Empowering Academic Development through Digital Equity: A Comprehensive Review of Open Access Resources for Engineering and Management Disciplines

Vishnudas A V

Assistant Librarian, Presidency University, Bengaluru, Karnataka

Corresponding Author Email: vishnudasav2000@gmail.com | ORCID: https://orcid.org/0009-0006-7174-9459

How to Cite this Article:

V, V. A. (2026). Empowering Academic Development through Digital Equity: A Comprehensive Review of Open Access Resources for Engineering and Management Disciplines. International Journal of Creative and Open Research in Engineering and Management, 02(04). https://doi.org/10.55041/ijcope.v2i4.919

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Abstract

The rapid growth of digital technologies has significantly increased the demand for accessible scholarly information in engineering and management disciplines. However, subscription-based databases and costly academic publications often limit access to quality research materials, creating challenges for students and researchers. Open access resources have emerged as an effective solution to promote digital equity by providing free and unrestricted access to scholarly literature, technical reports, e-books, and educational materials. The present study adopts a descriptive research design based on secondary sources and basic web exploration to identify and review major open access resources relevant to engineering and management disciplines. The study categorizes resources into databases, open access journals, repositories, e-books, educational platforms, and research report sources. These resources support teaching, learning, literature review, and research activities without financial barriers. The findings highlight that open access platforms enhance academic productivity, support innovation, and promote inclusive access to knowledge. The study also discusses benefits, challenges, and the role of libraries in promoting effective utilization of open access resources. The categorized listing provided in this study serves as a useful guide for identifying reliable open access platforms. The study concludes that open access resources play a crucial role in empowering academic development and strengthening digital equity in engineering and management education.

Keywords: Open Access Resources; Digital Equity; Engineering and Management; Academic Development; Open Educational Resources

1. Introduction

The rapid growth of digital technologies has significantly transformed the landscape of higher education and research, particularly in the disciplines of engineering and management, where access to current and high-quality information is essential for academic success. However, the rising cost of scholarly publications, subscription-based databases, and commercial learning platforms often creates barriers to equitable access, especially for students and researchers from institutions with limited financial resources. In this context, open access resources have emerged as an important solution to bridge the information gap and promote digital equity in academic environments. Open access platforms provide unrestricted access to scholarly journals, conference papers, technical reports, theses, datasets, and educational materials, thereby supporting teaching, learning, and research activities without financial constraints. For engineering and management scholars, these resources play a crucial role in enabling innovation, supporting project work, enhancing literature review, and facilitating scholarly communication. Moreover, the availability of open repositories, academic search engines, open educational resources, and knowledge-sharing platforms has further strengthened opportunities for self-directed learning and collaborative research. Despite the increasing availability of such resources, they are often scattered across multiple platforms, making it difficult for users to identify relevant tools efficiently. Therefore, there is a need to compile and review major open access resources that support academic development in engineering and management disciplines. This study aims to present a comprehensive descriptive review of open access platforms, highlighting their scope, accessibility, and relevance in promoting inclusive and equitable access to academic information.

2. Objectives

1) To identify and compile major open access resources available for the disciplines of engineering and management.

2) To categorize open access platforms based on their type, such as open access journals, repositories, databases, academic search engines, and knowledge-sharing platforms relevant to engineering and management studies.

3) To understand the features, scope, and accessibility of selected open access resources supporting teaching, learning, and research in engineering and management fields.

4) To suggest suitable open access tools and platforms that can enhance research productivity, scholarly communication, and knowledge dissemination in engineering and management disciplines.

