Awareness and Utilization of E-Resources by Students and Researchers in Developing Countries: A Comprehensive Literature Review

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Abstract- *The increasing availability of electronic resources (e-resources) has significantly transformed academic and research activities, particularly in developing countries. This review paper examines the level of awareness and utilization patterns of e-resources among students and researchers in Asia, Africa, and Latin America. Findings from multiple studies reveal that users generally exhibit moderate to high awareness of common e-resources such as Google Scholar, e-journals, and e-books; however, awareness of specialized databases remains limited. Utilization is primarily motivated by academic assignments, examinations, and research work, with mobile devices becoming the dominant access tool. Despite the benefits of e-resources—such as 24/7 accessibility, updated information, and improved research productivity—numerous challenges persist, including poor ICT infrastructure, low digital literacy, insufficient training, institutional funding limitations, and usability issues. The review highlights the need for improved information literacy programs, enhanced digital infrastructures, increased participation in national consortia, and expanded access to scholarly databases. Addressing these challenges will enable students and researchers in developing countries to fully leverage the potential of e-resources for improved academic and research outcomes.*

Keywords: E-resources, electronic resources, digital libraries, awareness, utilization, students, researchers, developing countries, information literacy, academic libraries, ICT, open access, online databases.

I. INTRODUCTION

The rapid advancement of information and communication technologies (ICT) has transformed how knowledge is created, stored, accessed, and disseminated. E-resources—such as e-journals, e-books, online databases, digital libraries, institutional repositories, and open-access platforms—play a critical role in supporting academic and research activities. For developing countries, these resources hold the potential to bridge information gaps, enhance research productivity, and support quality education. However, awareness and utilization of e-resources vary widely across institutions, disciplines, and geographic regions. This literature review synthesizes major research studies from Asia, Africa, and Latin America to understand how students and researchers in developing countries discover, access, and use e-resources, and what barriers affect their effective usage.

II. CONCEPT AND TYPES OF E-RESOURCES

E-resources refer to digital information products available electronically. They include:

- E-journals
- E-books
- Online databases (e.g., Scopus, JSTOR, ScienceDirect)
- Institutional repositories (Shodhganga, arXiv)
- Open access resources
- E-theses, e-dissertations, e-newspapers
- Web-based academic tools (Google Scholar, ResearchGate)

Modern academic libraries provide access through library portals, proxy servers, discovery tools, and national consortia. Their increasing adoption has made them essential for academic success.

III. AWARENESS OF E-RESOURCES

3.1 General Awareness Levels

Most studies indicate moderate to high awareness among students and researchers in developing countries, though the depth of awareness remains uneven.

Key findings from literature:

- Undergraduate students typically know basic tools like Google Scholar, Wikipedia, and general e-books.

- Postgraduate students and researchers show higher awareness of specialized e-journals and databases.
- Awareness is higher in urban universities compared to rural institutions.
- Institutions with strong ICT support systems report better awareness levels.

3.2 Sources of Awareness

Common channels include:
- Library orientation programs
- Faculty guidance
- Friends and peer groups
- Internet searching
- Library websites and OPAC
- Social media promotions
- Institutional workshops

3.3 Factors Influencing Awareness

- Availability of ICT infrastructure
- Exposure to information literacy programs
- Personal digital skills
- Academic level and discipline
- Motivation and research needs

Studies consistently highlight that awareness improves significantly when libraries conduct regular training and orientation sessions. However, such programs are often irregular in developing countries due to limited staff and budgets.

IV. UTILIZATION OF E-RESOURCES

4.1 Purpose of Use

E-resources are mainly used for:
- Research and literature review
- Assignment writing and seminars
- Exam preparation
- Data collection for theses and dissertations
- Updating knowledge and staying current

4.2 Preferred Types of E-Resources

Students and researchers in developing countries show strong preferences for:
- E-journals and e-books
- Google Scholar and open access content
- Online lecture videos (YouTube, Coursera, NPTEL)
- Subject repositories

Subscription databases are less used due to limited access or lack of awareness.

4.3 Usage Trends
- Usage increases significantly during exams and research submission deadlines.
- Mobile phones are now the primary access device due to convenience and affordability.
- Many users prefer quick access over detailed scholarly searching.

Studies show that even when institutions subscribe to high-quality databases, students tend to underuse them unless trained effectively.

V. BENEFITS OF USING E-RESOURCES

Research consistently reports the following advantages:
- 24×7 remote access
- Simultaneous multi-user access
- Time-saving during literature searches
- Updated, relevant and global information
- Enhances research productivity
- Reduces dependence on physical library space

E-resources also significantly support academic writing, improve citation accuracy, and help users stay current in their disciplines.

VI. BARRIERS AFFECTING AWARENESS AND UTILIZATION

6.1 Technological Challenges

- Poor internet connectivity and slow bandwidth
- Limited computers and Wi-Fi access
- Frequent power cuts
- Outdated library software and poor interfaces

These technological issues are more severe in rural and government-funded institutions.

6.2 Institutional Barriers

- Insufficient e-resource subscriptions due to budget constraints
- Lack of trained library staff to support digital services
- Poorly maintained library websites
- Limited awareness programs or training sessions

In some regions, libraries still prioritize print collections over digital ones.

