INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH
2026, Vol. 7, No. 4, 1604 – 1613
http://dx.doi.org/10.11594/ijmaber.07.04.11

Research Article

A Bibliometric Analysis of Research Trends in Guidance Office Support Systems

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Article history:
Submission 26 January 2026
Revised 30 March 2026
Accepted 23 April 2026

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ABSTRACT

This study presents a bibliometric analysis of the research on guidance office support systems to better understand the emerging trends in this field. At this point, a more developed technology, guidance office support systems show importance in addressing the needs of students, even in terms of academic, personal, and well-being of students, making it a need to examine how research in this field is being discussed and evolves over time. With the use of the Scopus database, 293 documents were collected, but it decreased to a total of 288 documents after they were cleaned by removing duplicates and Using TRIM() Function to unwanted spaces in Excel. The cleaned dataset with 288 documents was analyzed using the Bibliometrix package in R Studio. The Biblioshiny interface was used to generate the bibliometric indicators and visualizations, which include keyword networks, institutional productivity charts, and citation analysis, which helps to identify the major research themes and publications within the dataset. For the analysis of the dataset, Most Relevant Affiliations, Most Global Cited Documents, Word Cloud, and Density Co-occurrence Network are used to understand how the field has evolved over time. Results show that research interest in digital support for guidance offices is steadily increasing, with leading institutions consistently producing studies related to guidance office support systems. On top of that, some of the works also show how technologies like artificial intelligence, information systems, and decision-support tools are being integrated to improve these services, but they are less studied, which is why there is a need for the development of guidance office support systems. Also, many existing studies remain broad and do not specifically address guidance office support systems, which reveal gaps in research coverage and real-world implementation.

Keywords: *Counseling and Academic Advising, Guidance Office Support Systems, Mental Health Support, Student Support Services*

How to cite:
Igaya, K. B. S., Tiu, J. V. F., Villaster, M. I. J., & Solis, J. P. (2026). A Bibliometric Analysis of Research Trends in Guidance Office Support Systems. *International Journal of Multidisciplinary: Applied Business and Education Research*. *7*(4), 1604 – 1613. doi: 10.11594/ijmaber.07.04.11

Background

Schools and universities are now actively seeking new ways to guide and support students, especially now that both academic and emotional concerns have become an issue. Traditional guidance and counselling services often treat students in the same way, regardless of their individual differences in their abilities and personal needs. According to Elumalai (2023), treating each student equally, whether they have typical abilities or special needs, highlights the role of personalized guidance and counseling that will support their academic and emotional development as well. Because of that, the integration of a guidance office support system can address the needs of students mainly in their academic, personal, and emotional support (Labayan et al., 2022). The reason for this is that there is a growing recognition that integrates the specialized guidance-office support system, which can more effectively address the needs of the students, whether it is academic, personal, or emotional needs, holistically. In the Philippines, for instance, there is a system that has been proposed to optimize counselling, record-keeping, and service delivery in the school guidance office. (Estabillo & Beltrán, 2025).

In the last few years, the COVID-19 pandemic has heightened the mental health issues among students, and thus, the psychological support services have become a major concern in the educational sector. Research has indicated a high level of anxiety, stress, and emotional distress among students due to the disruption in their regular routines and the shift from traditional to online learning environments. In the Philippines, research on the psychosocial impacts of the pandemic has indicated a high level of stress, anxiety, and depression among people in the Philippines, thus the need to improve mental health and counseling services (Tee et al., 2020). Other studies that specifically looked at Filipino students have shown that the extended remote learning process and quarantine situation have resulted in various forms of psychological distress for the students as they tried to sustain their motivation for learning (Mendoza, 2021; Rosales, 2023). All of these developments have resulted in a growing need for counseling in higher learning institutions. At the same time, there has been a growing need to explore technology-based solutions for counseling in higher learning institutions. In this regard, technology-based guidance systems have become an important research focus.

However, there are still schools locally and internationally where guidance and counselling remain as a 'missing component' of the educational support structure that limits students' ability and develops their full potential, which mainly supports that there is a big need for systems that will support the guidance and counselling services (Singh, 2022). Some issues are found in the delivery of guidance services globally. In the Philippine context, Luciano et al. (2024) stated that in General Santos City, their process in counseling is still manual. Plus, there is an absence of digital tools that will support the students and address their needs. Also, in India, it is found that there are several challenges faced where different student needs are still not addressed, such as pointing gaps in accessibility, scalability, and individualized support (Singh, 2022). Another problem from the study of Kim et al. (2020) is that teachers' sectioning strategies are often influenced by behavior patterns, which form the students' social interactions and peer experiences across the school year, demonstrating that behavior-informed sectioning affects classroom dynamics and student well-being. These findings indicate that behavior-based grouping or sectioning should be guided by accurate behavioral records and counseling, whereas it is something that digital guidance-office systems can support.