3. Review of Literature

The movement toward digital equity in higher education is fundamentally anchored in the strategic deployment of Open Educational Resources (OER) and the evolution of digital platforms. Mahajan et al. (2019) examine the transformative potential of Massive Open Online Courses (MOOCs), distinguishing between xMOOCs, which focus on knowledge dispersion, and cMOOCs, which foster connectivist creativity. For these digital environments to be truly empowering, Shah and Cheng (2019) argue that institutions must address student engagement, noting that emotional and behavioral involvement are critical predictors of achievement for underrepresented learners. The technical feasibility of such systems in engineering education is further explored by Piedra et al. (2015), who propose utilizing Linked Open Data to improve the discoverability and interoperability of OERs, allowing for the seamless composition of custom curricula. Despite these advancements, the pedagogical validity of open materials remains a concern; Bagiati et al. (2010) highlight the necessity of professional standards and teacher preparation when integrating online engineering resources into early education to ensure long-term learning outcomes. These modern applications are built upon the foundational "access principle" described by Willinsky (2006), which posits that the distribution of scholarly knowledge is a moral imperative. This principle is operationalized through the removal of price and permission barriers, a definition of Open Access (OA) that Bailey (2006) emphasizes is essential for transforming scholarly communication into a global public good.

4. Methodology

The present study adopts a descriptive research design based entirely on secondary sources of information. Data for the study were collected from previously published scholarly articles, review papers, reports, and relevant literature related to open access resources, digital equity, and academic support for engineering and management disciplines. In addition, open access platforms were directly identified through basic web searches and exploration of academic search engines, open access directories, institutional repositories, and scholarly communication platforms. Appropriate keywords such as open access resources, engineering databases, management open access journals, repositories, and academic search tools were used to locate relevant sources. The identified resources were screened based on relevance to engineering and management fields, accessibility, and academic usefulness. The selected resources were then organized and categorized into different types, and the findings are presented descriptively to highlight the availability and role of open access resources in supporting academic development.

5. Open Access: Concept, Importance, and Available Resources for Engineering and Management

Open access refers to the free, immediate, and unrestricted availability of scholarly information on the internet, allowing users to read, download, copy, distribute, and use research outputs without financial, legal, or technical barriers. The open access movement emerged as a response to the rising cost of scholarly publications and limited accessibility to subscription-based databases. Open access plays a vital role in promoting digital equity by ensuring that students, researchers, and faculty members, regardless of institutional or economic background, have equal access to academic information. In disciplines such as engineering and management, where research developments occur rapidly, access to current literature is essential for innovation, project development, teaching, and decision-making. Open access resources support academic development by facilitating literature review, improving research visibility, enhancing collaboration, and enabling lifelong learning. They also assist institutions with limited budgets in providing quality information services. Therefore, open access resources have become an indispensable component of modern academic and research environments.

A wide range of open access resources are currently available to support engineering and management scholars. These resources include open access journal directories, subject repositories, institutional repositories, academic search engines, open educational resource platforms, preprint servers, datasets, and scholarly networking platforms. Engineering scholars benefit from access to technical papers, standards, conference proceedings, and design-related materials, while management scholars require access to case studies, business research, working papers, reports, and policy documents. Open access platforms provide these materials in various formats, enabling users to identify relevant information for academic assignments, research projects, teaching preparation, and professional development. Since these resources are distributed across multiple platforms, categorizing them helps in systematic identification and effective utilization.

5.1. Open Access Resources for Engineering Scholars

5.1.1. Open Access Databases / Discovery Platforms

• Directory of Open Access Journals (DOAJ) – https://doaj.org

Directory of Open Access Journals (DOAJ) is a comprehensive indexing service that provides access to high-quality, peer-reviewed open access journals across various disciplines, including engineering and technology. It helps researchers discover scholarly articles, review papers, and technical studies freely available without subscription barriers. The platform supports subject-wise browsing and advanced search features, making it useful for literature review and research work.

• CORE – https://core.ac.uk

CORE is a large-scale open access aggregation platform that collects research outputs from repositories and journals worldwide. It provides free access to millions of full-text research papers in engineering, technology, and applied sciences.

CORE supports advanced search, filtering, and discovery tools that help users identify relevant academic literature efficiently. The platform is particularly useful for students and researchers conducting literature reviews.

• BASE (Bielefeld Academic Search Engine) – https://www.base-search.net

BASE is one of the world's largest academic search engines for open access web resources. It indexes content from institutional repositories, digital collections, and open access journals, including engineering-related materials. The platform provides access to theses, conference papers, articles, and technical documents. BASE is widely used for discovering freely available scholarly content.

