
Strategies Used by University Libraries to Support Research needs of Masters and Doctor of Philosophy Students

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Abstract

University libraries ought to use structured instructional strategies to help students carry out quality research. However, the strategies used by libraries to provide post graduate students with research support services in Kenyan universities are not at the desired level. This study investigated the strategies used by university libraries to provide post graduate students with research support services in Kenyan universities. The study used survey research design and convergent parallel mixed methods research approach. Two universities in Kenya namely the University of Nairobi (UoN) and Egerton University (EU) took part in the survey. Quantitative data was collected through questionnaire administration from a stratified random sample of 404 fourth-year postgraduate students. Qualitative data was obtained from 2 members of the University Management Board, 2 members of the Directors of Board of Graduate studies, 15 faculty members, 2 university Librarians and 10 senior library staff members who were all purposively selected as key informants of the study. Quantitative data was analyzed using descriptive statistics and qualitative data was analyzed thematically. The study established that the university libraries had adopted various strategies aimed at supporting research and the strategies slightly improved beyond basic delivery of manual services to hybrid service models that combine digital and physical access. However, research support discrepancies were experienced. Ultimately, the study recommends measures to alleviate these challenges and make research support services more effective in supporting postgraduate students' research.

Keywords:

Libraries, research, support, strategies, university

Introduction

Research is regarded as an epitome of university success in academic landscape and it is vital that universities carry out quality research to remain relevant and compete globally. University libraries provided printed material information, reference services, database management systems, web portals, electronic documents, information management, training, and organized workshops, conferences and seminars as strategies to support research (Haq and Jan, 2025 and Das and Banerjee, 2021). Modern academic libraries provide guidance on navigating AI tools responsibly, verifying AI-generated citations, and distinguishing peer-reviewed literature from preprints. University libraries use various instructional and digital strategies to guide students and researchers through every stage of the research process, from topic selection to final

citation. They provide asynchronous video modules, quizzes, and live webinars. They teach foundational skills like avoiding plagiarism, using Zotero/Mendeley, and Boolean searching. University libraries also offer digital and scalable tools, one-on-one research consultations which may be virtual or in-person offer personalized guidance for selecting topics, refining search strings, and navigating discipline-specific databases. Digital and Scalable Tools comprise of research guides, interactive tutorials and workshops, Artificial Intelligent and search literacy support. Curated online pathfinders organize recommended databases, journals, citation styles, and contact information by specific course or subject area.

The structured instruction strategies ought to be used by university libraries comprise of core instructional strategies and digital and scalable tools. University libraries should use structured instructional strategies such as information literacy integration, embedded librarianship, information communication technologies, web-based resources, digital information resources, reference, universities research resource collaborations and consultation services to help students carry out quality research. However, the strategies used by libraries to provide research support services to postgraduate students are not at the desired level. Besides, the literature reviewed in this study that is related to strategies used by university libraries to support research exhibits gaps. Most of the studies focused more on physical infrastructure, traditional user satisfaction, basic challenges, over-rely on single research methodologies. They ignore longitudinal tracking of service impacts, clear conceptual gaps regarding modern digital workflows, institutional integration, service quality models from systematic operational contexts, specialized research needs and application of integrated theoretical frameworks to library-based research support.

This study enhances understanding of how effective Kenyan libraries are supporting research; extends conventional methods of assessing library effectiveness in supporting research by integrating multiple respondent groups such as students, librarians, directors, and library staff within a single analytical framework guided by Ludwig von Bertalanffy's Systems Theory; advances knowledge in the field of library and information science by reframing university libraries from passive service entities into active agents of educational innovation within Kenya's evolving higher education landscape; provides a governance and implementation focused framework for repositioning university research support services within Kenya's dynamic educational landscape, offers an understanding by reinterpreting the dynamics of research support adoption in university libraries from a user-centered perspective; and by applying Ludwig von Bertalanffy's Systems Theory to Kenyan university libraries will reveal that the whole system is greater than the sum of its parts because the relationships between the parts create unique behaviors and outcomes. The purpose of this study was to assess the strategies used by university libraries to support postgraduate students' research in Kenya with a view of formulating evidence-based strategies for strengthening the research support so that interventions can be put in place to help researchers to carry out quality researches, generate knowledge, map user feedback to performance matrix, close operational discrepancies and help the library to run as an interconnected ecosystem.

Literature Review

Strategies that libraries have put in place to support the needs of researchers

Library programs are activities that are organized in sessions which support learning, teaching and research. Library services are activities offered by the library users upon request and need. Library resources are items, documents and data services offered by the library that support learning, teaching and research.

Square (2024) reported that library professionals were not effective in supporting research needs. In the same breath, Ashiq *et al* (2018) opined that library staffs were unskilled in handling digital information and were not adequately prepared to support the research needs.

Haq and Jan (2025), Das & Banerjee (2021) and Enakrire & Onyancha (2020) noted that libraries provided written material information, reference services, database management systems, web portals, electronic documents, information management, training, and organized workshops, conferences and seminars as strategies to support research. Ndege *et al.* (2025) conducted a study that examined the information services libraries provide to support implemented blended learning in selected public universities in Kenya. The study revealed that virtual reference services and access to electronic resources were the prominently library services supporting blended learning. Yoon and Schultz (2017) added that libraries offered data collection and analysis to support research needs. However, these strategies were found to be inadequate and therefore not effective as required. Obura and Emoti (2024) reported that the strategies adopted by libraries to support research were ineffective. Corpuz (2020) and Pasipamire & Hoskins (2019) asserted that library services have been ineffective and did not meet the current requirements of research support.

