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Bibliometric analysis of digital library trends using information literacy in Scopus database

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Abstract

In the digital era, the rapid growth of information and the increasing reliance on technology in education and research have made digital libraries and information literacy essential areas of study. This paper aims to identify trends and map the landscape of research on digital libraries and information literacy using the VOSviewer application. A qualitative research method with a literature review approach was employed. A total of 59 documents were retrieved from the Scopus database, converted to CSV format, and analyzed using bibliometric techniques. The findings indicate research trends indexed in Scopus from 2014 to 2023, reflecting a growing interest in these topics. The analysis shows that the United States is the leading contributor, with 15 documents exploring various aspects of digital libraries and information literacy. Visualization mapping reveals that research in this field primarily focuses on topics such as information services, digital literacies, academic libraries, library services, university libraries, curricula, and education. These trends underscore the importance of digital libraries and information literacy in supporting learning and research processes in the digital age. A robust digital repository, combined with strong information literacy skills, enhances users' ability to access, evaluate, and apply information effectively, thereby promoting the acquisition of comprehensive and in-depth knowledge. This study not only analyzes current research patterns and thematic focuses but also introduces a computer-assisted bibliometric method as an alternative approach for conducting literature reviews.

Keywords: Digital library; Information literacy; Information services

Analisis bibliometrik tren perpustakaan digital dengan menggunakan literasi informasi di basis data scopus

Abstrak

Di era digital, pertumbuhan informasi yang pesat dan meningkatnya ketergantungan pada teknologi dalam pendidikan dan penelitian menjadikan perpustakaan digital dan literasi informasi sebagai bidang kajian yang sangat penting. Penelitian ini bertujuan untuk mengidentifikasi tren dan pemetaan kajian perpustakaan digital dan literasi informasi dengan bantuan aplikasi VOSviewer. Metode yang digunakan adalah penelitian kualitatif dengan pendekatan studi literatur. Sebanyak 59 dokumen diambil dari basis data Scopus, dikonversi ke format CSV, dan dianalisis menggunakan teknik bibliometrik. Temuan menunjukkan tren penelitian yang terindeks Scopus selama periode 2014 hingga 2023, mencerminkan minat penelitian terhadap topik ini, mencerminkan perhatian besar dari kalangan akademisi terhadap topik ini. Istilah yang paling sering muncul dan memiliki keterkaitan kuat antara lain: layanan informasi, literasi digital, perpustakaan akademik, layanan perpustakaan, perpustakaan universitas, kurikulum, dan pendidikan. Hasil ini menegaskan pentingnya peran perpustakaan digital dan literasi informasi dalam menunjang proses pembelajaran dan penelitian di era digital. Individu yang memiliki kemampuan literasi informasi yang baik dan akses ke perpustakaan digital yang memadai dapat lebih efektif dalam menelusuri, mengevaluasi, dan memanfaatkan informasi. Keterbatasan utama dari penelitian ini adalah penggunaan data yang hanya bersumber dari Scopus. Studi ini tidak hanya menyajikan analisis pola dan tema penelitian terkini, tetapi juga menawarkan pendekatan bibliometrik berbantuan komputer sebagai alternatif tinjauan pustaka. Simpulan menunjukkan meningkatnya minat akademik terhadap topik ini dan perlunya penelitian lanjutan pada area yang masih kurang guna untuk memperkuat integrasi perpustakaan digital dan layanan literasi informasi.

Kata Kunci: Layanan informasi; Literasi informasi; Perpustakaan digital

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INTRODUCTION

In the current era of abundant information, skills to acquire, assess, and employ information efficiently have become crucial (Raak et al., 2023). This phenomenon can be attributed to the rapid advancement of science and technology (IPTEK), leading to an inevitable proliferation of information (Axhami & Axhami, 2023). The proliferation of information demands our capacity to manage and organize existing information effectively. Selecting information efficiently is crucial to utilizing it effectively and accurately (Rutkauskaite et al., 2022). Thanks to advancements in information technology, the process of accessing available data or information can now be performed rapidly, effectively, and with a high level of precision (Rind et al., 2022). Advancements in science and technology promote the growth of IT-based administrative systems. This also applies to the library system administration (Atuase & Maluleka, 2023).

The need for information technology is intricately linked to the library's role as a driving force in the conservation and distribution of scientific and cultural information, which evolves alongside the development of writing, printing, education, and the human demand for information (Ashiq et al., 2023). Libraries ensure equitable access to information by identifying, collecting, managing, and providing public access. (Kumari & Sharma, 2021). Libraries must provide resources and tools for accessing electronic materials essential for acquiring unorganized knowledge (Sandi et al., 2022). A notable achievement of the library is the establishment of digital library services (Savarè, 2023). A digital library is a technology platform that enables the creation, search, and utilization of information in various formats. It operates within a vast digital network and includes collections of data and metadata that connect multiple data sources. These collections are managed and organized to facilitate access and retrieval of digital resources. The service's user community aims to fulfill the information requirements of the academic community (Brewer et al., 2017).

