year range was set between 2004 and 2024. The data selection process follows the PRISMA protocol, which is presented in the diagram below. The data were limited to document types classified as articles and reviews in the field of social sciences and written in English. After the filtering process, a total of 215 relevant documents were identified and re-examined before being included in the analysis using the VOSviewer tool. Data validation in this study was carried out through two key stages. First, a filtering process using the keyword *digital citizenship* in article titles on Scopus was conducted to ensure that only documents truly relevant to the research topic were included. This step significantly reduced the potential for collecting data that did not align with the research objectives. Second, a re-checking of documents before inputting them into VOSviewer and R Studio was conducted to verify the accuracy and relevance of the collected data. Thus, these validation steps ensured the quality and reliability of the data used in the bibliometric analysis. The results of the filtering and verification stages were then analyzed using VOSviewer and R Studio, which allowed for the visualization of co-occurrence patterns and density among topics in the literature, as well as the identification of research trends. This aims to provide a comprehensive overview of the development and scholarly contributions related to *Digital Citizenship* in the Scopus-indexed literature.

Results and discussion

This section includes the mapping of global publication trends focusing on year of publication, subject areas, and author affiliations related to digital citizenship. The analysis reveals patterns and distribution of documents over time, identifies the academic disciplines most actively exploring this topic, and highlights contributions from various author affiliations. In addition, mapping the contribution of documents based on citation counts provides an overview of the impact and relevance of digital citizenship literature within the scholarly community. This study offers recommendations for future research directions, establishing a foundation for knowledge development and addressing

existing research gaps. This section provides in-depth insights into the global development of literature on digital citizenship, guiding researchers and practitioners in understanding current research dynamics and identifying areas that require further exploration.

The Development of Digital Citizenship Publications. Research on digital citizenship from 2004 to 2024 has experienced significant growth. The highest number of Scopus-indexed publications on digital citizenship occurred in 2024, reaching 23 publications (21.9%). Further details on the growth of publications related to digital citizenship are presented in the following table.

Table 1: Year of Publication on Digital Citizenship in Scopus

Publication Year	Quantity	Percentage (%)
2024	52	24.19%
2023	31	14.42%
2022	34	15.81%
2021	17	7.91%
2020	18	8.37%
2019	13	6.05%
2018	14	6.51%
2017	10	4.65%
2016	8	3.72%
2015	8	3.72%
2014	3	1.40%
2013	0	0.00%
2012	2	0.93%
2011	1	0.47%
2010	0	0.00%
2009	1	0.47%
2008	1	0.47%
2007	1	0.47%
2006	0	0.00%
2005	0	0.00%
2004	1	0.47%
Total	215	100.00%

The development of digital citizenship publication growth, as shown in Table 1 and Figure 3, indicates a significant increase from 2004 to 2024. Publications were relatively sparse and fluctuated slightly from 2004 to 2014. However, in 2005, 2006, 2010, and 2013, there was stagnation, with no publications on digital citizenship. Starting from 2015 to 2020, the number of publications began to rise, totaling 71 publications. A significant increase occurred in the decade from 2010 onward, especially after 2015. The highest peak was recorded in 2024, with publications accounting for 24.19% of the total. This was followed by 2022 (34 publications or 15.81%), 2023 (31 publications or 14.42%), and 2021 (17 publications or 7.91%). The increase in the number of publications on digital citizenship has several important implications. First, it indicates that the concept of digital citizenship has become a major focus in academic discourse, reflecting its relevance in addressing citizenship challenges in the digital era. The analysis results show that the concept of digital citizenship has emerged as a central point of attention in academic discussions, underscoring its significance in the context of digital citizenship challenges.