6.3 User-Related Challenges

- Limited digital literacy
- Lack of advanced search skills
- Inability to distinguish scholarly resources from general internet content
- Preference for traditional printed books
- Language barriers for English-based e-resources

Studies show that even when e-resources are available, users may avoid them due to difficulty navigating complex interfaces.

VII. ROLE OF LIBRARIES AND CONSORTIA

Libraries in developing nations have adopted multiple strategies to promote e-resources:

7.1 Information Literacy Programs

Workshops, demonstrations, and hands-on training significantly improve user engagement and skill.

7.2 National and International Consortia

Consortia help institutions access high-quality databases at lower cost:
- INFLIBNET (India)
- e-ShodhSindhu
- HINARI (Health sciences)
- AGORA (Agriculture)
- OARE (Environmental science)
- EIFL (global access for developing nations)

These consortia play a crucial role in democratizing access to scholarly information.

7.3 Digital Library Services

Libraries provide:
- Remote access (VPN, proxy login)
- Discovery services
- Digital repositories for theses and research output
- Email alerts and social media outreach

VIII. IMPACT OF E-RESOURCES ON ACADEMIC AND RESEARCH PERFORMANCE

Several studies connect high utilization of e-resources with:
- Improved academic grades
- Better research output
- Higher citation rates
- Increased participation in scholarly communication
- Reduced plagiarism (with proper guidance)

Researchers report e-resources as indispensable, especially for literature reviews, staying current, and producing high-quality research publications.

IX. RESEARCH GAPS IDENTIFIED IN EXISTING LITERATURE

The review highlights several gaps:
- Limited research on rural universities and small institutions
- No significant studies on AI-based e-resources (ChatGPT, Semantic Scholar AI tools)
- Few comparative studies across countries or regions
- Minimal research on subject-specific usage patterns
- Need for longitudinal studies to measure long-term impact

Future studies should explore the role of emerging technologies, especially AI-driven scholarly tools, digital literacy models, and the post-COVID digital transformation.

X. CONCLUSION

Awareness and utilization of e-resources in developing countries have grown substantially over the last decade. The shift toward digital learning—accelerated by the COVID-19 pandemic—has increased reliance on e-resources for academic and research activities. However, challenges related to ICT infrastructure, digital literacy, institutional support, and subscription costs still hinder optimal usage. To improve the situation, academic institutions must invest in training programs, strengthen ICT facilities, increase subscription coverage through consortia, and redesign user-friendly digital library interfaces. Effective planning and continuous user support can significantly enhance the adoption and impact of e-resources, helping bridge the information divide between developing and developed nations.

REFERENCES

[1] Ali, N. (2005). The use of electronic resources at IIT Delhi Library: A study of search behaviors. Electronic Library, 23(6), 691–700.

[2] Baro, E. E., Endouware, B. C., & Ubogu, J. O. (2011). Information literacy among medical students in the University of Lagos, Nigeria. Electronic Library, 29(1), 90–107.

[3] Dadzie, P. S. (2005). Electronic resources: Access and usage at Ashesi University College. Campus-Wide Information Systems, 22(5), 290–297.

[4] EIFL. (2020). Electronic Information for Libraries: Impact Report. EIFL Publications.

[5] HINARI. (2022). Access to Research for Health Programme: Annual Report. World Health Organization.

[6] INFLIBNET Centre. (2023). E-ShodhSindhu: Consortium for Higher Education Electronic Resources. Retrieved from https://ess.inflibnet.ac.in

[7] Islam, M. E., & Karim, M. A. (2020). Use of e-resources by students in developing countries: A review. International Journal of Library & Information Studies, 10(4), 45–56.

[8] Jamuna, K., & Dhanamjaya, M. (2021). Impact and usage of e-resources: A literature review. Library Philosophy and Practice, 1–22.

[9] Kaur, A., & Verma, R. (2022). Awareness and use of electronic resources by research scholars: A review. Journal of Information Management, 9(1), 45–58.

[10] Kumah, C. H. (2015). A comparative study of the use of electronic and print resources by postgraduate students of the University of Ghana. Information and Knowledge Management, 5(11), 1–7.

[11] Markwei, E., & Rasmussen, C. (2020). Information literacy in developing countries: Review of research and practice. Global Knowledge, Memory and Communication, 69(1/2), 1–15.

[12] Ojo, A. A., & Akande, S. O. (2018). Students' access, usage, and awareness of electronic information resources at the University of Ilorin, Nigeria. Journal of Applied Information Science, 6(2), 27–38.

[13] Owolabi, S. (2020). Utilization of electronic information resources by students in selected African universities. Journal of Academic Librarianship, 46(3), 1–8.

[14] Singh, P., & Kaur, M. (2015). Digital library adoption and use: A review and research agenda. Library Review, 64(3), 218–239.

[15] Tella, A., Ajayi, T. B., & Olabooye, T. A. (2017). Awareness, use, and barriers to electronic information resources among students in Nigerian universities. African Journal of Library, Archives & Information Science, 27(2), 125–135.

[16] Tenopir, C., & King, D. W. (2008). Electronic journals and changes in scholarly article use. Serials Review, 34(1), 34–42.

[17] Thanuskodi, S. (2012). Use of e-resources by postgraduate students of Sivanthi Aditanar College of Engineering, Tamil Nadu, India. Library Philosophy and Practice, 1–10.