• Semantic Scholar – https://www.semanticscholar.org

Semantic Scholar is an AI-powered academic search engine that provides access to open access research papers in engineering and related disciplines. It offers smart filtering, citation tracking, and topic-based discovery tools to help researchers quickly identify relevant literature. Many papers available through Semantic Scholar provide direct links to free full-text versions. The platform is useful for identifying recent research trends.

• ScienceOpen (Open access content) – https://www.scienceopen.com

ScienceOpen is a freely accessible research discovery and networking platform that provides access to open access scholarly content across multiple disciplines, including engineering and management. It offers advanced search tools, citation linking, and researcher-led collections that help users discover relevant academic literature efficiently. The platform also supports article recommendations, post-publication peer review, and community-based scholarly communication. ScienceOpen is designed to promote open science by enabling free access to research and improving visibility of academic publications.

• OpenAIRE – https://www.openaire.eu

OpenAIRE is a European open science infrastructure that provides access to open access publications, datasets, and research outputs. It aggregates scholarly content from multiple repositories and supports engineering and technology disciplines. Users can search for articles, datasets, and project outputs freely. The platform promotes open science and knowledge sharing.

5.1.2. Open Access Engineering Journals / Publishers

• IEEE Open Access Journals – https://open.ieee.org

IEEE Open Access Journals provide peer-reviewed research articles in various engineering and technology disciplines. These journals cover areas such as electrical engineering, computer science, electronics, communication, and emerging technologies. All open access articles published under IEEE OA titles are freely available for reading and downloading without subscription. The platform supports high-quality scholarly communication and dissemination of engineering research.

• SpringerOpen Engineering – https://www.springeropen.com/engineering

SpringerOpen Engineering is a collection of fully open access journals published by Springer covering multiple engineering fields. It includes journals related to mechanical engineering, civil engineering, industrial engineering, and applied technology. Articles are peer-reviewed and freely accessible to support academic research and learning. The platform helps researchers access current developments and publish open access engineering research.

• Hindawi Engineering Journals – https://www.hindawi.com/subjects/engineering

Hindawi Engineering Journals provide open access publications across various engineering and applied science disciplines. The journals publish research articles, review papers, and technical studies that are freely available to users. The platform supports accessibility and dissemination of engineering knowledge worldwide. All articles can be accessed and downloaded without subscription.

• MDPI Engineering Journals – https://www.mdpi.com/subject/engineering

MDPI Engineering Journals include a wide range of open access journals covering engineering, technology, materials science, and industrial applications. These journals publish peer-reviewed research articles and review papers. The platform allows free access to full-text content, supporting research and academic study. It is useful for identifying current trends and developments in engineering disciplines.

• Open Engineering (De Gruyter) – https://www.degruyter.com/journal/key/eng/html

Open Engineering is a fully open access journal published by De Gruyter that covers multidisciplinary engineering research. It includes articles related to mechanical, civil, electrical, and industrial engineering fields. The journal publishes peer-reviewed research papers that are freely accessible online. It supports knowledge dissemination and academic research in engineering disciplines.

5.1.3. Open Access Engineering Magazines / Technical Reports

• NASA Technical Reports Server – https://ntrs.nasa.gov

NASA Technical Reports Server provides open access to technical reports, research papers, and engineering documentation produced by NASA. It covers aerospace engineering, mechanical engineering, and applied sciences. Users can download full-text documents freely. The platform is useful for advanced engineering research.

• NIST Publications – https://nvlpubs.nist.gov

NIST Publications provides open access to technical reports, standards, datasets, and research publications produced by the National Institute of Standards and Technology. The platform covers engineering, information technology, materials science, and industrial applications. These publications support research, experimentation, and technical reference work. All documents are freely accessible and downloadable for academic and professional use.

• CERN Document Server – https://cds.cern.ch

CERN Document Server is an open access repository that provides research publications, technical reports, conference papers, and multimedia resources produced by CERN and collaborating institutions. The platform includes materials related to engineering, physics, computing, and instrumentation. Users can search and download full-text documents freely. It is useful for advanced research and technical reference.