Digital libraries involve the utilization of information and communication technology (ICT) to enhance educational standards, empower individuals in the workforce, and enhance competitiveness (Begum & Elahi, 2022). The primary objective of digital libraries is to facilitate users in enhancing their scientific endeavors by providing faster access to book resources (La Macchia, 2021). Students should uitilize digital libraries as learning resources to enhance the quality of the remote learning process and facilitate tasks in independent learning (Owusu-Ansah et al., 2018). Establishing digital library services requires an initial focus on cultivating library human resources. This task is crucial since the domain of information and communication technology has evolved into a significant requirement for libraries (Frandsen et al., 2017a). The library serves as a venue for improving the quality of the learning process, promoting student literacy, and fostering motivation to utilize it as a valuable learning tool (Ramos-Vidal et al., 2021).

Librarians must possess information literacy to manage library materials successfully (Kuehn, 2023). Librarians must possess information literacy skills to effectively cater to the demands of their consumers (Dosso et al., 2021). Given the

accessibility and abundance of information, we must possess the capacity to select and employ information wisely (Julien et al., 2022). Information literacy is invaluable in education and in the execution of competency-based curricula, which require learners to independently find and apply information from a variety of sources (Ali et al., 2023). Information literacy encompasses the capacity to engage in critical and logical thinking, to approach acquired information with scepticism, and to assess the reliability and relevance of information prior to its utilization (Da Silva et al., 2019). Proficiency in information technology will significantly enhance an individual's information literacy. Information literacy is an ongoing learning process that equips individuals with the ability to access and utilize information, extending beyond the realm of schooling (Cuevas-Cerveró et al., 2023).

Numerous studies have been conducted on digital libraries and information literacy, with various researchers (Sandi et al., 2022) exploring promising models for library and information education. Students argue that libraries should primarily focus on providing information literacy courses and teaching library access skills in every department. Libraries should also provide online orientation support, host seminars on library practices within the university environment, and establish standards for accessing information through the library. Findings from La Macchia (2021) discuss academic digital libraries that promote equitable and inclusive educational environments. Librarians trained as mediators or conflict coaches can offer information literacy services and support. The goal is to foster an inclusive campus environment. In both roles, educators play a role in building students' competence and confidence, focusing on their achievements and progress, and contributing to a sense of belonging.

Furthermore, research by Mansour (Mansour, 2017), analyzes an investigation into the level of digital information literacy (DIL) among university libraries and information professionals. Library and information specialists at Southern Virginia University (SVU) are required to possess advanced qualifications and demonstrate proficiency in adapting to advancements in information and communication technology (ICT) and related skills. Receiving extensive and ongoing training is crucial to updating one's understanding of technology use and integration in library work. This training will encompass a wide range of ICT topics, including digital database administration, utilization of cutting-edge library software, and proficiency in providing efficient digital information services.

The establishment of a digital library is anticipated to function as an information service that effectively and efficiently meets user needs. In addition, the construction of a digital library encompasses more than just granting access to digital knowledge. Digital libraries should prioritize sustainable efficiency and the cultivation of information literacy skills, considering the issues outlined. The objective of this study is to identify trends and map digital libraries and information literacy, as well as to present an analysis of current research patterns and subject topics in the field of digital library and information literacy.

Despite the growing literature on digital libraries and information literacy, existing studies tend to focus on case-based assessments or conceptual analyses without employing a systematic bibliometric approach to map broader research trends.

Few studies have comprehensively visualized the intellectual structure and thematic evolution of this research area over the past decade using tools such as VOSviewer. This creates a critical research gap, especially in identifying underexplored themes and future research directions in the integration of digital libraries and information literacy services. Therefore, this study aims to fill this gap by conducting a bibliometric analysis of Scopus-indexed publications from 2014 to 2023. By applying network, overlay, and density visualization, this paper offers a systematic mapping of trends, contributors, and knowledge clusters, thus providing a meta-perspective that supports academic inquiry and policy development in library science.

RESEARCH METHODS

This research used a qualitative method with a literature study approach. Literature studies are used to analyze Digital Library and Information Literacy literature in depth, related to the research problem. This literature study aims to provide a summary of a potentially substantial and diverse collection of literature on a wide range of subjects (Munn et al., 2018). This study used a bibliometric approach. Bibliometrics is a medium for analyzing empirical data from published literature to observe publication patterns within a scientific discipline (Dharmani et al., 2021). Bibliometric studies aim to develop and map a specific survey (Setyaningsih et al., 2016). Thus, researchers can use bibliometrics to evaluate literature collections related to their topics and identify important themes. In conducting the research analysis, the author used the Vosviewer application to assist in analyzing and visualizing the research data.

The data in this study consisted of articles published between 2014 and 2023 (the last ten years) in journals published in the Scopus database. Scopus was selected as the primary database due to its status as one of the most comprehensive and reputable sources of peer-reviewed scientific literature. This database offered broad multidisciplinary coverage, including fields relevant to this study, such as digital libraries and information literacy. Furthermore, Scopus provides standardized metadata that supports accurate and reliable bibliometric analysis, making it highly compatible with tools like VOSviewer for mapping scientific knowledge.

