

Information-Seeking Behaviour and the Use of Electronic Information Resources Among Undergraduate Students: A Systematic Literature Review

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ABSTRACT

Nowadays it is a prerequisite for libraries to understand their users' information-seeking behaviour and tailor their services to meet these needs. This study aims to explore information-seeking behaviour (ISB) and electronic information resources (EIRs) for academic pursuits, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach. Moreover, it seeks to offer valuable insights that will enhance EIRs, library resources, innovative pedagogies, and technological support for librarians, educators, and policymakers. It also strives to foster novel knowledge that will propel future research inquiries and support universities' missions of producing high-calibre skilled graduates who are capable in efficiently managing the nation's labour cycle. The study will gather data by searching four electronic databases: EBSCO, Google, Scopus, and ProQuest, for peer-reviewed articles published between 2022 and 2024. It will search certain (000) research articles for the review. The review covers qualitative, quantitative, and mixed studies conducted across educational institutions, such as universities, colleges, and technical institutions. This hopes to uncover numerous factors that can impact students' academic pursuits. It provides conclusions and recommendations.

INTRODUCTION

In today's information age, undergraduate students have diverse reasons for seeking information and using electronic resources for their academic pursuits. However, the underutilization of electronic resources is a concern because it impedes academic research and the quality of graduates produced by universities. The graduates are crucial for driving the nation's development in various socio-economic, political, and technological sectors. The proliferation of technological innovations recently has inspired diverse research from universities on factors influencing undergraduate students' decisions to seek and

use a wide range of library resources, especially electronic information resources (EIRs) and e-databases, which sound like poor optimal use in developing countries like Nigeria. Universities and libraries are synonymous with education and offer countless learning opportunities that can serve as critical hubs in the nation's socioeconomic, cultural, political, and technological advancement. This can be achieved through technological innovations in library resources and services (Onuoha & Chukwueke 2023, Federal Ministry of Education 2019, Anasi, Ukangwa, & Fagbe, 2018).

Universities play a crucial role in producing high-quality graduates who can contribute to the nation's workforce and emerge as future employment prospects. Thus, it promotes a skilled workforce to fill existing gaps and vacancies in the labour market (Timotheou 2023; Eje & Dushu 2018; OECD 2016). These graduates tend to make efficient use of library resources, which often leads to improved employability and income prospects. Undergraduate students are encouraged to seek and utilize a vast information source to efficiently fulfil their academic requirements. Nowadays undergraduate students and professionals must possess critical thinking, problem-solving, and information-seeking skills capably to utilize electronic information and technologies. These competencies or skills are indispensable for success in today's academic and professional settings (Marrero-Sánchez, & Vergara-Romero 2023, Chlomoudis 2022). Still, students both in and after graduation, should steer electronic information and technologies in attaining a professional skilled workforce in this particular field capable of managing diverse sectors.

The information-seeking behaviour of undergraduate students has remained a unique area of study. Yet in recent times, it continues to create debates within the academic circles. The profound proliferation of electronic information resources has raised concerns about their under-utilization in education" (BBC News, 2006). Over the years, university libraries prioritized accessibility, utilization, and seeking of e-information for academics to facilitate research interest, among undergraduate students thereby achieving the university's mission (Alazemi, 2023). However, university libraries substantially boost their visibility and reputation by strategically investing in evolving electronic information resources (EIRs) through user-friendly information service-centred approaches, programs, strategies, and policies designed to meet the information requirements of their users. Hence, inadequate accessibility and utilization pose challenges that impede academic and research, as well as the success of the university's mission. Now the concept of information-seeking behaviour comprises all types of conscious and unconscious information-seeking patterns by information users (Bates 2017, and Case & Given 2016). Studies show undergraduate students' information-seeking behaviour towards EIRs does not meet university library service expectations due to low optimal usage by users. Interestingly, knowledge and understanding the information systems and sources among undergraduate students would greatly expand the potential of seeking and using electronic resources which is crucial for academic accomplishment in the current era (Alazemi 2023; Usman., Dangani & Fari 2019; Baro, Onyenania & Oni 2010).