• Engineering Reports (Wiley Open Access) – https://onlinelibrary.wiley.com/journal/25778196

Engineering Reports is a fully open access journal published by Wiley that covers multidisciplinary engineering research. The journal publishes original research articles, technical papers, and review studies across various engineering fields. All articles are freely accessible and downloadable without subscription. The journal supports rapid dissemination of engineering research and academic communication.

5.1.4. Open Access Engineering E-Books

• Directory of Open Access Books (DOAB) – https://www.doabooks.org

Directory of Open Access Books (DOAB) provides access to peer-reviewed academic books published under open access licenses. It includes engineering textbooks, research monographs, and technical reference materials. Users can download full-text books without any subscription. The platform supports subject-based browsing and institutional publishing.

• IntechOpen (Engineering Books) – https://www.intechopen.com/subjects/engineering

IntechOpen is an open access publisher that provides peer-reviewed books in engineering, technology, and applied sciences. The platform offers chapters written by experts covering emerging engineering topics. All books are freely accessible and downloadable. It is useful for conceptual understanding and advanced research support.

• Open Textbook Library – https://open.umn.edu/opentextbooks

Open Textbook Library provides openly licensed textbooks for higher education, including engineering subjects. The books are peer-reviewed and can be freely accessed online or downloaded. The platform supports teaching, learning, and self-study. It is especially useful for students looking for foundational engineering materials.

• National Academies Press (Free PDFs) – https://nap.nationalacademies.org

National Academies Press provides free access to scholarly books and reports in engineering, technology, and applied sciences. The platform includes publications related to infrastructure, engineering education, industrial technology, and innovation. Most books are available for free PDF download, making it useful for academic study and research reference. The resource supports advanced learning and policy-related engineering research.

• Open Research Library – https://openresearchlibrary.org

Open Research Library is a comprehensive platform providing access to thousands of open access books across multiple disciplines, including engineering and technology. It aggregates scholarly publications from various academic publishers and institutions. Users can read and download books freely without subscription. The platform supports academic research and teaching.

5.1.5. Other Useful Engineering Open Resources

• arXiv (Engineering & Technology) – https://arxiv.org

arXiv is a subject repository that provides open access to preprints in engineering, computer science, mathematics, and related technical fields. It allows researchers to access early research findings, technical papers, and working manuscripts. The platform is widely used for staying updated with current developments in engineering disciplines. All documents are freely downloadable.

• NPTEL – https://nptel.ac.in

NPTEL (National Programme on Technology Enhanced Learning) offers free online courses in engineering, science, and technology developed by IITs and IISc. It includes video lectures, course materials, and assignments. The platform supports undergraduate and postgraduate engineering education. All course materials are freely accessible.

• MIT OpenCourseWare – https://ocw.mit.edu

MIT OpenCourseWare provides free access to course materials from the Massachusetts Institute of Technology. It includes lecture notes, assignments, and reading materials in engineering disciplines. The platform supports self-learning and academic reference. All resources are openly available without registration.

• OER Commons (Engineering materials) – https://www.oercommons.org

OER Commons is a digital library of open educational resources that includes engineering learning materials, modules, textbooks, and course content. The platform supports educators and students by providing reusable and openly licensed teaching materials. Users can browse resources by subject, education level, and format. All materials are freely accessible.

• Saylor Academy – https://www.saylor.org

Saylor Academy provides free online courses and learning materials in engineering, technology, and related subjects. The platform includes structured courses, reading materials, and assessments. It supports self-paced learning and academic skill development. All resources are openly available without subscription.

5.2. Open Access Resources for Management Scholars

5.2.1. Open Access Databases / Discovery Platforms

• Directory of Open Access Journals (DOAJ) – https://doaj.org

Directory of Open Access Journals (DOAJ) provides access to peer-reviewed open access journals in business, management, economics, and related disciplines. The platform supports subject-based browsing and advanced search options. Researchers can access full-text articles without

subscription barriers. It is useful for literature review and academic research.