The data used in this literature review were derived from **59 articles** downloaded from Scopus. The search was conducted using the following query string:

TITLE-ABS-KEY("Digital Library") AND TITLE-ABS-KEY("Information Literacy") AND (LIMIT-TO(SRCTYPE, "j") OR LIMIT-TO(SRCTYPE, "p")) AND LIMIT-TO(PUBSTAGE, "final") AND (LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "cp")) AND (LIMIT-TO(SUBJAREA, "SOCI") OR LIMIT-TO(SUBJAREA, "COMP")) AND (LIMIT-TO(PUBYEAR, 2014–2023)) AND LIMIT-TO(LANGUAGE, "English")

The search was limited to articles and conference papers published in their final stages, in the fields of **Social Sciences (SOCI)** and **Computer Science (COMP)**, and written in **English** between **2014 and 2023**. The resulting data were exported in **CSV and RIS formats** and included metadata such as author names, article title, keywords, publication source, and publication year (PUBYEAR), which were then analyzed using VOSviewer.

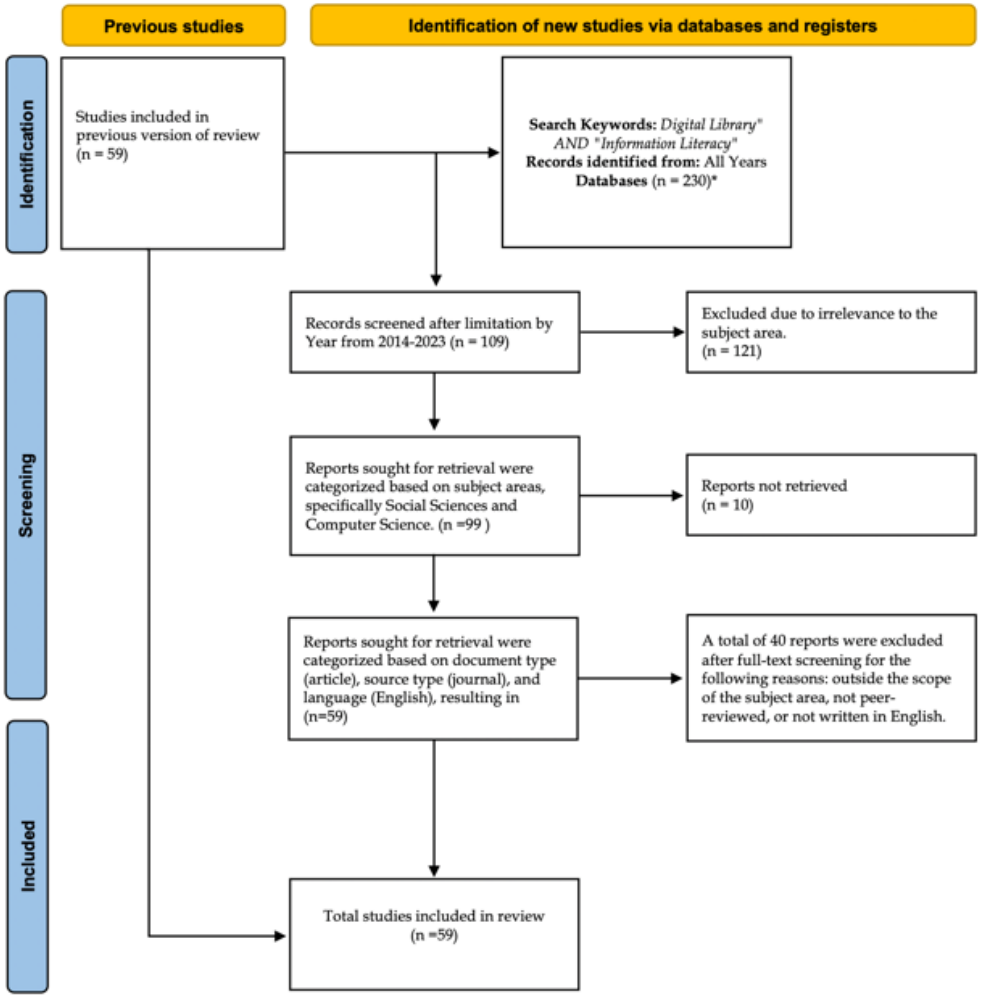

Figure 1. PRISMA flow diagram used to identify, screen, and include papers for our bibliometric review
Source: Processed by Author, 2024

This study employed three main parameters in the bibliometric analysis using VOSviewer: Network Visualization, Overlay Visualization, and Density Visualization. Network mapping based on the co-occurrence of keywords related to *"Digital Library"* and *"Information Literacy"* was conducted to identify the conceptual structure of the research field. Subsequently, overlay visualization was used to depict the development of studies over time, illustrating the dynamics of growth of topics related to digital libraries and information literacy based on the publication year, as well as identifying emerging research themes.

Meanwhile, density visualization was applied to highlight the concentration of keyword frequencies, where areas with higher densities indicated the most frequently studied topics. This approach facilitated the identification of dominant and central themes in the analyzed literature.