Documents by year

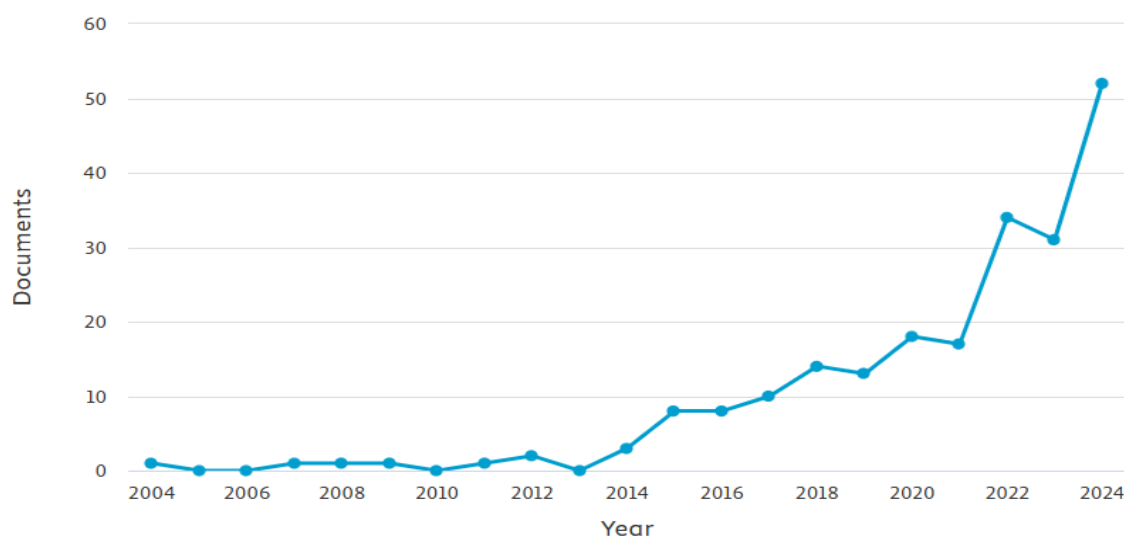


Figure 3: Publication Years on Digital Citizenship in Scopus

Core Journals on Digital Citizenship. Based on the search results using the keyword "Digital Citizenship" in Scopus, 215 publications were identified. From these, it was found that the highest number of international publications in the field of Digital Citizenship were published in the core journal *Education and Information Technologies*. The top ten core journals that have published developments in Digital Citizenship are listed in the table below.

Table 2: Core Journals on Digital Citizenship

Sources	Articles
EDUCATION AND INFORMATION TECHNOLOGIES	11
JOURNAL OF E-LEARNING AND KNOWLEDGE SOCIETY	10
CITIZENSHIP STUDIES	8
EDUCATIONAL TECHNOLOGY AND SOCIETY	5
COMPUTERS AND EDUCATION	4
INTERNATIONAL JOURNAL OF COMMUNICATION	4
JOURNAL OF HIGHER EDUCATION THEORY AND PRACTICE	4
NEW MEDIA AND SOCIETY	4
COMPUTERS IN THE SCHOOLS	3
INTERNATIONAL JOURNAL OF EMERGING TECHNOLOGIES IN LEARNING	3

The presence of the ten journals listed in the table provides an overview of the research trends in the topic of digital citizenship. Based on Table 2 and Figure 4, it can be seen that after *Education and Information Technologies*, there are other publications that have contributed to the dissemination of Digital Citizenship, including *Journal of E-Learning and Knowledge Society*, *Citizenship Studies*, *Educational Technology and Society*, *Computers and Education*, *International Journal of Communication*, *Journal of Higher Education Theory and Practice*, *New Media and Society*, *Computers in the Schools*, and *International Journal of Emerging Technologies in Learning*. Although journals like *Computers in the Schools* and *International Journal of Emerging Technologies in Learning* have relatively low publication rates, all of them contribute significantly to the research on digital citizenship globally.

