Bibliometric Mapping of Academic Library Research: Trends and Influences in the Journal of Academic Librarianship

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ABSTRACT

Purpose Research. This study aims to analyze the trends and focus of academic library research themes from the Journal of Academic Librarianship. **Research Method**. This study uses bibliometric analysis to review and analyze research articles published in the Journal of Academic Librarianship. **Analysis Data.** Quantitative data analysis in this study involves a combination of descriptive statistics, citation analysis, and conceptual structure analysis. Bibliographic data of documents used in this study were processed using Biblioshiny software. **Results**. The analysis revealed several dominant themes. Inclusion and diversity, emphasizing the importance of creating an inclusive library environment and supporting cultural and social diversity. Professional development, focusing on professional development and library management to meet the demands of technology and improve services. Instructional Design and Library Instruction, highlighting instructional design and information literacy, including learning strategies and information skills assessment. Higher Education and Collaboration, describing the relationship between libraries and higher education institutions, with an emphasis on collaboration to support education and research. Digital libraries, open access, and scholarly communication demonstrate the importance of digital technology and open access in supporting research and scholarly communication. **Conclusions**. The study concludes that the academic library research landscape is dynamic and multifaceted, with significant emphasis on inclusion and diversity, professional development, instructional design, and collaboration. Furthermore, the exploration of the evolving role of academic libraries in supporting open access and scholarly communication is a promising avenue for further investigation.

Keywords: *Academic Libraries, Bibliometrics, Journal of Academic Librarianship*

A. INTRODUCTION

Academic libraries play a crucial role as a main pillar in the academic world, supporting various essential activities such as learning, research, and community service. With the rapid development of technology and significant changes in the way information is accessed, academic libraries must adapt quickly to maintain their relevance and meet the increasingly diverse needs of their users. Digital transformation and the adoption of new technologies have drastically changed the

landscape of library services, demanding innovation in collection management, information service delivery, and support for academic activities (Bergström, 2021; Wani & Londhe, 2023). In this digital era, academic libraries not only function as a place to store information but also as a mediator that facilitates the discovery and effective use of knowledge (Cox & Corrall, 2013; Gibson, 2022; Tzanova, 2020; Prasetyo, 2019). Adapting to these changes ensures that academic libraries remain relevant and effective in supporting the needs and development of the academic community. In the context of this study, a number of studies have been identified from various essential aspects related to academic libraries. Previous studies have presented an in-depth analysis of the evolution and challenges faced by academic libraries, including adaptation to new technologies and changing user needs (Hernon & Altman, 2019). Bergström, in his study, also highlighted the impact of digitalization on the structure and services of academic libraries, which require rapid adaptation to remain relevant (Bergström, 2021). Cooke and Silver (2020) evaluated the effectiveness of library services in the context of new information systems, showing that advanced technology can improve service quality.

Furthermore, Liu (2023) examined the performance of academic libraries in developing information resources and their impact on research, emphasizing the importance of strategic planning in information management. Meanwhile, research by Gibson (2022) identified current trends in academic library services, including innovations in artificial intelligence technology as the latest technology used in academic libraries. Observing and understanding trends in the scientific literature in academic library studies is essential to keep up with the dynamics and progress in this field. Along with the rapid evolution of technology and changing user needs, there needs to be a continuous review of current literature to identify developments in this field. In this context, the Journal of Academic Librarianship is the primary source for the review. The Journal of Academic Librarianship is one of the scientific journals that specifically and consistently publishes publications with a focus on academic libraries. The reputation of this journal is reflected in its high indexation and ranking in the Scopus database. With a CiteScore of 5.3 and a ranking of 48 out of 280 journals in the subject of library and information science, the Journal of Academic Librarianship places itself in the top 17% of journals in this field. This shows the high impact and quality of the publications in the journal.