The transition from the guidance counselling process to enhanced guidance-office support systems emerges as a timely and necessary shift. Before, traditional approaches like paper-based records, face-to-face sessions scheduled by hand, and counsellors were doing multiple tasks and loads. Now, a study of Lee et al. (2019) described a system where students could view their profile, schedule counselling appointments, and request services digitally, which it indicates the early form of guidance service system adoption.

Such support systems typically include some functions like student registration to the

system, creation and updating of student profiles, scheduling of counselling or advisory sessions, tracking of interventions, and generating analytical reports for guidance staff. For example, a study of Alegado et al. (2021), where they state that a record-management system found strong agreement among users where the system collects, organizes, and categorizes student records, facilitates retrieval of information, and improves efficiency, usability, and security of guidance office operations. Through these functions, guidance-office support systems can help move from traditional counselling toward proactive and data-driven guidance practices where student needs are identified and addressed over time.

In the context of this bibliometric analysis, it is crucial to map how research in this field has evolved from focusing primarily on traditional guidance and counselling roles toward the adoption, usability, and impact of digital support systems in guidance offices.

Materials and Methods

Data Analysis

This bibliometric paper used different tools in analyzing the data gathered from Scopus. It is processed using R as a language, RTools for building and installing the Bibliometrix package inside RStudio. After that, Biblioshiny is launched, and the dataset is uploaded for analysis, and then it creates the visualization of plots.

Data Source and Search

Research papers, journal articles, and reviews used in this analysis were retrieved from the Scopus database—a reliable, peer-reviewed source that aggregates high-quality publications from authors worldwide. To ensure replicability, the exact Boolean search string used was:

> *TITLE-ABS-KEY: ("guidance system" OR "academic advising" OR "student counseling" OR "counseling system" OR "decision support system" OR "educational technology" OR "artificial intelligence" OR "machine learning" OR "information systems" OR "higher education" OR "academic performance" OR "student support system" OR "e-learning").*

Documents were restricted to English-language articles and reviews published from 1952 to 2024 to ensure complete yearly coverage for trend analysis. Data was retrieved from Scopus on November 07, 2025.

Data Extraction and Cleaning

Records were exported in Comma-Separated Value (CSV) format encoded in Unicode Transformation Format-8 (UTF-8) for compatibility with R Studio. The initial dataset comprised 293 documents. Data cleaning was performed in Microsoft Excel, which included removing duplicate records and applying the TRIM() function to eliminate unnecessary whitespace. Additionally, the author name entries in the Authors column were reviewed for formatting consistency—some rows began with initials or middle initials placed before the surname (e.g., C.S., Dela Cruz, Christian Santos), while others followed the standard Surname, First Name format. These inconsistencies were corrected so that all entries followed a uniform structure, ensuring accurate parsing during bibliometric analysis. After cleaning, the final dataset comprised 288 documents.

Data Analysis

Bibliometric analysis was conducted using the Bibliometrix package in R Studio (R language environment), accessed through the Biblioshiny graphical interface. Bibliometrix functions (e.g., biblioAnalysis, summary, conceptualStructure) were used to compute descriptive statistics, identify publication trends, and generate thematic and conceptual maps. Network files were exported to VOSviewer for co-authorship, citation, and keyword co-occurrence visualizations. The analytical outputs include: Most Relevant Affiliations, Most Global Cited Documents, Word Cloud, Density Co-occurrence Network, and a Thematic Map.