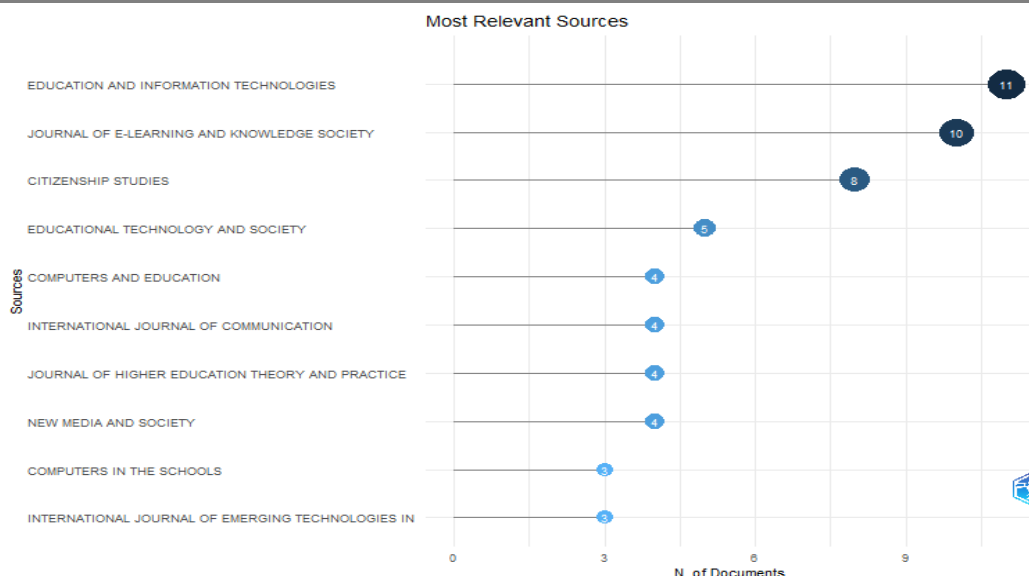


Figure 4: Core Journals on Digital Citizenship in Scopus

Publishers of Digital Citizenship Publications. Based on the data analysis, it shows that The Ohio State University is the institution with the highest number of publications on Digital Citizenship. This is followed by the University of North Carolina Charlotte, Near East University, Universitas Muhammadiyah Surakarta, and the University of Missouri.

Table 3: Publishers of Digital Citizenship Publications

Penerbit/Afiliasi	Jumlah
The Ohio State University	58
University of North Carolina Charlotte	57
Near East University	34
Universitas Muhammadiyah Surakarta	22
University of Missouri	8