With a solid reputation and the use of bibliometric analysis methods, this study seeks to provide a more comprehensive understanding of the contribution of the Journal of Academic Librarianship to the development of academic library studies. As one of the leading journals in the field of library and information science, the Journal of Academic Librarianship produces various scientific publications that reflect the latest trends and developments in the field of academic libraries. Recent articles show an increasing focus on technological innovations, such as the implementation of cloud-based collection management systems (Tella, 2020) and the application of Artificial Intelligence (AI) in university libraries (Asim et al., 2023). This analysis not only enriches knowledge about the dynamics of research in this field but also helps in identifying trends and potential areas for further research. By using bibliographic data from the Journal of Academic Librarianship, this analysis can provide in-depth insights into research developments, thematic

focuses, and relationships between various documents in the journal. As far as the author has found, recent studies that examine the development of scientific literature related to academic libraries are still very limited. This is a gap and opportunity for novelty in this study, which focuses on bibliometric studies from top journals that specifically publish scientific publications related to academic libraries. This study attempts to fill this gap by providing comprehensive data on research trends and the impact generated by publications in the Journal of Academic Librarianship. The main focus of this study is descriptive statistical analysis, citation analysis, and conceptual structure analysis. Descriptive statistics are used to record and describe the basic features of the knowledge base. Citation analysis focuses on assessing the frequency and pattern of citations between existing documents, which allows the identification of articles and authors that have significant influence.

Meanwhile, conceptual structure analysis is useful for studying the relationship between various articles based on the references they use so that they can reveal interrelated research themes or topics. This study is critical because it provides a deeper understanding of the dynamics of research in the field of academic libraries, especially in the context of publications in the Journal of Academic Librarianship. With this analysis, it is expected to provide useful information for researchers, library practitioners, and policymakers in formulating more effective library development strategies. The implications of this study include increasing understanding of the contribution of this journal to the development of academic library science, as well as providing data that can be used for strategic planning and performance evaluation in the context of academic library services. The results of this study are expected to make a significant contribution to the development of better academic library policies and practices.

B. METHODS

Bibliometric methods are used in this study. Bibliometrics, in practice, uses quantitative techniques to analyze and evaluate academic literature. Through this method, researchers can map and measure publication productivity, research trends, and relationships between documents in a discipline (Börner, 2019; Ellegaard, 2018). The primary data source in this study is the Scopus database, with a particular focus on the Journal of Academic Librarianship. This journal, which began indexing in 1988, has published 2,500 documents by the end of 2023. This journal has a CiteScore of 5.3, placing it 48th out of 280 journals in the subject of library and information science, or around the top 17% (Scopus, 2024). This figure shows the high impact and relevance of this journal in its field, making it an important data source for bibliometric analysis. In this study, 2,500 documents from the Journal of Academic Librarianship were analyzed, covering the publication period from 1988 to 2023. The year 2024 was not included in this analysis because data for that year is still in the process of being collected. The composition of document types from the Journal of Academic Librarianship shows significant variation. Most of the documents analyzed are articles, covering 88.4% of the total

publications. Editorials follow with a proportion of 4.4%, "notes" account for 3.8%, and conference papers and reviews, each at 0.9%. Erratums, which correct errors in previous publications, account for 0.8%, and letters account for 0.7%. Short surveys and retracted documents each have small proportions, namely 0.08% and 0.04%, respectively.