RESULTS AND DISCUSSION

The development of research publications on digital libraries and information literacy

A search of the Scopus database using the keywords "Digital Library" and "Information Literacy" yielded a total of 59 research articles. Publications pertaining to Digital Libraries and Information Literacy

between 2014 and 2023 encompass a diverse range of background information. This study examined and categorized data from the Document year, identifying the most prominent and least prominent patterns and trends. Furthermore, the analysis also revealed the countries that made the most significant contributions to scientific publications, the most frequently used journal sources, the most prolific authors, and the institutions actively engaged in the study. This varied dataset offered valuable insights into the characteristics of research in this field, enabling us to comprehend the progression of the study and the impact of various factors on future research directions. The visualization illustrated the progression of Digital Library and Information Literacy studies over the past decade.

Table 1. Global trends in publications on Digital Library and Information Literacy from 2014 to 2023

Year of research	Research amount
2014	6
2015	1
2016	3
2017	12
2018	5
2019	4
2020	5
2021	11
2022	7
2023	5

Source: Processed by Author, 2024

Table 1 represents the progression of research on Digital Libraries and Information Literacy. The data presented indicate that the examination of Digital Libraries and Information Literacy exhibited significant changes during the given time frame. Variations in scholarly attention to this subject indicate a shift in the discipline. In 2014, a total of six documents were published. However, this number decreased significantly to just one document in 2015. In 2016, the number of publications rose to three, and then experienced a substantial surge in 2017, reaching 12 papers. This growth was likely influenced by the effectiveness of supporting policies and programs. Subsequently, research interest declined, with a total of five documents in 2018 and four documents in 2019.

Furthermore, there was a consistent number of five documents in 2020. However, in 2021, there was a significant increase to 11 papers, which can be attributed to the pressing demand for access to digital information and literacy due to the COVID-19 pandemic. In addition, there was a significant decline in the number of documents in 2022, to only seven, and this was further followed by a fall to five papers in 2023. This variation indicated the ever-evolving nature of interest and study in the field of digital libraries and information literacy, implying a varied but persistent focus on the subject.

Countries with the most contributions in the field of digital library and information literacy

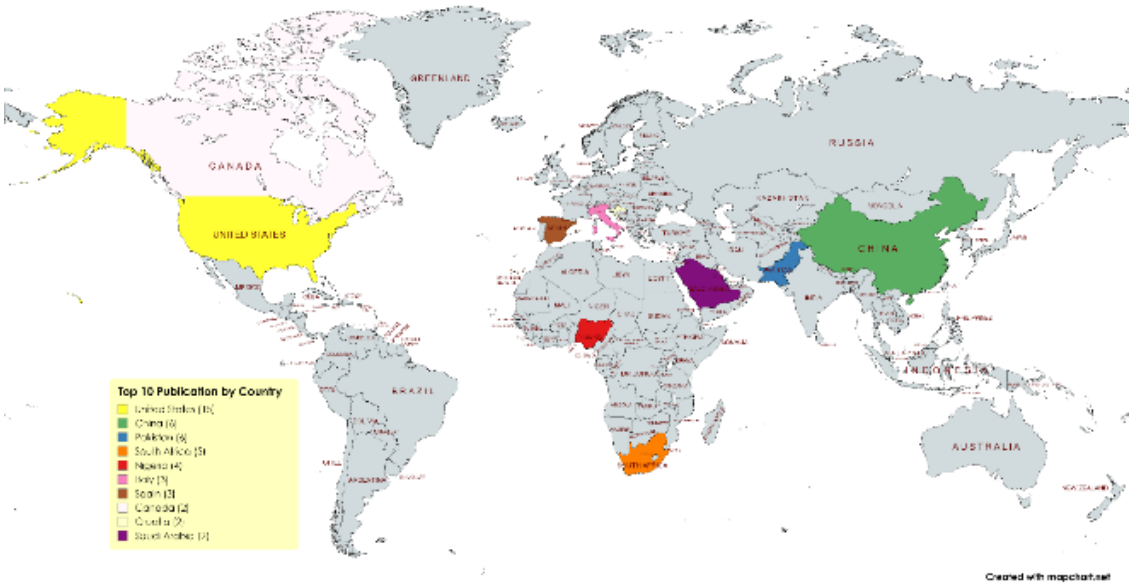

Figure 2. Countries with the Largest Contributions in the Field of Digital Library and Information Literacy from 2014 to 2023
Source: Author Data Processed, 2024

Figure 2 displays the distribution of global and regional publishing patterns from 2014 to 2023. The research contributions pertaining to the terms "Digital Library" and "Information Literacy" are made mainly by ten primary countries. These countries include the United States, China, Pakistan, South Africa, Nigeria, Italy, Spain, Canada, Croatia, and Saudi Arabia. The United States, with 15 publications, plays a significant role in advancing knowledge in the field of Digital Library and Information Literacy. This is due to the country's extensive network of higher education institutions and research institutions, which contributes to high attention and funding for research in this area. China and Pakistan each have six publications, indicating a strong focus on digitization and information literacy. This emphasis is driven by government initiatives and efforts to raise awareness. Subsequently, South Africa and Nigeria, with 5 and 4 articles, respectively, demonstrate substantial endeavors in Africa to tackle the digital divide.