• CORE – https://core.ac.uk

CORE aggregates open access research outputs from repositories and journals worldwide. It includes management, business, and economics-related research papers. Users can search and download full-text articles freely. The platform supports academic research and scholarly discovery.

• BASE – https://www.base-search.net

BASE provides access to open access academic resources from institutional repositories and journals. It includes management, business administration, and economics-related literature. Users can discover theses, articles, and conference papers. The platform is widely used for scholarly search.

• Semantic Scholar – https://www.semanticscholar.org

Semantic Scholar is an AI-powered academic search engine that provides access to open access research papers in management and business disciplines. It offers citation tracking, filtering, and topic-based search. Many articles include direct links to free full-text versions. The platform helps identify relevant scholarly content efficiently.

• OpenAIRE – https://www.openaire.eu

OpenAIRE provides open access to research publications, datasets, and reports in social sciences, including management studies. It aggregates content from institutional repositories and research projects. Users can search and access scholarly materials freely. The platform supports open science initiatives.

• Social Science Open Access Repository (SSOAR) – https://www.ssoar.info

Social Science Open Access Repository (SSOAR) is a freely accessible repository that provides full-text scholarly publications in social sciences, including business, management, and organizational studies. It contains journal articles, working papers, conference papers, and research reports contributed by academic institutions and researchers. The platform supports open access dissemination and long-term preservation of research outputs. Users can search, read, and download documents without any subscription or registration.

5.2.2. Open Access Management Journals / Publishers

• SpringerOpen Business & Management – https://www.springeropen.com/business-management

SpringerOpen provides open access journals in business, management, and entrepreneurship. Articles are peer-reviewed and freely available for download. The platform supports scholarly communication and research dissemination. It is useful for academic study and research reference.

• MDPI Business & Management Journals – https://www.mdpi.com/subject/business

MDPI publishes open access journals covering business, management, economics, and entrepreneurship. Articles are freely available and peer-reviewed. The platform supports current research dissemination. Users can access full-text content without subscription.

• SAGE Open – https://journals.sagepub.com/home/sgo

SAGE Open is a peer-reviewed open access journal covering management, business, and social sciences. It publishes research articles, review papers, and conceptual studies. All articles are freely available online. The platform supports interdisciplinary research.

• Journal of Open Innovation – https://www.jopeninnovation.com

Journal of Open Innovation is a fully open access scholarly journal that focuses on innovation management, entrepreneurship, business strategy, and technology management. The journal publishes peer-reviewed research articles, review papers, and conceptual studies relevant to management and interdisciplinary research. All articles are freely accessible, supporting academic learning and research dissemination. It is useful for scholars studying innovation, business development, and knowledge management.

• Business Research (SpringerOpen) – https://business-research.springeropen.com

Business Research is a peer-reviewed open access journal published under SpringerOpen that covers various areas of business and management studies. The journal includes research articles related to marketing, finance, operations, strategy, and organizational management. All published articles are freely available for reading and download. The platform supports scholarly communication and academic research in management disciplines.

5.2.3. Open Access Management Magazines / Reports

• World Bank Open Knowledge Repository – https://openknowledge.worldbank.org

World Bank Open Knowledge Repository provides open access books, reports, and working papers related to business, management, economics, and development studies. The platform supports policy research and academic learning. All documents are freely downloadable. It is useful for management research and case studies.

• OECD Open Reports – https://www.oecd.org

OECD Open Reports provide open access to policy papers, statistical reports, working papers, and analytical publications related to economics, business, management, and public policy. The platform covers topics such as organizational management, economic development, innovation, governance, and industry studies. These reports are useful for management scholars seeking case studies, global policy perspectives, and research data. Many publications are freely accessible and downloadable for academic use.

• UN Digital Library (Open reports) – https://digitallibrary.un.org

UN Digital Library provides open access to reports, publications, and documents related to management, economics, and global development. The platform includes policy documents and analytical reports. Users can access full-text documents freely. It supports academic and research activities.