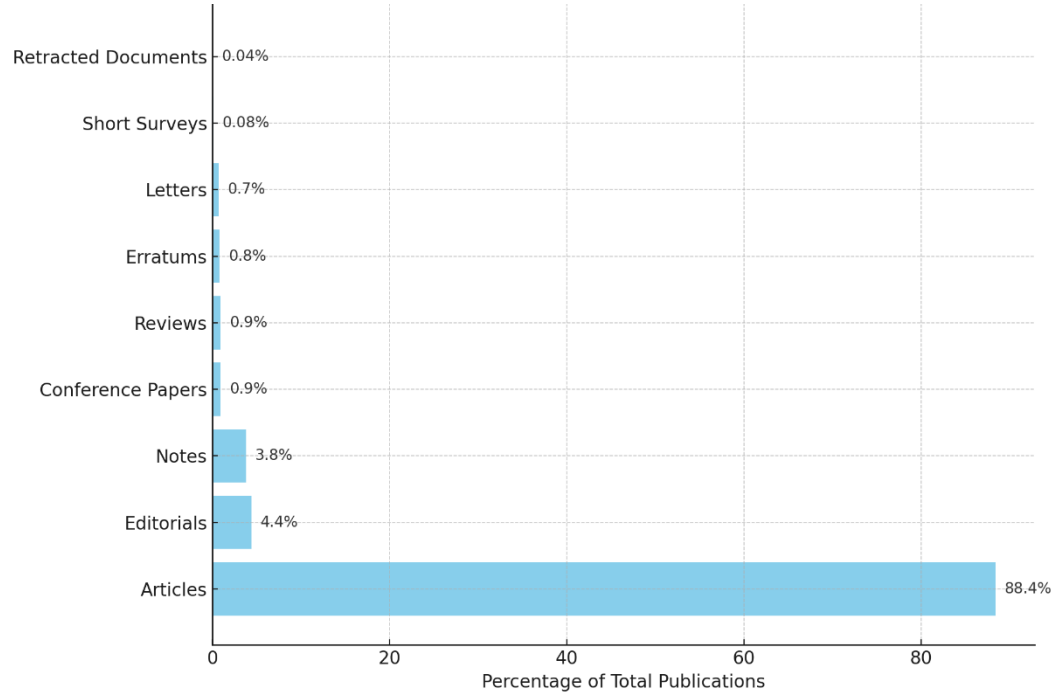

Figure 1. Proportion of Document Types Analyzed

This variation in document types reflects the diversity of document types in the journal. It provides an overview of the dominant types of content and the variety of information communicated in this study.

The bibliographic data of the documents used in this study were processed using the R application, specifically the Biblioshiny software. R is a programming language widely used in statistical analysis and data processing, while Biblioshiny is a web interface for bibliometric analysis built on R (Aria & Cuccurullo, 2017). This application facilitates the processing and visualization of bibliometric data (Adeoye et al., 2023; Rullyana et al., 2024), allowing researchers to store data in CSV file format that includes metadata related to each article, such as author name, link, article title, source, references, keywords, abstract, and citation data. The main advantage of using R and Biblioshiny is its ability to handle large and complex data volumes, as well as providing sophisticated analysis tools for bibliometric exploration.

Quantitative data analysis in this study involved a combination of descriptive statistics, citation analysis, and conceptual structure analysis. Descriptive statistics are used to document basic features of the knowledge base, including dataset size, publication growth over time, and geographic distribution of authors or institutions (Wang et al., 2022). Citation analysis serves to evaluate the frequency

and pattern of citations between documents, which helps in identifying articles and authors that have significant influence in the research field (Moed, 2021). Meanwhile, conceptual structure analysis is used to understand the relationship between articles based on the same references, which helps in identifying interrelated themes or research subjects (Leydesdorff & Bornmann, 2018). The combination of these techniques can provide in-depth insights into the structure and development of literature in the field of academic libraries, as well as the contributions of various publications and authors in shaping research trends.

C. RESULT AND DISCUSSION

Result

Figure 1 presents data documents by year from the Journal of Academic Librarianship for the period 1988-2023. This graph illustrates the number of articles published each year. The number of publications fluctuates with several periods of increase and decrease.

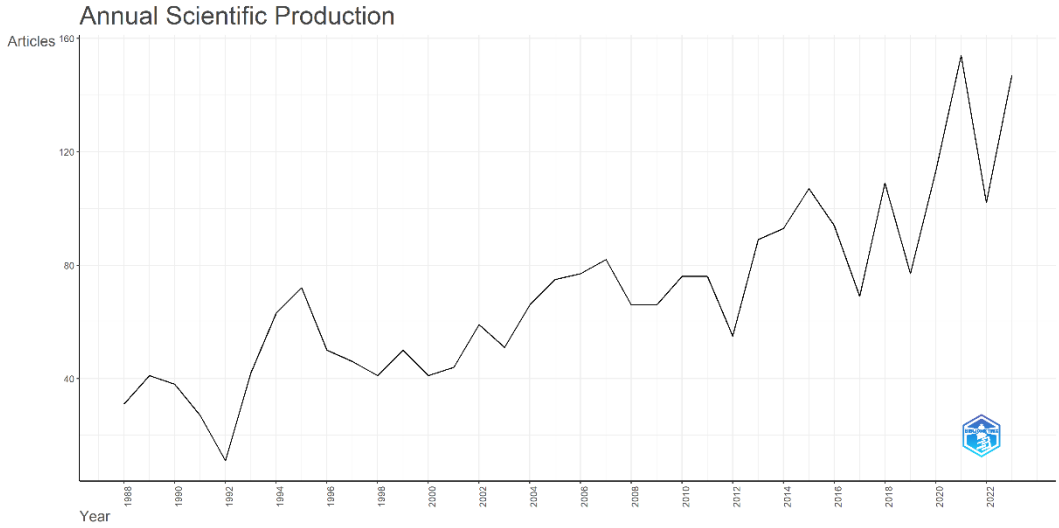

Figure 2. Dokumen by Year pada Jurnal Journal of Academic Librarianship periode 1988-2023