Result and Discussion

With the growing interest in academics, specifically in guidance office support systems and student support services, this study used bibliometric analysis to examine and map the current state of research. The following are the results of this study:

Research output in the field of guidance office support systems has shown steady growth over the analyzed period. The overall growth rate indicates moderate, but shows consistent growth, with notable acceleration in years as institutions increasingly recognize the limitations of traditional, one-size-fits-all counselling approaches. Publication activity has intensified, particularly in the last decade, reflecting heightened scholarly interest in the digital transformation of guidance services. This upward trend aligns with previous findings indicating that student support systems have become more central to educational research as schools and universities seek to address both academic and emotional concerns more effectively (Elumalai, 2023; Labayan et al., 2022). The rise can be attributed to several converging factors. First, there is growing recognition that traditional or manual-based counselling processes are insufficient to meet diverse student needs, particularly in terms of accessibility, scalability, and individualized support of students (Singh, 2022; Luciano et al., 2024). The second factor is the COVID-19 pandemic, the COVID – 19 accelerated the adoption of usage of technology in educational settings, which prompt the institution to explore technology. Third, are the emerging technologies such as artificial intelligence, information systems, and decision – support tool which demonstrate potential to transform guidance offices from reactive counseling centers into proactive, data-driven student support areas. The shift reflects a broader movement in education toward personalized, evidence-based interventions that can identify and address student needs systematically over time (Estabillo & Beltrán, 2025; Alegado et al., 2021).

In relation to higher education institutions in the Philippines, the trends identified emphasize the importance of modernization in the guidance service delivery process, such as documentation, record-keeping, and the utilization of analytics tools in the guidance office. The majority of higher education institutions in the Philippines still employ traditional methods in the guidance service delivery process, which may be addressed with the integration of digital support systems to resolve issues concerning the academic performance of students and the challenges associated with the hybrid learning environment. The identified trends emphasize the need to bridge the gap between the conceptual discussion of digital student support and the development and implementation of integrated guidance office systems, which may be addressed by the higher education institutions in the Philippines with the aim of creating new research that focuses on the practical implementation of the system, resolving issues such as the student-counselor ratio, technological limitations, and issues concerning data privacy.

Based on the overall results of the bibliometric analysis, the study on guidance office support systems appears to be in the process of transition. While the subject matter has its basis in traditional counseling theory, it is now increasingly affected by the innovations in digital mental health care and the integration of information systems. For higher learning institutions in the Philippines, the challenge is not only to keep pace with the trends in international studies but to adapt the developments to local needs.

1. Overview of the Dataset

Table 1. Summary Statistics of the Bibliometric Dataset

Main information	
Description	**Results**
Timespan	1971:2025
Sources (Journals, Books, etc)	202
Documents	288
Annual Growth Rate %	0
Document Average Age	9.08
Average citations per doc	10.96

Main information	
Description	**Results**
References	0
Keywords Plus (ID)	1696
Author's Keywords (DE)	2356
AUTHORS	0
Authors	2116
Authors of single-authored docs	1
AUTHORS COLLABORATION	0
Single-authored docs	5
Co-Authors per Doc	10.6
International co-authorships %	11.81

2. Key Authors and Journals

Table 2. Most Productive Authors in Research Trends in Guidance Office Support Systems

Authors	Articles
LIU H	6
AL-NORY MT	2
BAZRAFSHAN MR	2
BELINO MC	2
CHEN S	2
CHILUIZA K	2
CHOI S	2
CIL I	2
DELAM H	2
DOĞAN NN	2

3. Most Relevant Affiliations & Most Global Cited Documents

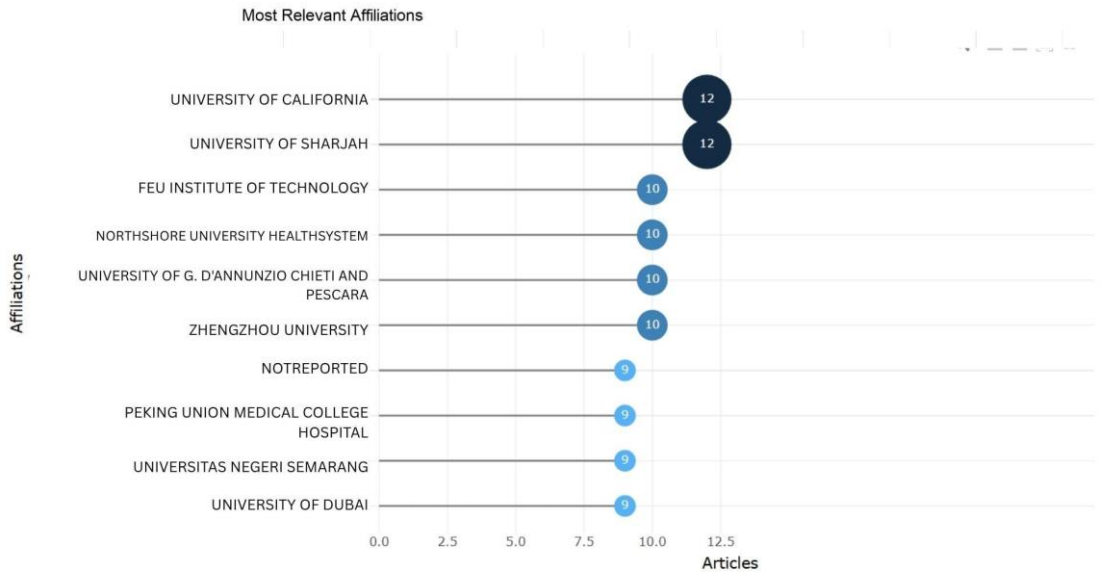

Figure 1. Most Relevant Affiliations in Research Trends in Guidance Office Support Systems