In addition, Europe, Italy, and Spain each contributed three papers, emphasizing their significant contributions to the development of knowledge in this field. Canada, Croatia, and Saudi Arabia each contributed two research articles between 2014 and 2023. This analysis showcases the wide-ranging international focus on digital libraries and information literacy, highlighting the significance and relevance of these subjects in facilitating global access to information and digital literacy.

Author productivity in digital library and information literacy

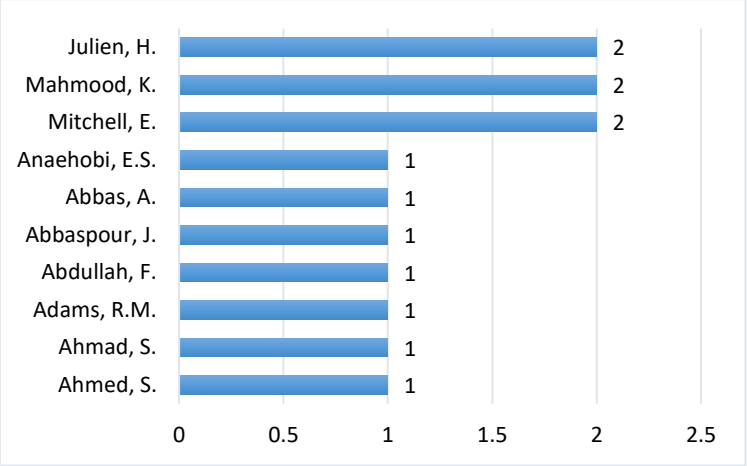

Figure 3. Most Contributing Authors in Digital Library and Information Literacy from 2014 to 2023
Source: Processed by Author, 2024

According to Figure 3, the writers who made the most significant contributions are Julien, H., Mahmood, K., and Mitchell, E., with each contributing two documents. This suggests that these three authors have a consistent and impressive level of enthusiasm and productivity in conducting research in this particular field. In addition, Ahmed, S., Ahmad, S., Adams, R.M., Abdullah, F., Abbaspour, J., Abbas, A., and Anaehobi, E.S. each contributed one document. These contributions showcase the extensive global interest and international engagement in studying Digital Libraries and Information Literacy, highlighting the topic's relevance and appeal to a diverse group of scholars worldwide. This exemplifies the worldwide collaboration and combined endeavors of the academic community to cultivate and promote understanding and application in this domain, which is crucial for fostering the growth of information technology and literacy in various settings.

Mapping of research focus areas in digital library and information literacy

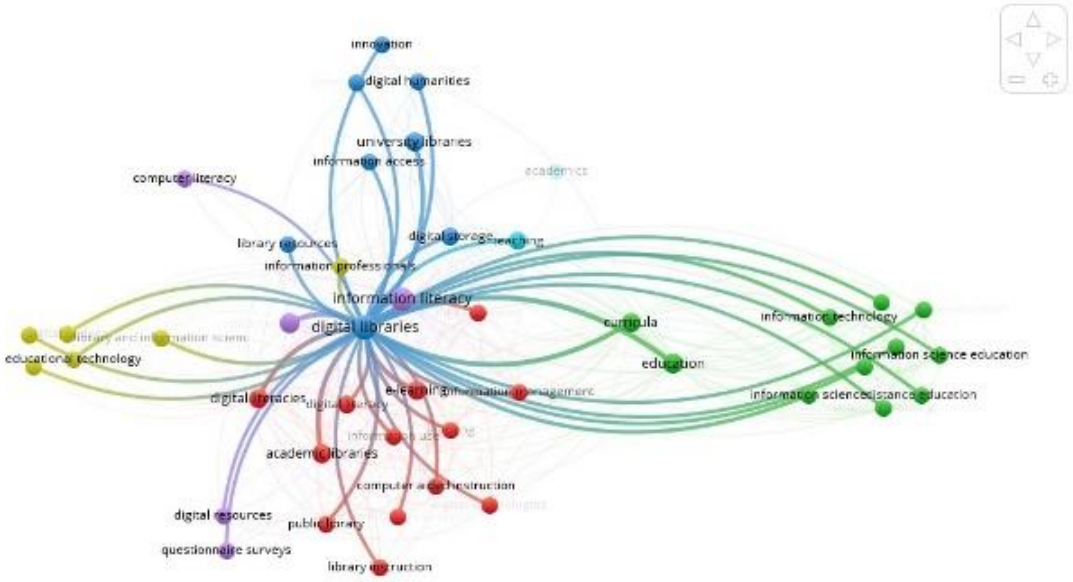

Figure 4. Network Mapping Based on Keywords
Source: Processed by Author, 2024

The Vosviewer Network Visualization program in Figure 4 displays the results, indicating the presence of 6 clusters, including a total of 45 themes associated with Digital Libraries and Information Literacy.