In the early period from 1988 to the late 1990s, the number of publications was relatively low with significant fluctuations, reaching its lowest point around 1991. During this decade, the number of articles published ranged from 30 to 60 articles per year. Entering the 2000s, there was a more consistent increase, although still accompanied by fluctuations. The number of publications began to show a more stable upward trend after 2010, with certain peaks indicating a spike in the number of articles published. The growth of publications has peaked in recent years, especially after 2020, when the number of articles published reached its highest number. The year 2023 marked one of the highest peaks, with more than 150 articles published in one year.

Furthermore, Figure 2 presents data on the ten most productive authors in the Journal of Academic Librarianship for the period 1988-2023. The author with

the highest number of publications is P. Hernon with 26 articles, followed by K. Coyle with 24 articles, and G. Little with 23 articles. Other authors on the list include R.E. Dugan and J.A. Shuler, each with 21 articles, and J. Buschman with 18 articles. D.F. Kohl and W. vanDuinkerken have 13 and 12 articles, respectively, while D.K.W. Chiu and W.C. Dougherty have contributed 11 articles each.

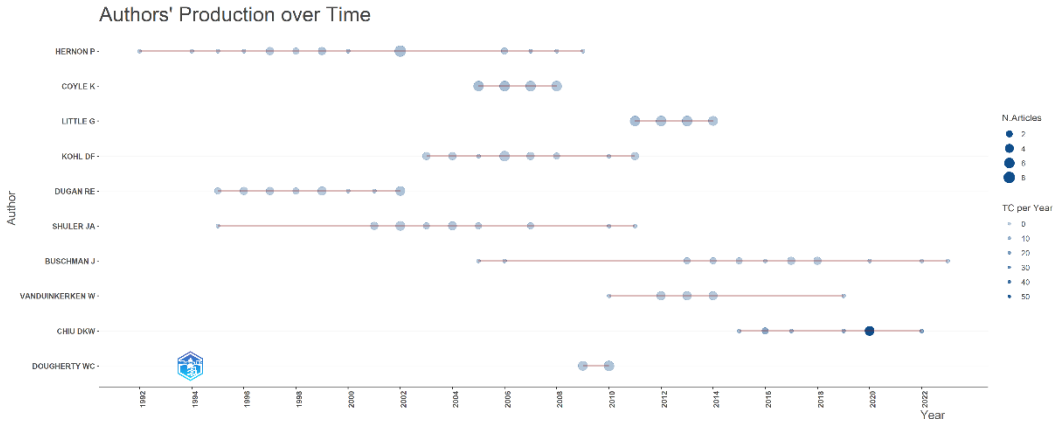

Figure 3. The 10 Most Active Authors in the Journal of Academic Librarianship for the period 1988-2023

Overall, the combined contribution of these ten most productive authors is 180 articles, which is equivalent to 7.2% of the total documents published during the period 1988-2023. This data shows that despite thousands of articles published, a small group of authors contribute significantly to the literature in the field of academic librarianship. The productivity of these authors reflects their commitment to research and development in this field. Table 2 presents data on the ten most influential authors in the Journal of Academic Librarianship for the period 1988-2023, based on the number of citations received. The author with the highest number of citations is J. Elmborg, whose article entitled "Critical Information Literacy: Implications for Instructional Practice" received 335 citations.

Table 1. The 10 Most Influential Authors in the Journal of Academic Librarianship for the Period 1988-2023

Authors	Paper	Year	Citation
Elmborg, J.	Critical information literacy: Implications for instructional practice	2006	335
Weiler, A.	Information-seeking behavior in Generation Y students: Motivation, critical thinking, and learning theory	2005	285
Grafstein, A.	A discipline-based approach to information literacy	2002	204
Nitecki, D.A.	Changing the concept and measure of service quality in academic libraries	1996	180
Battleson, B., Booth, A., Weintrop, J.	Usability testing of an academic library Web site: A case study	2001	170