This study would significantly enrich flexibility and convenience, influencing students' and faculty members' academic engagement by fostering a comprehensive scientific debate on seeking and utilizing EIRs. This can benefit library management in knowing the best information-seeking practices and guidelines through the review. Studies disclosed that university libraries do not adequately instruct users on the optimal use and search of EIRs for academic purposes (Tachie-Donkor & Ezeama 2023; Humbhi et al 2022; Osinilu, 2020; Adeniran & Onuoha 2018).

The extensive studies of information-seeking behaviour towards electronic information resources (EIRs), use stress the most crucial need for enhanced personal connections between library resources and readers. Prior studies in information-seeking behaviour have been conducted, with a little focus on developing countries like Nigeria. Therefore, it is necessary to investigate their information-seeking behaviour and the use of electronic information resources towards academic pursuits. This study uses identify the relevant literature through a systematic literature review built on the outlined Preferred

Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) method. However, very few or none have designed to systemic literature review to explore on similar topic with a specific search string through e-databases such as EBSCO, Scopus, Google, and ProQuest.

RESEARCH RATIONALE

In today's information era, there are many reasons why undergraduate students seek information and use electronic resources for their academic pursuits such as completing assignments, conducting research, and staying updated with current knowledge. However, the underutilization of these electronic resources is a concern because it hinders academic research and the quality of graduates who are needed to drive the socio-economic, political, and technological developments of the nation. Factors contributing to underutilization include lack of awareness, insufficient information-seeking or searching skills, and limited access to necessary information technology. Addressing these challenges is crucial to guarantee students access and use of electronic information resources and contribute to their academic accomplishments.

However, undertaking a systematic review of the related literature is a crucial part of any academic discipline (Hart, 2018). Reviewing literature is a crucial part of academic research and scholarship. There are several reasons for conducting systematic literature review (SLR) studies. According to Del-Amo et al, (2018), the SLR study serves as a systematic, explicit, and reproducible process for identifying, evaluating, and synthesizing the existing body of knowledge work created by researchers, scholars, and practitioners. In context to this study, Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was designed to persuade systematic reviewers to transparently report why the review was done, what the authors did, and what they found. The SLR approach follows determined search protocols and checklist items used to improve transparency in the systematic review process. These items cover aspects of the manuscripts, including titles, abstracts, introduction, methods, results, discussion, and funding (Page, McKenzie, & Bossuyt et al, 2021).

Research has revealed the core fundamental reason for using systematic literature reviews (SLRs) is to conduct comprehensive reviews. This provides an in-depth approach to identifying, mapping, analyzing, synthesizing, and interpreting the existing scientific literature on a specific topic (Lim, Kumar, & Ali, 2022). The study adopts the SLR and meta-analysis approach to uncover knowledge gaps in the existing literature regarding undergraduate students' information-seeking behaviour and use of electronic information resources and other e-databases. It seeks to pinpoint research areas, topics, and methodologies, noting an exact shortage of understanding of information-seeking behaviour (ISB) and electronic information resources (EIRs), thereby underscoring the necessity for further research inquiries. Furthermore, this study aims to deliver valuable insights to boost the use of EIRs, library resources, instructional pedagogies, and technological support for educators, librarians, and policymakers; additionally, it seeks to inspire a novel body of knowledge for future research inquiries, hence guiding decision-makers to act accordingly (Azarian et al 2023; Mengist, Soromessa & Legese 2020; Moher, Shamseer & Clarke 2015). Therefore, this study seeks to bridge the knowledge gaps by systematically reviewing the literature on undergraduate students' information-seeking behaviour (ISB) and electronic information resources (EIRs) used for academic pursuits.

RESEARCH OBJECTIVES

In light of the study rationale outlined, the primary research objective is to conduct a systematic literature review (SLR) of the academic factors influencing undergraduate students' information-seeking behaviour (ISB) and the use of electronic information resources (EIRs) for academic pursuits.

Therefore, the following research questions are designed to be addressed in the study:

1. What factors contribute to insufficient information-seeking behaviour (ISB) among undergraduate students?
2. What relationship exists between ISB and EIR use among undergraduate students?
3. What trends in information-seeking behaviour impact the utilization of EIRs among undergraduate students?