Table 2. Six Cluster Digital Libraries and Information Literacy

Cluster	Item Themes
Cluster 1	*Academic libraries, community organizations, computer-aided instruction, digital devices, digital literacies, digital literacy, digital technologies, e-learning, information management, information use, learning, library instruction, public libraries.*
Cluster 2	*Computer science education, curricula, distance education, education, information science, information science education, information system education and curriculum, information system education, information technology, software design, virtual computing.*
Cluster 3	*Digital humanities, digital libraries, digital storage, information access, innovation, library resources, library services, university libraries.*
Cluster 4	*Digital badges, educational technology, human resource management, information professionals, library and information science, and social networking (online).*
Cluster 5	*Computer literacy, digital resources, information literacy, information services, questionnaire surveys.*
Cluster 6	*Academics, teaching*

Source: Processed by Author, 2024

Portrait of the development of studies on digital library and information literacy

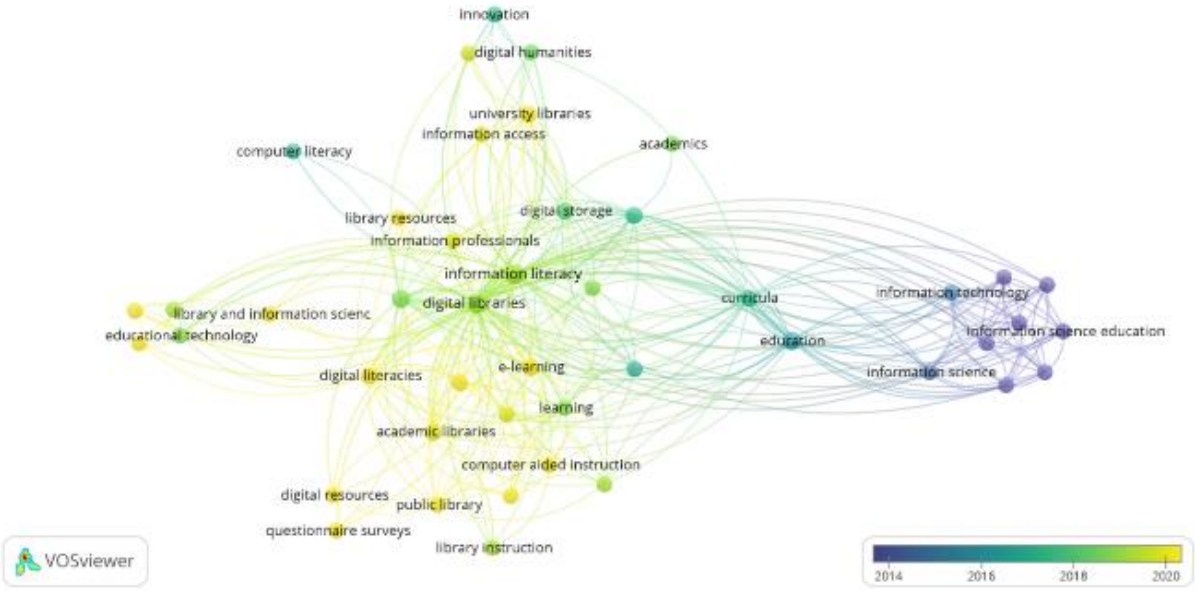

Figure 5. Portrait of the development of Digital Library and Information Literacy Studies from 2014 to 2023

Source: Processed by Author, 2024

The figure above displays the research trends in Digital Library and Information Literacy from 2014 to 2023. In 2014, research focused on several aspects of Digital Libraries and Information Literacy, including Information Technology, Information Science Education, and Information Science. From 2016 to 2018, the

researcher focused on curriculum development, education, computer literacy, innovation, digital humanities, learning, academics, digital storage, educational technology, information literacy, digital libraries, and educational technology. From 2020 to 2023, research on Digital Libraries and Information Literacy focused on emerging topics, namely Digital Literacies, Academic Libraries, Computer-Assisted Instruction, Digital Resources, Public Libraries, Questionnaire Surveys, E-learning, Library and Information Science, University Libraries, Information Access, and Library Resources.

The development of research publications on digital libraries and information literacy based on keywords