Authors	Paper	Year	Citation
Chen, X., Sin, S.C.J., Theng, Y.-L., Lee, C.S.	Why Students Share Misinformation on Social Media: Motivation, Gender, and Study-level Differences	2015	169
Krstev, C., Trtovac, A.	Teaching multimedia documents to LIS students	2014	153
Choi, Y., Rasmussen, E.	What Qualifications and Skills are Important for Digital Librarian Positions in Academic Libraries? A Job Advertisement Analysis	2009	146
McGuinness, C.	What Faculty Think-Exploring the Barriers to Information Literacy Development in Undergraduate Education	2006	143
Beagle, D.	Conceptualizing an information commons	199	135

Other highly influential articles include A. Weiler's "Information-seeking Behaviour in Generation Y Students", with 285 citations, and A. Grafstein's "A Discipline-based Approach to Information Literacy", with 204 citations. The list also includes other important studies such as "Changing the concept and measurement of service quality in academic libraries" by D.A. Nitecki and "Usability testing of an academic library Web site" by B. Battleson, A. Booth and P. Weintrop. The most influential study with the highest citation score is an article by J. Elmborg titled "Critical information literacy: Implications for instructional practice". This article uses critical literacy theory to define information literacy. Elmborg (2006) argues that to be effective educators, librarians must focus less on the transfer of information and more on developing critical consciousness in students. Using concepts from literacy theory, the authors propose ways in which library practice might change if librarians redefine their role as literacy educators.

This article provides important insights into how a critical approach to information literacy can enhance the educational role of librarians and draws attention to the importance of developing critical thinking skills in students. The article is highly influential, as evidenced by the high number of citations it has received, indicating that the ideas and findings presented by Elmborg have had a significant impact on academic library research and practice.

Discsussion

Figure 3 presents the results of the Conceptual Structure Map analysis using the Multiple Correspondence Analysis (MCA) method. The MCA method provides a visual representation of the relationships between various research themes in the academic library field. The map identifies several major clusters that reflect key topics that have been the focus of research during the decade 1988-2023. The analysis shows how these themes are interrelated and helps in understanding the conceptual structure of academic library research.

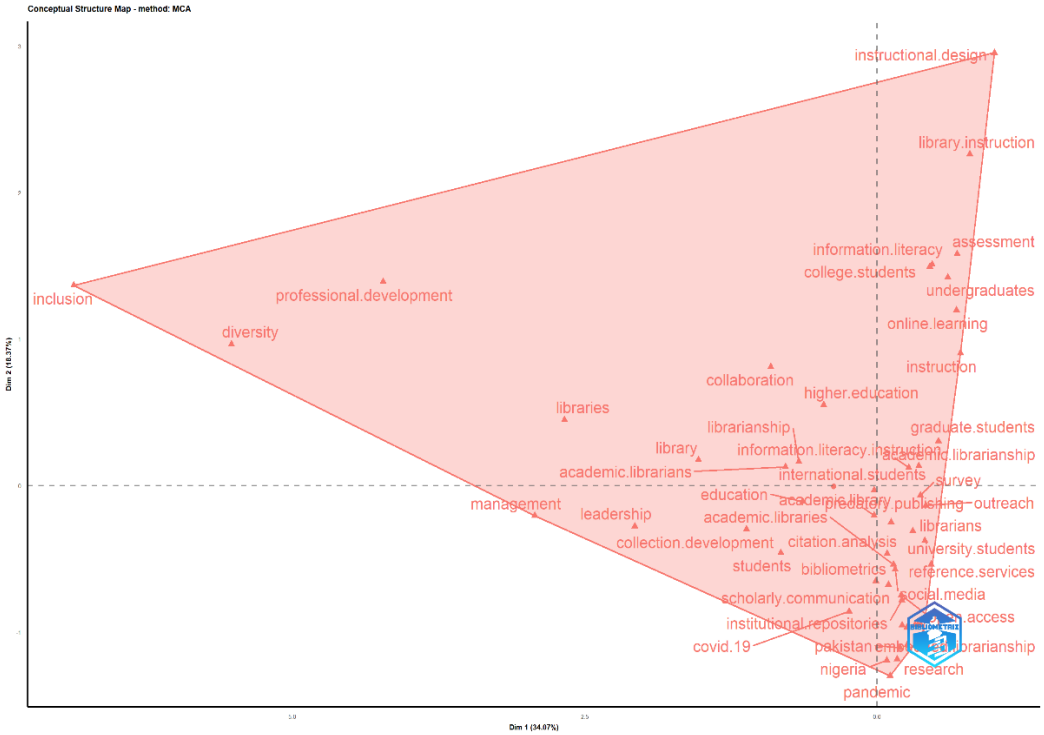

Figure 4. Conceptual Structure Map using the Multiple Correspondence Analysis (MCA) method