• ILO Publications – https://www.ilo.org/global/publications

ILO Publications provides open access to research reports, working papers, policy documents, and statistical studies published by the International Labour Organization. The platform covers topics related to management, human resource development, labour economics, organizational behaviour, and workplace studies. These resources are useful for management scholars seeking global perspectives and empirical research. Many publications are freely accessible and downloadable for academic and research use.

5.2.4. Open Access Management E-Books

• Directory of Open Access Books (DOAB) – https://www.doabooks.org

DOAB provides access to open access academic books in business, management, and economics. The books are peer-reviewed and freely downloadable. The platform supports academic teaching and research. Users can browse by subject area.

• Open Textbook Library (Business) – https://open.umn.edu/opentextbooks

Open Textbook Library provides openly licensed textbooks in business and management subjects. The books are peer-reviewed and freely accessible. The platform supports teaching, learning, and self-study. Users can read online or download full text.

• Bookboon (Free academic books) – https://bookboon.com

Bookboon provides free academic textbooks and professional e-books in business, management, economics, and related disciplines. The platform offers student-oriented materials such as leadership, marketing, finance, and organizational behaviour. Books are written by subject experts and designed for academic learning and skill development. Many student textbooks are freely accessible online for reading and download.

• Open Research Library – https://openresearchlibrary.org

Open Research Library is a digital platform that provides access to thousands of open access academic books across various disciplines, including business and management. It aggregates publications from multiple academic publishers and institutions worldwide. Users can read and download full-text books without any subscription. The platform supports teaching, learning, and research activities.

• Saylor Academy Books – https://www.saylor.org/books

Saylor Academy Books offers openly licensed textbooks and learning materials in business and management subjects. The platform includes books on marketing, management, economics, and entrepreneurship. These resources are designed for higher education and self-paced learning. All books are freely accessible and can be used for academic study and teaching.

5.2.5. Other Useful Management Open Resources

• SSRN (Open working papers) – https://www.ssrn.com

SSRN (Social Science Research Network) is an open access repository providing working papers in management, business, economics, and social sciences. It allows researchers to access early research findings and discussion papers. The platform supports knowledge sharing and scholarly communication. Most papers are freely downloadable.

• RePEc (Economics & Management) – https://repec.org

RePEc (Research Papers in Economics) is an open access database providing research papers in economics, business, and management. It includes working papers, journal articles, and bibliographic records. The platform supports academic research and literature discovery. Many documents are available for free download.

• OER Commons (Management) – https://www.oercommons.org

OER Commons is a digital repository of open educational resources that includes learning materials in business, management, economics, and entrepreneurship. The platform provides textbooks, case studies, course modules, and instructional content for academic use. Resources are openly licensed and can be reused for teaching and learning purposes. Users can search materials by subject, education level, and format.

• OpenLearn – https://www.open.edu/openlearn

OpenLearn is an open learning platform developed by The Open University that provides free courses and learning materials in business and management disciplines. It includes short courses, articles, and interactive learning resources. The platform supports self-paced learning and professional development. All materials are freely accessible without subscription.

• MERLOT (Business resources) – https://www.merlot.org

MERLOT is an open educational resource platform that provides teaching and learning materials in business and management subjects. It includes case studies, course content, simulations, and instructional modules. The resources are peer-reviewed and freely accessible. The platform supports academic teaching, learning, and curriculum development.

6. Discussion

The identified open access resources play a significant role in supporting academic development among engineering and management scholars by providing unrestricted access to scholarly literature, technical reports, learning materials, and research outputs. These platforms help users access current information necessary for coursework, research projects, innovation, and professional development. The categorization of resources into databases, journals, e-books, repositories, and educational platforms improves discoverability and ease of use. Open access resources also reduce dependence on costly subscription databases, particularly for institutions with limited financial support. Furthermore, these

platforms promote interdisciplinary learning and global knowledge sharing. The availability of diverse open access resources enhances research visibility, supports self-directed learning, and contributes to digital equity in higher education environments.