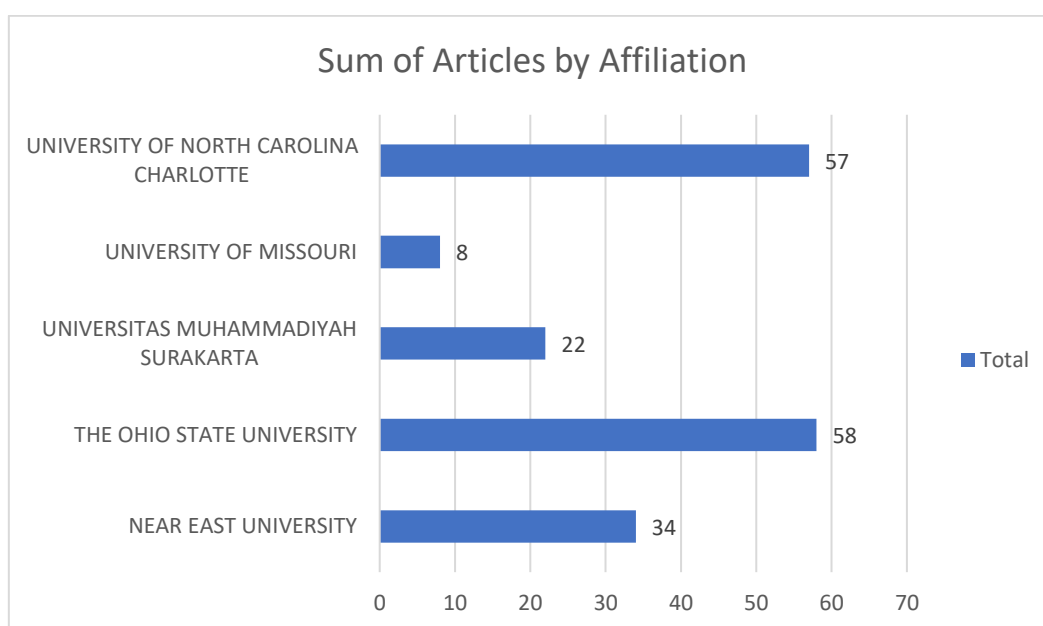


Figure 5: Publisher of Digital Citizenship Publications

The majority of academic research contributions on digital citizenship originate from various countries around the world. Based on Table 3 and Figure 6, *The Ohio State University* in the United States is identified as the institution with the highest number of publications on digital citizenship, with a total of 58 publications. Ranked second is the *University of North Carolina at Charlotte*, also from the United States, with 57 publications. The third position is held by *Near East University* (34 publications), followed by *Universitas Muhammadiyah Surakarta* from Indonesia in fourth place (22 publications), and the *University of Missouri* from the United States in fifth place (8 publications). The presence of universities from diverse countries enriches the discourse on digital citizenship.

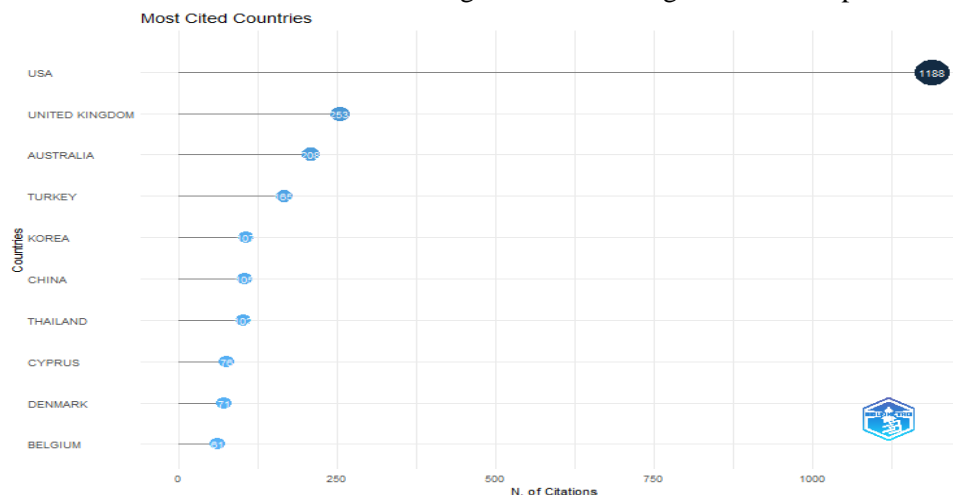
Countries with the Highest Number of Scopus-Indexed Digital Citizenship Publications. The countries contributing the highest number of Scopus-indexed publications on digital citizenship are the United States, the United Kingdom, followed by Australia, Turkey, and South Korea. These contributions are summarized in Table 4.

Table 4: Countries with the Highest Number of Scopus-Indexed Digital Citizenship Publications

Country	TC	Average Article Citations
USA	1188	36
United Kingdom	253	28.1
Australia	208	20.8
Turkey	165	15
Korea	107	35.7
China	105	15
Thailand	102	11.3
Cyprus	76	19
Denmark	71	35.5
Belgium	61	61

The ten countries listed in Table 5 illustrate the extent of each country's contribution to research on digital citizenship. As shown in Table 3, the United States is the leading contributor, with a total of 1,188 publications and an average of 36 citations per publication. This reflects the significant influence and contribution of the United States in digital citizenship research. Following the U.S. are the United Kingdom (253 publications with an average of 28 citations), Australia (208 publications with 20 citations), Turkey (165 publications with 15 citations), and South Korea (107 publications with 35 citations). These countries represent diverse backgrounds in the development of knowledge related to digital citizenship at the international level. This indicates that digital citizenship research has become a topic of discussion across disciplines and across nations.

Table 5: Countries Publishing Research on Digital Citizenship



Researcher Productivity in Digital Citizenship. The productivity of the top 10 researchers in the field of digital citizenship from 2007 to 2024, as indexed in Scopus, shows relatively similar levels of output, ranging between 2 and 3 publications each, as presented in Table 6.