METHODOLOGY

To advance the precision at which the study objectives are achieved, the key terms, or concepts and search string context approach for the study. Accordingly, in performing the rigorous systematic literature review (SLR), which is described as a crucial aspect of academic research and scholarship. The failure to conduct an exhaustive search can lead to biases in the reported conclusions and results (Rusol & Abdel-Salam 2023). Vassar et al. (2017) argue that researchers often use e-databases to select relevant papers related to their topic of interest, develop accurate search strategies, and choose the appropriate database for their review. Studies disclosed that, nowadays many electronic databases such as AGORA, EBSCO, Emerald, Google, Google Scholar, JSTOR, Science Direct, Scopus, ProQuest, Web of Science, and Wiley are accessible and utilized in university libraries worldwide, including in developing nations like Nigeria (Fireyi, 2023).

Primarily, this research will analyze four (4) e-databases EBSCO, Google, Scopus, and ProQuest from 2022 to 2024 (3) years of peer-reviewed articles. Studies indicate that these selected e-databases are robust and focus on the review subject domain, with a large citation and abstract database of peer-reviewed literature and credible web sources (Bramer, Rethlefsen, & Kleijnen, 2017; Gali., Henk & Judit, 2017). The study uses the PRISMA approach due to its widespread use, especially in the scientific research approach, to reduce the risks of publication bias and enhance the work's acceptability. Therefore, most review studies adhere to the literature search protocol outlined by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. (PRISMA) (Del-Amo, et al, 2018, Moher, et al 2010).

For searching using e-databases, a set of synonymous key terms strings was designed to be used in the search engine using Boolean operators. These terms include the following:

Table 1: Key terms used align with research objectives

Research Objectives	Search Strings Based on Boolean Operators
1	("insufficient information-seeking behaviour" OR "poor information-seeking behaviour" OR "inadequate information-seeking behaviour" OR "information-seeking challenges"); ("undergraduate students" OR "college students" OR "university students");
2	("electronic information resources" OR "EIRs" OR "digital resources" OR "online resources");
3	("relationship" OR "correlation" OR "association") ("Insufficient information-seeking behaviour" OR "ISB" OR "Electronic information resources" OR "EIRs");
4	("impact" OR "effect" OR "influence"); ("utilization" OR "use" OR "usage"); ("electronic information resources" OR "EIRs" OR "digital resources" OR "online resources");

This review will explore factors influencing students' information-seeking behaviour (ISB) toward electronic information resources (EIRs) between 2022 and 2024. It aims to boost academic attainment in developing countries including Nigeria by addressing persisting issues like low optimal use of EIRs and

library resources as well as improving innovative instructional pedagogies. An exhaustive search of two electronic databases can be realized.

Moreover, the reason focuses on recently published papers hosted via technological databases sphere for academic teaching and research, with the sole intention to boost the understanding of factors that contribute to undergraduate students' efficient EIR use, thus, aiming to produce high-quality graduates capable of managing the nation's labour sector.

RESEARCH ELIGIBILITY: INCLUSION AND EXCLUSION CRITERIA

In the current SLR, the researchers used basic search criteria that comprise English as the language of research, limited to full-text peer-reviewed academic journals published between 2022/2024, relevant to the current topic under review. The inclusion and exclusion criteria can be as follows:

Table 2: Inclusion and Exclusion Eligibility Criteria

Content	Inclusion	Exclusion
Articles	The search articles focused on Nigeria and were peer-reviewed, and;	Articles not correlated to ISB and EIRs by Nigeria excluded
Date/Period	The period between 2022-2024, and;	Articles issued before 2022 excluded
Database	Peer-reviewed articles published in EBSCO, Google, Scopus, and ProQuest and;	Articles not peer-reviewed issued in different e-databases were excluded.
Language	The articles published in English and;	Articles published in a different language excluded
Design/Approach	Quantitative, qualitative, and method research design	Inaccessible literature and reports
Publication Type	Peer-reviewed articles	Studies that report empirical findings (e.g., books, concept papers, reviews, excluded

FINDINGS OF THE STUDY

Search Outcomes

The retrieval runs from both e-databases produced a total of (000) papers from EBSCO, Google, Scopus, and ProQuest. By the end of the overview search process and after removing duplicate articles or full text that could not be used.