Benefits of Open Access Resources for Engineering and Management Scholars

Open access resources offer several benefits for engineering and management scholars by providing free and unrestricted access to academic information. These resources support literature review, research activities, and project development by enabling access to scholarly articles, technical reports, and learning materials. Open access platforms enhance academic productivity by allowing users to explore global research output without financial barriers. They also support interdisciplinary learning and innovation by providing access to diverse subject areas. Additionally, open access resources help students and researchers from financially constrained institutions access quality information. The availability of open textbooks and course materials further supports teaching and self-learning. Overall, open access resources promote digital equity and improve knowledge dissemination in engineering and management disciplines.

7. Challenges in Using Open Access Resources

Despite their advantages, open access resources present certain challenges for users. One of the major issues is the scattered availability of resources across multiple platforms, making it difficult for users to identify relevant sources. There is also variation in the quality of open access publications, and users may encounter predatory journals lacking proper peer review. Limited awareness among students and researchers further reduces effective utilization of open access resources. Some platforms provide incomplete metadata or multiple versions of the same document, creating confusion during literature search. Additionally, lack of proper training in using open access tools may affect search efficiency. These challenges highlight the need for proper guidance and structured resource lists to support effective use.

8. Role of Libraries in Promoting Open Access Resources

Libraries play a crucial role in promoting the effective use of open access resources among engineering and management scholars. Academic libraries can create subject-wise guides listing reliable open access databases, journals, and repositories. Librarians can conduct awareness programmes, orientation sessions, and workshops to educate users about freely available scholarly resources. Libraries can also integrate open access platforms into library websites and discovery systems to improve accessibility. Institutional repositories developed by libraries further support open access publishing and knowledge sharing. In addition, librarians can provide research support services by guiding users in identifying quality open access sources. Through these initiatives, libraries contribute to improving information access and promoting digital equity in academic institutions.

9. Recommendations and Suggestions

To improve the effective utilization of open access resources, institutions and libraries should undertake several initiatives. Libraries should prepare subject-specific open access resource lists for engineering and management disciplines. Awareness programmes and training sessions should be conducted to familiarize users with available platforms. Faculty members should encourage students to use open access literature for assignments and research projects. Institutions may integrate open access resources into curriculum and learning management systems. Development of institutional repositories should also be promoted to support knowledge sharing. Additionally, librarians should provide research assistance in identifying reliable open access journals and databases. These measures will enhance accessibility, improve research productivity, and promote digital equity among engineering and management scholars.

10. Conclusion

Open access resources have become essential tools for supporting academic development in engineering and management disciplines. The availability of freely accessible journals, repositories, databases, and educational platforms enables scholars to access current and relevant

information without financial constraints. These resources promote digital equity by ensuring equal access to scholarly knowledge. The categorized listing of open access platforms helps users easily identify appropriate resources for research and learning. Although certain challenges exist, proper awareness and library support can improve effective utilization. Open access resources also enhance research visibility, encourage collaboration, and support innovation. Therefore, the adoption and promotion of open access resources are important for strengthening academic and research activities in engineering and management education.

References

Bagiati, A., Yoon, S. Y., Evangelou, D., & Ngambeki, I. (2010). Engineering curricula in early education: Describing the landscape of open resources. Early Childhood Research & Practice, 12(2), 1–15.

Bailey, C. W., Jr. (2006). What is open access? [Preprint]. http://www.digital-scholarship.org/cwb/whatisaoa.htm

Mahajan, R., Gupta, P., & Singh, T. (2019). Massive Open Online Courses: Concept and implications. Indian Pediatrics, 56(6), 489–494.

Piedra, N., Chicaiza, J., Lopez, J., & Tovar, E. (2015). Seeking Open Educational Resources to compose Massive Open Online Courses in engineering education: An approach based on Linked Open Data. Journal of Universal Computer Science, 21(5), 679–711.

Shah, M., & Cheng, M. (2019). Exploring factors impacting student engagement in open access courses. Open Learning: The Journal of Open, Distance and e-Learning, 34(2), 187–202. https://doi.org/10.1080/02680513.2018.1508337

Willinsky, J. (2006). The access principle: The case for open access to research and scholarship. MIT Press.