Table 6: Productivity of Researchers in Digital Citizenship

Authors	Articles	Sitasi
Choi M	5	3
Martin F	4	1
Von Gillern S	4	1
Wang C	4	1
Akcil U	3	1
Calzada I	3	2
Cristol D	3	1
Prasetiyo Wh	3	1
Örtegren A	3	2
Altinay F	2	2

The ten researchers listed in Table 6 illustrate the contributions of individual authors to digital citizenship research. Based on Table 4 and Figure 7, Choi, M. is identified as the most productive author, with five articles that have been cited three times. Following this, Martin, F., Von Gillern, S., and Wang, C. each have four publications, with one citation each. Akçıl, U., Cristol, D., and Prasetiyo, W.H. have three publications each, also with one citation. Meanwhile, Calzada, I. and Ortegren, A. each have three publications with two citations. Lastly, Altinay, F. has authored two articles, which have received two citations. The diversity of the researchers' backgrounds and institutional affiliations reflects an important contribution to the advancement of knowledge on digital citizenship at the international level.

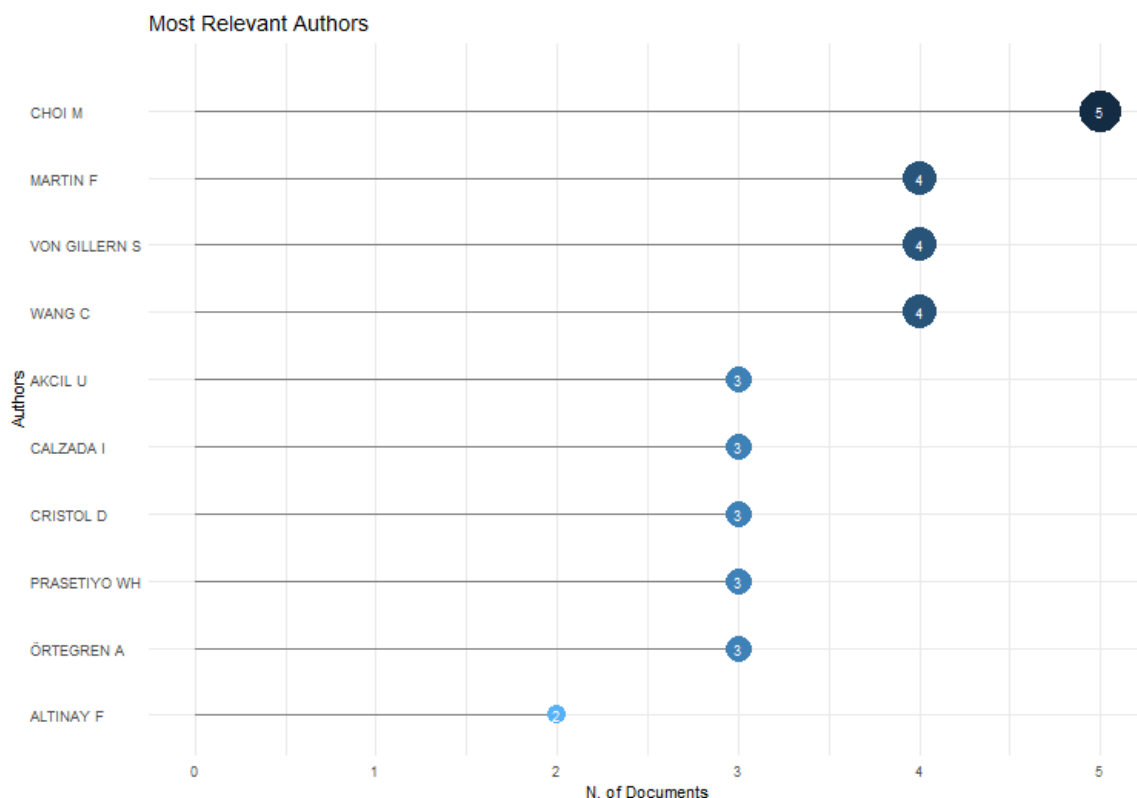


Figure 6: Researcher Productivity in Digital Citizenship

Mapping the Development of Publications Based on Keywords. Mapping research themes is a crucial step in summarizing scholarly contributions and identifying the need for further study. This study explores trends in dominant research themes, identifies knowledge gaps, and offers recommendations for future research directions. The analysis provides deep insights into well-explored areas while highlighting opportunities for additional contributions in the field of digital citizenship. Figure 8 illustrates that, based on keyword co-occurrence (co-word analysis), the development of Scopus-indexed digital citizenship publications from 2004 to 2024 can be categorized into seven clusters.

Cluster 1 (Red) includes keywords such as adolescents, China, citizenship, COVID-19, digital media, digital technology, digitalization, education, female, human, internet, systematic review, United Kingdom. Cluster 2 (Green) features terms like democracy, digital activism, digital citizenship, digital citizenship education, digital education, digital literacy, feminism, Hong Kong, human rights, Indonesia, media literacy, pre-service teachers, and teacher training. Cluster 3 (Blue) consists of computer crime, cyberbullying, digital citizenship, digital devices, digital identity, digital literacies, digital technologies, electronic document identification, netiquette, and students. Cluster 4 (Yellow) includes digital age, digital ethics, factor analysis, multivariate analysis, survey, teachers, technology, and university students. Cluster 5 (Purple) comprises higher education, internet self-efficacy, learning, online learning, and teaching. Cluster 6 (Light Blue) contains information literacy, social media, online social networking, and Thailand. Cluster 7 (Orange) includes e-learning, educational technology, ICT, and secondary education.