Figure 1 illustrates the institutions that have produced the most number of publications on support systems in the field of guidance offices, which includes counseling, academic advising, and the use of artificial intelligence in education, among others. The University of California in the United States and the University of Sharjah in the United Arab Emirates have significantly contributed to this research area with 12 publications each, signifying their interest in this research area. Other institutions that have made contributions to this research area include FEU Institute of Technology in the Philippines, Northshore University HealthSystem, and University of G. d'Annunzio Chieti and Pescara with 10 publications each.

This can be seen in the distribution of publications based on institutional affiliation, which indicates that the research on guidance office support systems is being explored in various international academic environments. It is also evident that there is no dominance of research from a single region. It can also be noted that there is an interdisciplinary trend in the research on guidance office support systems, where there is integration with health sciences and technology-based fields, such as artificial intelligence. This indicates the global importance of guidance office support systems, where there are prospects for further research from institutions in the Philippines, especially on developing technologies in student guidance.

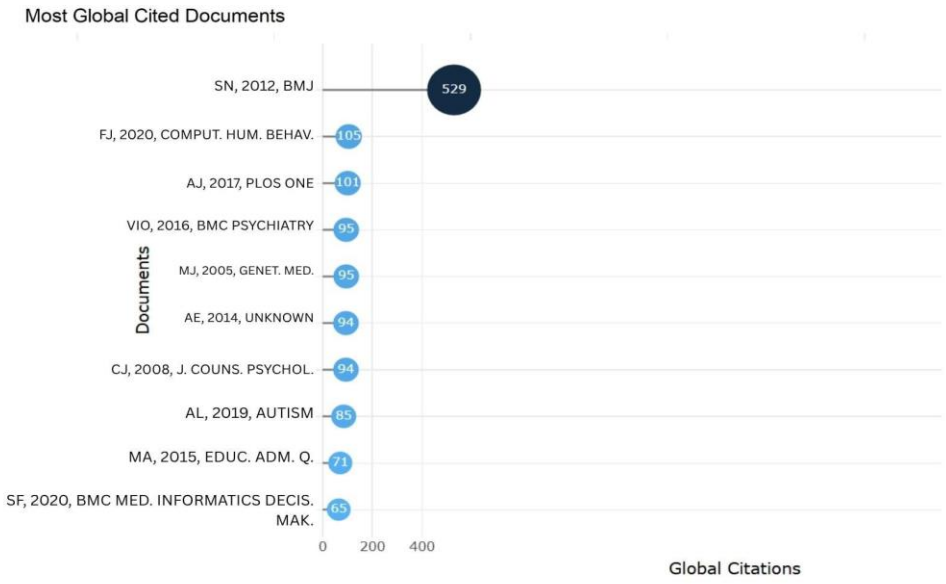

Figure 2. Most Global Cited Document in Research Trends in Guidance Office Support Systems

The analysis of globally cited documents helps in identifying the publications that have had the most impact on research in the area of guidance office support systems. Figure 2 presents the top ten most globally cited documents in the dataset. It can be seen that the publication by Merry et al. (2012) in BMJ is the most cited document with 529 citations, signifying its global impact. Other most cited publications include Gutierrez et al. (2020) in Computers in Human Behavior and Martos et al. (2017) in PLOS ONE, with more than 100 citations each.

The most cited publications deal with themes important in the area of support systems, including digital mental health interventions, learning analytics for academic advising, and counseling support services for diverse student populations. These publications reflect the major themes of mental health and technology-based support systems, which are at the core of research in guidance office support systems.