CONCLUSION

In conclusion, the systematic literature review on information-seeking behaviour and the use of electronic information resources among undergraduate students for their academic task reveals several key insights. Undergraduate students increasingly rely on electronic resources for academic research and learning, with a growing preference for digital tools and platforms due to their accessibility, convenience, and the vast amount of information they offer. However, challenges remain, such as the lack of information literacy skills, difficulties in evaluating the credibility of online sources, and time management issues when navigating electronic resources.

The reviewed studies suggest that while students are adept at using search engines and databases, they often lack advanced skills in refining searches or utilising specialised academic tools effectively. Additionally, students incline to use electronic resources more passively, relying heavily on familiar

sources rather than exploring a wide range of scholarly databases or platforms. These findings indicate the need for targeted educational interventions to improve students' information-seeking strategies, enhance their critical evaluation skills, and encourage a more purposeful and informed use of electronic resources.

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REFERENCES

- Adeniran, P. & Onuoha, U. (2018). Influence of information literacy skills on postgraduate students' use of electronic information resources in private University Libraries in South-West Nigeria. *Communications and Network*, 10, 164 – 179. <https://10.4236/cn.2018.104014>.
- Anansi., S. N. Ukangwa, C. C. & Fagbe, A. (2018) "University libraries-bridging digital gaps accelerating the achievement of sustainable development goals through information and communication technologies", *World Journal of Science, Technology and Sustainable Development*, 15, (1), 13 - 25, <https://doi.org/10.1108/WJSTSD-11-2016-0059>.
- Azarian, M., Yu, H., Shiferaw, A. T., & Stevik, T. K. (2023). Do we perform a systematic literature review right? A scientific mapping and methodological assessment. *Logistics*, 7, 89. <https://doi.org/10.3390/logistics7040089>.
- Baro, E., Onyenania, G., & Oni, O (2010). Information-seeking behaviour of undergraduate students in the humanities in three universities in Nigeria. South African. *Journal of Libraries and Information Science*. 76 (2), 109 - 117. <https://doi:10.7553/76-2-74>.
- Bramer, W. M., Rethlefsen, M. L., & Kleijnen, J. et al. (2017). Optimal database combination for literature searches in systematic reviews: a prospective exploratory study. *Systematic Review*, 6, 245. <https://doi.org/10.1186/s13643-017-0644-y>.
- Bates, M. J. (2017). Information behavior. In *Encyclopedia of Library and Information Sciences* (2074-2085). CRC Press.
- BBC News (2006). "Net student think copying OK", 18 June, retrieved via: <http://news.bbc.co.uk/go/pr/fr/-/1/hi/education/5093286.htm>.
- Case, D. O. & Given, L. M. (2016), in Mai, J.-E. (Ed.). *Looking for information: a survey on the research on information seeking, needs, and behaviour*, 4th ed., Emerald.
- Chlomodis, C., Konstantinou, A. Kostagiolas, P. & Pallis, P. (2022). Information needs and information-seeking behaviour of maritime students: a systematic literature review using the PRISMA method. *Library Management*. 43. <https://doi:10.1108/LM-11-2021-0105>.
- Del Amo, I. F., Erkoyuncu, J. A., Roy, R., Palmarini, R., & Onoufriou, D. (2018). A systematic review of augmented reality content-related techniques for knowledge transfer in maintenance applications. *Computers in Industry*, 103, 47 - 71.