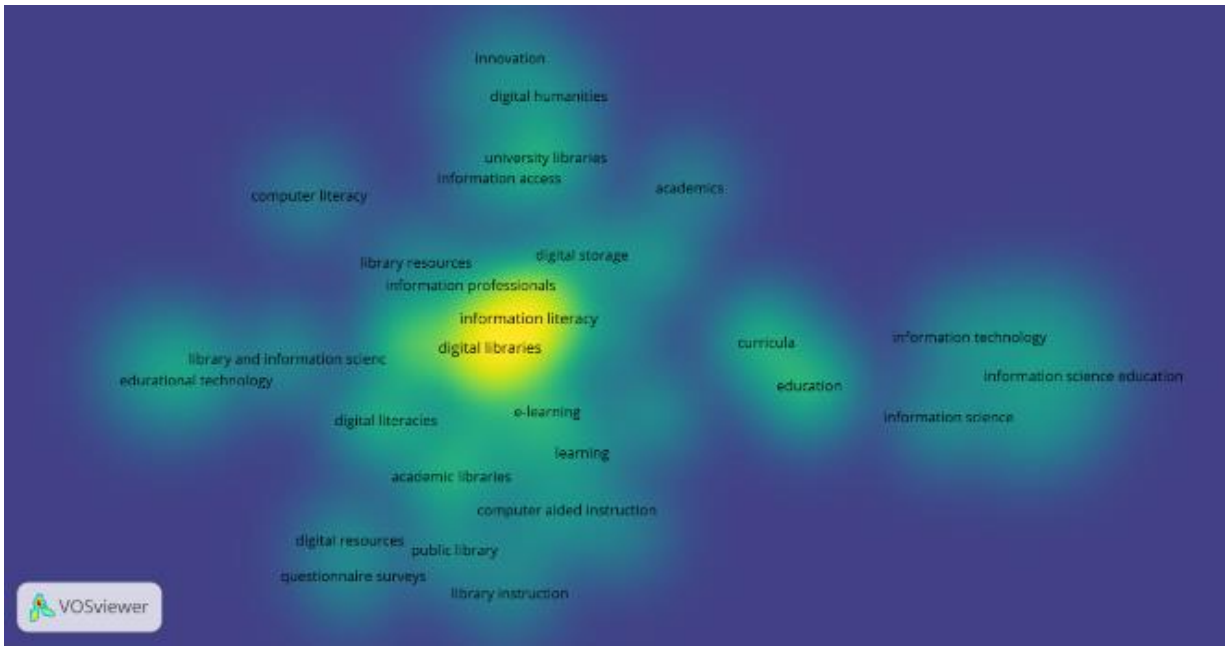

Figure 6. Digital Library and Information Literacy overlay visualization from 2014 to 2023
Source: Processed by Author, 2024

Figure 6 depicts the distribution of research subjects on Digital Library and Information Literacy, as defined by keywords published between 2014 and 2023 and indexed by Scopus. Vosviewer's density analysis might indicate the extent to which specific keywords have been addressed or neglected. Density is employed to locate and identify new and unique subjects for future investigation pertaining to digital libraries and information literacy. When employing density in VOSviewer, the color yellow represents the most frequently discussed issues. The higher the term density surrounded by yellow, the greater the number of studies using that perspective as the primary topic of discussion.

On the other hand, if the yellow hue is not highly concentrated on a keyword, it indicates that the keyword has not been extensively examined in the study. Thus, this keyword can serve as a novel subject for future research. Figure 6 demonstrates a strong correlation among the terms Information Literacy, Digital Library, Digital Literacy, E-learning, Academic Library, Curriculum, Education, University Library, Digital Storage, Information Professional, Computer-Assisted

Instruction, and Library Resources. This suggests that these terms are frequently interconnected or discussed collectively in the analyzed literature. Conversely, the lack of research or limited association with mainstream terms is evident in keywords such as Information Science Education, Information Science, Information Technology, Library and Information Science, Digital Resources, Public Library, Library Instruction, and Computer Literacy. More precisely, this indicates that the field in question has not been thoroughly investigated and holds promise for further research. However, these concepts have not been extensively studied, indicating significant opportunities to generate new knowledge and expand research in this field. This will lead to a more comprehensive and significant addition to our understanding of information literacy and digital libraries.

In recent years, research on Digital Libraries and Information Literacy has become increasingly relevant and significant due to the rapid advancement of information technology. From 2014 to 2023, there was a significant increase in the number of articles listed in Scopus focusing on digital libraries and information literacy. This signified the growing scholarly interest and focus on these two disciplines that were becoming more and more pertinent in the current era of digital technology. Multiple crucial elements contributed to this determination. As a result of the COVID-19 pandemic, numerous libraries and educational institutions have been compelled to adopt digital platforms, leading to an escalated demand for research and development in this field.

Furthermore, progress in information technology has created new prospects for innovation in information management and education delivery. Consequently, an increasing number of researchers are investigating the optimal integration and utilization of digital libraries and information literacy. Moreover, there is a worldwide effort to enhance the level of digital literacy among individuals as a component of education and skills advancement programs, which is driving research in this field. This trend not only signifies a reaction to alterations brought about by the pandemic scenario but also indicates a forthcoming trajectory where digital libraries and information literacy will assume a more significant role in education and information management. Hence, this study elucidated that there was a growing academic inclination and focus on this subject, driven by the need for digital solutions for libraries and education, particularly in a worldwide setting that was progressively reliant on information technology.

The study revealed that various countries have made substantial contributions to the development of Digital Libraries and Information Literacy. The United States, as the country with the highest number of publications, demonstrates significant commitment and abundant resources in this field, augmented by prestigious universities, state-of-the-art digital libraries, and proactive efforts promoting information literacy. This is corroborated by Frandsen et al.'s research (Frandsen et al., 2017b), "Library training for enhancing electronic resource utilization: A case study on evaluating information literacy," which elucidates the global predicament faced by libraries in terms of limited utilization of subscription-based services, owing to the preference of many users for Google.