4. Density Co-occurrence and word map.

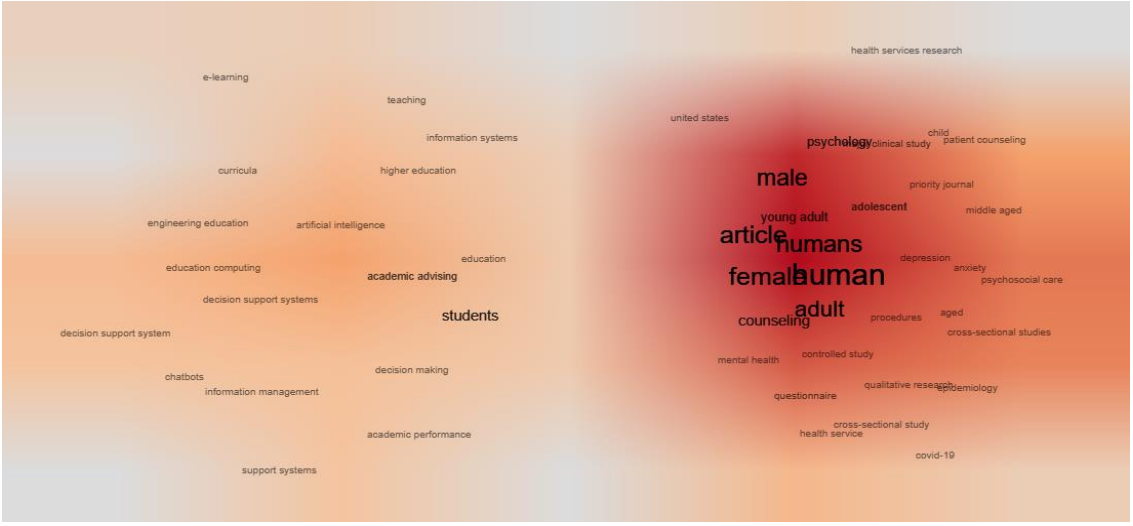

Figure 3: Co- occurrence Network

Figure 3 shows the Co - occurrence Network where The network includes two thematic clusters, thus, representing the visible orientation of the field. The former cluster- in the high-density (red) sector- deals with counseling of the human kind, and the lexical items containing humans, male, female, adult, counseling, psychology are represented in the salient co-occurrence. The clinical psychology origins of the discipline, as demonstrated by the inclusion of symbols like mental health, depression, anxiety, and psychosocial care in this cluster, are supported by the fact that student mental health is the main focus of the extant literature. The second cluster, which is placed in the lighter (emerging) sector represents technology-based academic support whereby lexemes like student, academic advising, education, artificial intelligence, decision support systems, e-learning and information systems co-occur. The proximity of the terms mental health and digital support in this new cluster is an indicator of the rise of tele-counseling and hybrid guidance models, which approach to the delivery of psychological services is more extended in comparison with face-to-face interaction: the digital platform doubles the prior experience of technological-mediated student-counselor interaction.

Altogether, the co-occurrence network keyword proves that the guidance-office support systems is shifting towards an integrated paradigm of counseling that combines the principles of psychological knowledge with technological tools. The shift is reflected in wider trends in digital mental health care and educational technology.

Figure 4: Word Cloud

The word cloud emphasizes the key concepts involved in the research on guidance office support systems. The key terms such as "students," "counseling," "mental health," and "academic advising" are prominent in the word cloud and suggest that the primary focus of the support systems is still on students' well-being and academic support. However, the presence of terms such as "artificial intelligence," "decision support systems," and "information systems" suggests that there is a growing interest in incorporating technology into counseling support systems. The presence of psychological and technological key terms together suggests that the support systems are developing into a multidisciplinary approach that combines education, psychology, and information technology.