Cluster 1: Inclusion and Diversity

The first cluster covers inclusion and diversity, prominently featured on the upper left side of the map. Academic library studies have focused on research highlighting the importance of creating inclusive and diversity-supportive library environments. As the library user population increases in diversity, efforts to build inclusive spaces are crucial. This involves implementing policies and practices that support fair and equal access for all users and developing programs that address the needs of diverse user groups.

Inclusion and diversity are not just about providing physical access but also include how library services, collections, and programs are designed to meet the needs of diverse groups (Carroll et al., 2021; Fife et al., 2021). Several previous studies have explored the importance of racial and cultural awareness in academic library practice (Hamer, 2021). Carroll and Mallon have also highlighted the importance of inclusive library strategies in academic environments (Carroll & Mallon, 2021).

Cluster 2: Professional Development

Located in the left-center of the map, this cluster focuses on professional development and library management. "Professional development" includes ongoing training and upgrading of librarians' skills to meet the demands of technology and evolving user needs. "Management" refers to effective library management practices to ensure efficient operations and quality services. Previous research has shown the importance of ongoing training and professional development in meeting challenges (Buchanan, 2005). Furthermore, the emphasis

on the importance of professional development is also supported by research showing increased effectiveness of library services through ongoing training (Namaganda, 2020).

Cluster 3: Instructional Design and Library Instruction

This cluster in the upper right corner of the map focuses on instructional design and information literacy. "Instructional design" and "information literacy" are two key keywords that reflect efforts to develop effective educational programs in libraries. This includes learning strategies to help students develop skills in searching, evaluating, and using information effectively. "Assessment" refers to the assessment of users' information literacy skills. Previous research supports the importance of focusing on instructional design in the context of academic libraries. For example, a study by Diao (2021) explored how the Ideas-Connections-Extensions (ICE) framework was applied in library instruction and classroom settings. Furthermore, other research has shown the importance of integrating information literacy into writing skills (Yu, 2023).

Cluster 4: Higher Education and Collaboration

Keywords in this cluster indicate the close relationship between academic libraries and higher education institutions. "Higher education" and "collaboration" reflect how libraries collaborate with faculty and other departments to support the educational and research missions of universities. "Academic librarians" and "academic libraries" indicate the important role of academic librarians in supporting higher education activities. Research by O'Hanlon & Aminian, (2022) highlights the important role of libraries in supporting student learning outcomes through collaboration with faculty. Additionally, research by Angell (2019) suggests that collaboration between librarians and faculty can improve the quality of student research and learning.

Cluster 5: Digital Libraries, Open Access and Scholarly Communication

This cluster is located in the bottom centre of the map, reflecting the importance of digital technologies and open access in library research. "Digital libraries" refers to the development and management of digital collections, while "open access" refers to policies that allow free access to scholarly information. "Research" and "scholarly communication" encompass how libraries support research and scholarly communication. Previous research supports the importance of focusing on Digital libraries and open access. For example, a study by Zha (2019) emphasized that digital library innovation is an important step in supporting wider and more efficient access to information, as well as making it easier for users to find and access digital resources. The relationship between digital libraries, open access and Scholarly Communication is also seen in a study by (Boufarss & Harviainen, 2021), which explains how open access is changing the landscape of scholarly publishing through digital platforms, thereby increasing the visibility and accessibility of research results.

These findings demonstrate the complexity and depth of research in academic libraries and the importance of a holistic approach to managing and developing

libraries to support education and learning. Furthermore, the presented Figure 4 Thematic Map reinforces the findings of the conceptual structure map by providing an additional layer of understanding of the structure and dynamics of research in academic libraries. The Thematic Map identifies four main categories of research themes in academic libraries based on two dimensions: degree of relevance (centrality) and degree of development (density). The four categories are Basic Themes, Motor Themes, Niche Themes, and Emerging or Declining Themes.