Figure 8 presents a comprehensive map of research themes related to digital citizenship, emphasizing the diversity of topics addressed in the academic literature. Two dominant themes that stand out are *digital citizenship* and *digital literacy*. While both have received substantial attention, there remains significant room for further development. Digital citizenship serves as a crucial foundation for shaping public understanding of civic engagement in the digital age, while digital literacy highlights the essential competencies that citizens must possess.

Further exploration of the relationship between digital citizenship, digital literacy, and digital professional competencies can make a vital contribution to shaping future research agendas and provide a stronger foundation for digital citizenship practices. The identified keywords offer a comprehensive overview of the dimensions involved in the development of digital citizenship. The thematic mapping of digital citizenship research highlights the diversity of focus areas within the scientific literature. The emphasis on digital citizenship and digital literacy opens up further research opportunities. These gaps indicate that many aspects of both areas remain underexplored, which limits the establishment of a solid foundation for practical applications of digital citizenship.

Therefore, it is recommended that future research focus on developing digital literacy methodologies that can foster awareness of digital citizenship, particularly through the lens of digital competence. Further research can also explore educational strategies for digital citizenship in two main areas: information delivery and the promotion of active participation, especially within the context of understanding digital civic competencies. These recommendations align with the concept that digital citizenship aims to foster digitally literate citizens. By conducting such studies, we can move toward a more holistic understanding of how digital citizenship can act as a catalyst for building meaningful and impactful civic engagement in the digital realm. As such, future research guided by this approach can address identified knowledge gaps and make significant contributions to the development and implementation of the digital citizenship concept in shaping responsible global citizens.