- Eje, Ogar Christopher & Dushu, Tangkat Yusuf, (2018). "Transforming library and information services delivery using innovation technologies". *Library Philosophy and Practice (e-journal)*. 2036. <http://digitalcommons.unl.edu/libphilprac/2036>.
- Federal Ministry of Education, Nigeria. (2019). National Policy on Information and Communication Technologies (ICTs) in Education. <https://education.gov.ng/wp-content/uploads/2019/08/05>.
- Eireyi-Fidelis, Saadatu. (2023). The usage of electronic academic database resources among lecturers and postgraduate students in western Delta State University, Oghara, Delta State, Nigeria. *International Journal of Librarianship*. 7, (2), 106 - 112. <https://www.researchgate.net/publication/370875670>.
- Gali Halevi, Henk Moed, & Judit Bar-Ilan, (2017). Suitability of Google Scholar as a source of scientific information and as a source of data for scientific evaluation review of the literature, *Journal of Informetric*, 11, (3), 823 - 834. <https://www.sciencedirect.com/science/article/pii/S1751157717300676>. <https://doi.org/10.1016/j.joi.2017.06.005>.
- Hart, C. (2018). *Doing a literature review: releasing the research imagination*. Sage Publication Limited.
- Kumar, Sanjeev & Samyal, Jatinder Kumar (2021). "Awareness and information-seeking behaviour of undergraduate students of the university in the digital environment: a systematic review" *Library Philosophy and Practice (e-journal)*. 5601. <https://digitalcommons.unl.edu/libphilprac/5601>.
- Lim, Weng Marc., Kumar, Satish & Ali, Faizan. (2022). Advancing knowledge through literature reviews: "what", "why", and "how to contribute". *Service Industries Journal*. <https://10.1080/02642069.2022.2047941>.
- Marrero-Sánchez, Odalys & Vergara-Romero, Arnaldo. (2023). Digital competence of the university students: a systematic and bibliographic update. *Revista Amazonia Investiga*. 12, (67), 9 - 18. <https://doi:10.34069/AI/2023.67.07.1>.
- Mengist., W. Soromessa., T. & Legese, G. (2020). Method for conducting a systematic literature review and meta-analysis for environmental science research, *Methods* 10, (7), 22150161. <https://www.sciencedirect.com/science/article/pii/S221501611930353X>. <https://doi.org/10.1016/j.mex.2019.100777>.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G. (2010). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Int. J. Surg.*, 8, (5), 336 – 341.
- Moher, D. Shamseer, L. Clarke, M. et al. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) statement *Systematic. Review.*, 4 (1), 1.
- OECD, (2016). *Innovating education and educating for innovation: The power of digital technologies and skills*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264265097-en.Onuoha>,
- Juliet. David-West, Boma Torukwein. & Chukwueke, Chukwuemeka (2023). Proposed pathway for Nigerian libraries in the face of prevailing educational and societal requirements. *Ghana Library Journal*, 28, (2), 75 – 157 <https://dx.doi.org/10.4314/glj.v28i2.7>.

- Ozonuwe, Opene Sunday., Ogungbade, Aderonke., Ayoola Ogundana., & Nwaogu, Humphrey (2023). Availability of information resources, utilization of college libraries and academic performance of undergraduate students at Crawford University. *International Journal of Innovation Scientific Research and Review*. 5. (4), 4330 - 4335. <http://www.journalijisr.com>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M. et al (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Systematic Review Journal*, 10, (89). <https://doi.org/10.1186/s13643-021-01626-4>.
- Rusol AdilNaji ALTameemi., Chithira Johnson., Rizwan Gitay, & Abdel-Salam Gomaa, (2023). Determinants of poor academic performance among undergraduate students: a systematic literature review. <https://doi:10.1016/j.ijedro.2023.100232>.
- Timotheou S, Miliou O, Dimitriadis Y, Sobrino S. V, Giannoutsou N, Cachia R, Monés A. M, Ioannou A. (2023). Impacts of digital technologies on education and factors influencing schools' digital capacity and transformation: A literature review. *Educ Infor Technol (Dordr)* 28, (6), 6695 - 6726. <https://doi:10.1007/s10639-022-11431-8>.
- Usman Manjack, Felix., Dangani, Babngida & Fari, Sani. (2019). Utilization of electronic information resources by undergraduate students in University Libraries in Gombe State, Nigeria. 2. (1) 57 - 67. <https://www.researchgate.net/publication/331522293>.
- Vassar, M. Yerokhin, V. Sinnett, P. M., Weiher, M., Muckelrath, H., Carr, B., & Cook, G. (2017). Database selection in systematic reviews: an insight through clinical neurology. *Health Information Library Journal*, 34, (2), 156 - 164, <https://doi:10.1111/hir.12176>.