5. Thematic Map

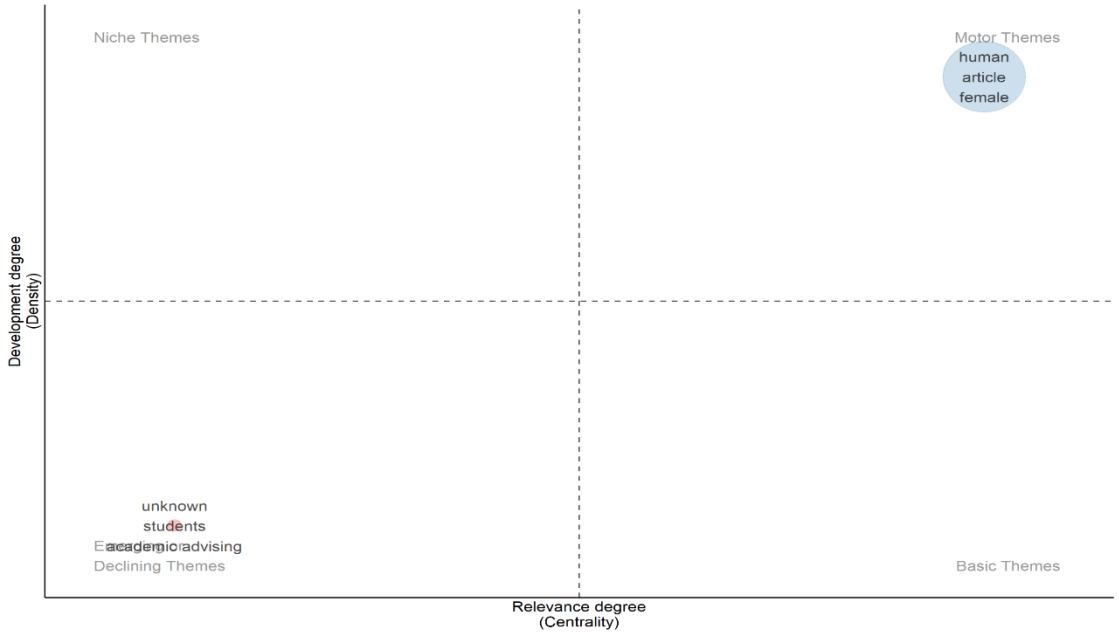

Figure 5: Thematic map

The thematic map splits the research themes in two main dimensions: centrality (relevance) and density (development). It is presented in Figure 5 that there are only two quadrants with distinguishable themes. In the Motor Themes category, the set of the words, including the words, that contain the symbols, such like: "human", "article", and "female", are the well-developed dominating core of the field; these themes are highly central as well as internally developed, and thus, the strong base of the dataset, which is based on the clinical and health-oriented literature. Particularly, the words "student", "academic advising" and "unknown" are found in the Emerging or Declining Themes quadrant indicating that, despite their central role in the system of guidance-office support, student-centered academic advising is underdeveloped and marginal to the whole scholarly corpus. The lack of themes in the Niche and Basic quadrants is also another evidence that the field is still on a very early subject-of-consolidation stage, and that there is a major discrepancy between the established clinical tradition and the new scholarly-support focus introduced by guidance-office systems.

Conclusion

The results of this bibliometric analysis clearly demonstrate that the body of knowledge on guidance office support systems is gradually shifting from traditional counseling approaches toward integrating technology-based systems. Though most of the existing studies are still centered on humanistic themes

such as students, counseling, and mental health, there is a growing body of knowledge on exploring technology-based systems such as artificial intelligence, decision support systems, and information management systems. These observations clearly demonstrate that guidance service systems are gradually shifting toward integrating technology-based systems for improving the delivery of support services to students.

However, it is also evident from this bibliometric analysis that most of the existing studies are still broad and generic in terms of counseling approaches and technology-based systems in education, without specifically addressing comprehensive guidance office support systems as a specific body of knowledge. Though technology-based systems are increasingly being discussed in existing studies, only a few studies are found to be reporting on the actual development and implementation of such systems. This observation clearly demonstrates that this is still in its primary stage of integration, where technology-based concepts are being explored but are yet to be applied in reality.

Such findings have significant implications for higher learning institutions, especially in the Philippines. This is because, as students continue to experience greater academic pressure and mental health concerns, especially in the new learning environment after the pandemic, the guidance offices in Philippine higher learning institutions can consider using more systematic and technologically assisted tools in dealing with students. Thus, the increasing interest in digital guidance technologies underscores the necessity for higher learning institutions to consider integrating digital guidance office support systems, which include counseling, academic, and monitoring services.

For future research, emphasis should be placed on the design, development, and evaluation of integrated guidance office support systems, which incorporate both academic advising and counseling functions in educational environments. Further research in underrepresented areas such as Africa, South America, and Australia could also help in providing a more comprehensive view of the application and usage of guidance technologies in various educational environments. It is also important to note that, since this study is based solely on Scopus publications, in the future, more comprehensive results could be obtained by using other databases such as Web of Science, ERIC, and Google Scholar. It is also important to strengthen the collaboration between researchers and educational environments, along with real-world system evaluation, in order to advance the development of more effective and student-centered guidance technologies.

Acknowledgement

The authors would like to express their appreciation to our professor in the Fundamentals of Enterprise Data Management System course for her guidance, support, and supervision throughout the development of this bibliometric review. Her expertise and encouragement were essential in completing this study.

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