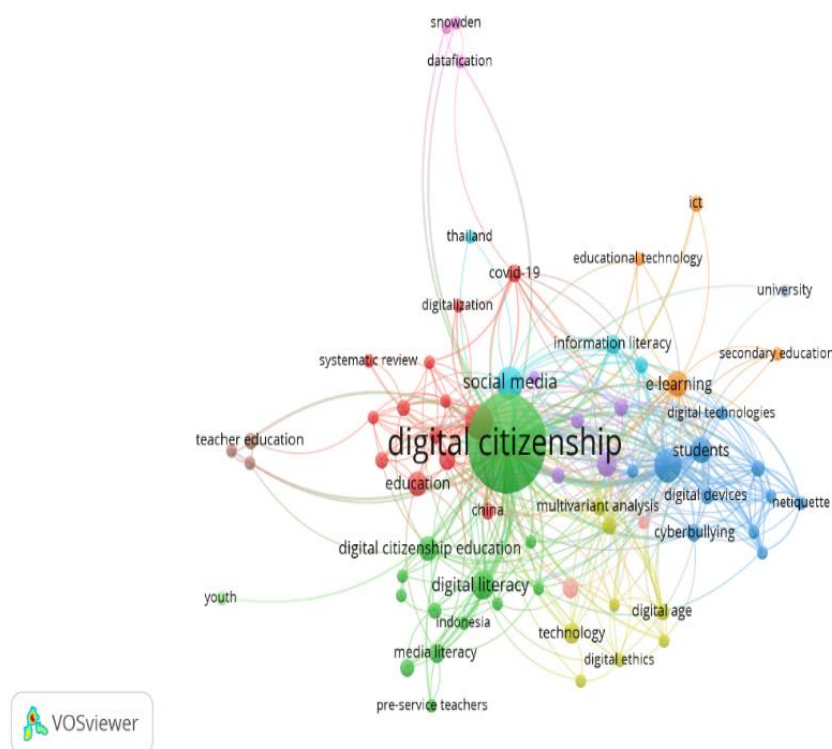
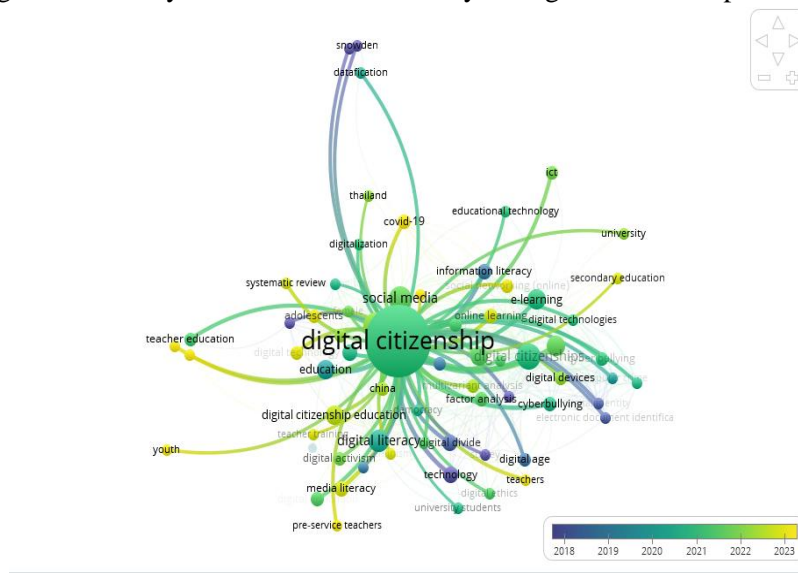


Figure 7: Mapping the Development of Publications Based on Keywords

Novelty in Digital Citizenship Research

Figure 8: Overlay Visualization of Novelty in Digital Citizenship Research



Recent developments in digital citizenship research reveal notable novelty through the prominence of keywords such as *media literacy*, *digital citizenship education*, *teachers*, *teacher education*, *pre-service teachers*, *post-digital*, *professional digital competence*, *youth*, *secondary education*, *social networking (online)*, *COVID-19*, and *adolescents*, which are highlighted in yellow in the visualization. These keywords indicate emerging trends within the field of digital citizenship research. Such keywords can serve as valuable references for future studies, guiding researchers toward contemporary and relevant areas of inquiry. It is particularly compelling to explore how digital media,

digital citizenship education, teacher professional development, and professional digital competencies contribute to the broader context of digital citizenship. These themes offer rich potential for expanding the theoretical and practical understanding of civic engagement in the digital era.