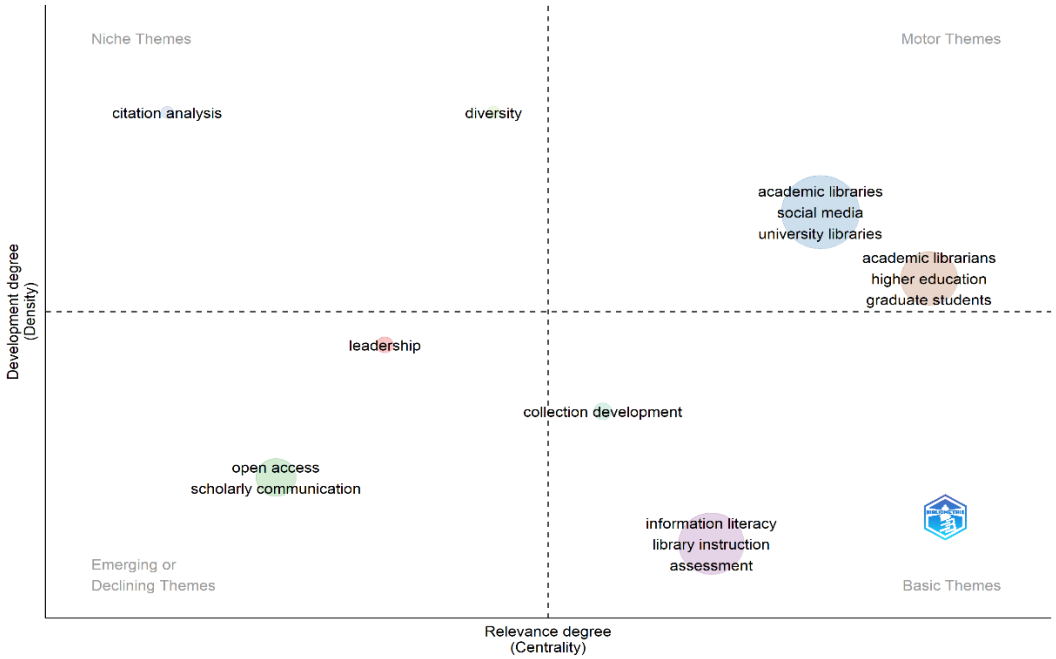

Figure 5. Thematic Map

Basic Themes are located in the lower right quadrant of the thematic map. These themes have a high degree of relevance but a low degree of development, meaning that they are fundamental but have yet to develop in research fully. Themes that fall into this category are information literacy, library instruction, and assessment. Motor Themes are located in the upper right quadrant of the thematic map and have a high degree of relevance and development. These themes are the centre of active research and development. Included in this category are academic libraries, social media, university libraries, graduate students, and higher education. Niche Themes are located in the upper left quadrant and have a low degree of relevance but a high degree of development. These themes are often specialized areas of in-depth research but may have a limited application. Included in this category are citation analysis and diversity. Emerging or Declining Themes are located in the lower left quadrant of the thematic map and have a low degree of relevance and development. These themes may be declining or emerging in research. Included in this category are open access and scholarly communication. Research by Jaime et al. (2021) has highlighted the importance of open access in increasing the visibility and impact of academic research. Additionally, research by

Cullen and Chawner (2011) has reviewed how institutional repositories can increase the accessibility and use of scholarly work.

D. CONCLUSION

Research in academic libraries over the past decade has shown diverse and dynamic trends. Key themes that have emerged include Inclusion and Diversity, emphasizing the importance of creating an inclusive library environment that supports cultural and social diversity. Professional Development The Professional Development of librarians is also a major focus, with the need to continually adapt to changing technologies and evolving library practices. Instructional Design and Library Instruction highlight instructional design and information literacy, including learning strategies and assessment of information skills. Higher Education and Collaboration describes the relationship between libraries and higher education institutions, with an emphasis on collaboration to support education and research. Effective library management and adaptive leadership also play a critical role in meeting modern challenges. Finally, digital libraries, scholarly communication and open access are increasingly relevant areas, highlighting the importance of libraries in supporting the accessibility and dissemination of scholarly work.

For further research, it is suggested that a meta-analysis of the literature related to academic libraries can be conducted, such as the effectiveness of new technologies in library services, the impact of digitization on library structure and operations, and the impact of library instruction on academic achievement.

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