Consequently, the potential of library resources is not fully utilized. Hence, it is imperative to take into account the availability of training sessions in conjunction with the staff's expertise to facilitate the continuous development of library staff abilities.

Furthermore, the data indicates that Julien, H., one of the authors who contributed to the research publication on Digital Library and Information Literacy, consistently demonstrates competence and active engagement in the field of Digital Library and Information Literacy, which demonstrates a solid commitment to the topic. His works illustrate the significance and necessity of thorough study and sustainability in comprehending and creating efficient approaches to enhance information literacy and maximize the utilization of digital libraries. In one of his papers released in 2022, entitled "Community-led digital literacy training: Toward a conceptual framework," he argues that enhancing digital literacy in the community requires a comprehensive and collaborative approach. Effectively organizing and training instructors is crucial to ensure they possess the requisite expertise and knowledge. The study also emphasizes the necessity of securing long-term financial support, engaging underrepresented community groups, providing convenient training schedules for end-users, enhancing marketing training, and exchanging and implementing optimal strategies. Each of these components is crucial to developing efficient and comprehensive digital literacy training initiatives that empower individuals to optimize their utilization of digital technologies (Julien et al., 2022).

Moreover, the most frequently used and relevant terms for research on digital libraries and literacy included information services, digital literacy, academic libraries, library services, university libraries, curriculum, and education. These notions served as the fundamental framework for studying Digital Libraries and Information Literacy. The focus on information services and digital literacy highlighted the development and execution of these services to assist users in accessing and utilizing digital resources effectively. University and academic libraries acknowledge the significance of academic libraries in facilitating access to digital resources and promoting information literacy in higher education environments. Library services encompass the various services provided by libraries to assist users in meeting their information requirements. Conversely, the connection between information literacy and the educational curriculum is clearly evident in the relationship between curriculum and education. This suggests that investigations into digital libraries and information literacy encompass not only technology and resources but also the integration of educational services and literacy skills to assist users in the digital era.

Moreover, keywords such as Information Science Education, Information Science, Information Technology, Library and Information Science, Digital Resources, Public Library, Library Instruction, and Computer Literacy presented promising prospects for future research discussions. This implied that research conducted on these subjects was still limited or less closely related to the main idea. Therefore, there was potential for further investigations. Hence, conducting further investigations in these domains could significantly enhance the existing knowledge on Digital Libraries

and Information Literacy. This could provide new insights that will bolster and broaden our comprehension of the utilization of information technology in libraries and educational environments. A thorough investigation of these keywords could assist in identifying new challenges and opportunities, as well as formulate optimal strategies that could be implemented in many scenarios to enhance information literacy and the effective utilization of digital resources.

This study demonstrated the significant correlation between digital libraries and information literacy, highlighting the importance of both in the contemporary digital age. The correlation between Digital Libraries and Information Literacy was substantial, as digital libraries offered a platform that enabled users to access diverse information resources swiftly and effortlessly. However, to utilize these resources effectively, users must also possess information literacy skills. Users with strong information literacy skills may explore digital libraries effectively, locate pertinent information, and use it appropriately in their academic or professional settings. This study highlighted the significance of Digital Libraries and Information Literacy in facilitating learning and research in the digital age. By leveraging robust digital libraries and possessing strong information literacy skills, individuals may effectively access, assess, and apply materials, thereby enhancing their overall knowledge and contributing to its expansion. Hence, to ensure that the broader community reaped the maximum benefit from digital technology, it was crucial to strive for progress in these two domains consistently.

CONCLUSION

The study's findings indicate a substantial growth in the number of Scopus-indexed publications between 2014 and 2023. This confirms the achievement of the research objective to identify the trends and map digital libraries and information literacy over the past decade. Researchers and academics are increasingly interested in and paying attention to the topic of digital libraries and information literacy. In the analysis, the United States emerged as the primary contributor, with 15 documents addressing various aspects of digital libraries and information literacy. Julien H. is identified as a consistent and significant contributor to this field. The visualization mapping reveals that digital library and information literacy research primarily focuses on topics such as information services, digital literacy, academic libraries, library services, university libraries, curricula, and education. This confirms the significance of incorporating information technology to facilitate learning and research. Furthermore, the results offer a clear overview of how these themes have evolved and interacted, providing valuable insights for future studies.

Nevertheless, numerous subjects remain available for further investigation, including information science, information technology, library and information science, digital resources, public libraries, and academic library services. This study trend highlights the significance of digital libraries and information literacy in facilitating the learning and research process in the digital age. A robust digital repository, coupled with proficient information literacy abilities, can enhance users' ability to access, assess, and apply information quickly, hence fostering comprehensive and profound knowledge

acquisition. A key limitation of this study lies in the exclusive use of data from the Scopus database, which may not capture the full range of global research output. Future studies should consider integrating other databases and approaches to generate a more comprehensive research map.

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