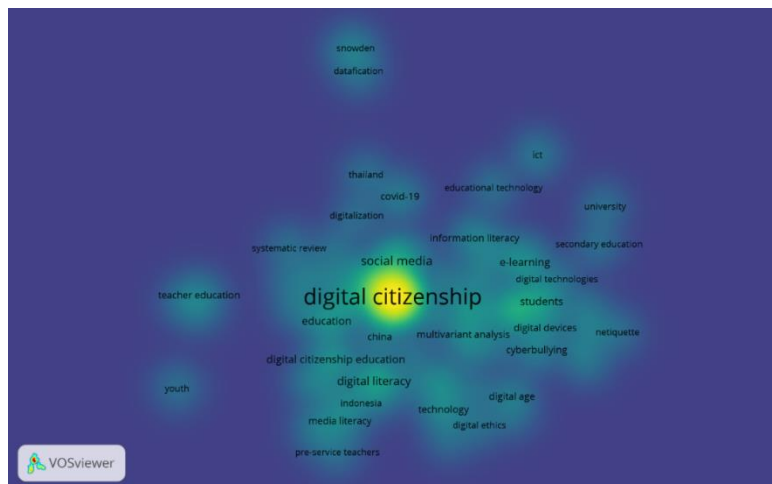


Figure 9: Density Visualization of Novelty in Digital Citizenship Research

Digital citizenship is seen as a solution to minimizing the negative impacts of digital technology (Saputra, 2022). It plays a crucial role in guiding individuals affected by technological disruption to adopt ethical communication practices in the digital realm. Digital citizenship helps citizens develop the competencies necessary for future digital civility (Susanto & Budimansyah, 2022). The discussion on digital citizenship has increasingly become a research focus within the field of Civic Education. Such studies are essential for enhancing citizens' awareness in understanding, interpreting digital content, conducting research, and communicating effectively in digital environments (Setyawan et al., 2023; Gultom, 2024). Therefore, citizens must think critically about the moral challenges and opportunities that arise in the digital world.

This research can serve as a foundation for further studies on Pancasila and Civic Education. It highlights the dynamic evolution of Pancasila education in the digital era. Trends in digital citizenship research within Pancasila education show a significant rise in Scopus-indexed publications over the past two decades. In 2024, the number of publications reached a peak of 52, accounting for 24.19% of the total. Various approaches and perspectives on digital citizenship have been explored by scholars and institutions around the world. The growing body of research in this field reflects a positive development in digital citizenship scholarship.

Overall, this study underscores the importance of digital citizenship within the context of Pancasila education from multiple perspectives. Recent research has focused on the integration of digital citizenship and classroom instructional methods. In addition, studies have examined how teacher competencies contribute to the development of digital citizenship. Other studies address the challenges and consequences associated with digital technology use. These themes collectively reflect ongoing efforts to deepen understanding of digital citizenship and its implementation in Pancasila education.

Conclusion

The main findings affirm that this study successfully identified key trends in digital citizenship research, core journals, major publication publishers, researcher productivity, countries with Scopus-indexed publications, and the thematic development map based on keywords. The results show a significant increase in Scopus-indexed digital citizenship research from 2004 to 2024, with the highest number of publications in 2024, reaching 52 articles, accounting for 24.19% of total international publications on digital citizenship. The United Kingdom emerged as the leading contributor to research

in this field, while The Ohio State University was identified as the most prolific institution publishing on this topic. The thematic mapping of digital citizenship research, based on keyword co-occurrence, revealed five distinct clusters. The authors recommend the addition of more comprehensive keywords to enhance future research and support the practical implementation of digital citizenship. The thematic analysis highlights the diversity of issues already explored, with a particular focus on digital citizenship and digital literacy as dominant and widely discussed research areas. Although these themes have received significant attention, there remains considerable potential for future research, especially in exploring deeper connections between digital citizenship, digital literacy, and professional competencies in the digital era. Digital citizenship education is a critical effort in fostering societal understanding and awareness of digital literacy as a foundation for cultivating responsible and informed citizens. Future research is recommended to further investigate effective strategies for promoting digital citizenship and to expand scholarly engagement across different global regions. Through such approaches, future studies can contribute more substantially to the development of policies and practical actions that support the formation of good digital citizens.

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