Seizing Informal Scholarly Communications

University libraries have no option other than to realign its services to fit new researcher work habits to avail flexible and adaptable content and services. Currently, the research world is witnessing a lot of informal peer-to-peer communication within the research community. A study conducted by Hiremath *et al.* (2023) revealed that researchers are adopting social networking technologies very fast and that so far, they have done so on their own effectively by-passing libraries. Muuduli *et al.* (2025) puts this into perspective by alluding to the libraries Business and Service Model which is evolving from acquiring, cataloging and circulating physical collections to synthesizing, specializing and mobilizing Web-based services.

Information Literacy programs

Both librarians and researchers agree that librarians have a noble duty of providing expert advice and teaching on information literacy. However, researchers have a feeling that libraries will need to ensure that effort is put into securing significant take-up of their expertise and advice by the research community (Hiremath *et al.*, 2023).

Provision of Seamless Digital Information

Provision of unhindered access to the library's digital information necessitated by technological advancements is very critical. Libraries should continually build their digital collections by putting together data from different sources and evaluating its usefulness. Sawe and Musangi (2023) conducted a study that assessed the sustainability of modes of teaching. Library skills, and resources required for information literacy delivery in university libraries in Kenya during COVID-19 period. The study revealed that the success of online mode of teaching was affected by the inaccessibility of the required resources, unpreparedness of the libraries and students as well as demand for new skills. Masese (2024) conducted a study that evaluated utilization of electronic materials by postgraduate scholars in selected educational libraries in Kisii County. The study revealed that scholars retrieved online resources mainly through their personal effort and accessed e-resource from home or working place due to busy

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work schedule. Maina *et al.* (2017) conducted a study that examined the usage and user satisfaction of library resources in Kisii University library and found out that both library staff and users embraced automation, better marketing of library resources and user training done. A study by Memusi (2022) that identified the existing problems in the utilization of electronic information resources and how they were being accessed by undergraduate students in public universities in Kenya revealed that a range of e-resources were available at Maasai Mara University for student to access. Sawe et al. (2024) Conducted a study that focused on availability of Research Support Services (RSS) and doctoral students' satisfaction with RSS provided in public university libraries in Kenya. The study revealed that a wide range of RSS services were provided in selected universities and that while doctoral students were satisfied with the availability of the materials, they were not happy with the currency of the materials in the university libraries. In another paper authored by Sawe *et al.* (2024) that examined approaches used by university libraries to enhance the visibility and utilization of research support services among doctoral students and the competencies of library staff in delivering research support resources, it was revealed that offline and online strategies, the need for upskilling and professional development programs and practice empowerment were the approaches used by university libraries to enhance visibility and utilization of research services. A study by Kavila et al. (2024) that examined how postgraduate students utilized institutional repositories to support the academic needs revealed that digital repository had a significant positive effect on library utilization.

Discovery and access

Discovery systems widely used in university libraries include but are not limited to; catalogs, institutional archives, federated search mechanisms, resource-sharing systems, Electronic Record Management (ERM) and Online Public Access Catalog (OPACS) systems. Librarians ought to ensure its remote users aptly access its huge volumes of digital content by utilizing enabling software such as EZ-Proxy. This will avail subscribed electronic resources to all users without being forced to physically visit the physical libraries to access or use such content.

There is a tendency by researchers to use Google as one of discovery and access tools because it delivers to them the results they believe are satisfactory to them. A study conducted by Alotaibi *et al.* (2023) reveal that over 70% of researchers routinely use Google to find scholarly content. This implies that librarians need to come up with discovery tools that in a way attract researchers to the library. Such discovery and access tools should favorably compete or even out do Google. Web search engines in future will be able to find every type of content through personalized services delivered to user's mobile devices. Rao *et al.* (2025) reported that the future of web search engines poses some questions on how libraries will be able to weave such developments into their own services. They testified that prediction happened more than ten years ago and for sure this has been to some extent fulfilled although libraries in Kenya which appears to be struggling.

Collaboration

Are university libraries collaborating? If yes with who and to what extent and on which areas? Hiremath et al. (2023) state that Collaborative work will continue and has proven successful, and local collaborative acquisition and mutual document delivery or borrowing schemes may be the response to some of the collection growth challenges.

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Scholarly communication has changed dramatically in the digital age, and scholarly networks are being formed more rapidly than in the past. Libraries must adapt accordingly and provide programs that are better suited to these changes (Gabbay & Shoham, 2017).

Physical resources

These are resources that pulls researchers to the university libraries. Hiremath et al. (2023) highlights the following resources as critical:

Convenient Location

University libraries provide convenience to the researchers. A place where they walk in anytime and carry out research with ease.

Flexible and convenient opening hours

Libraries should operate convenient opening hours to its researchers at all times. Libraries should be places for browsing current issues of printed publications, places for quiet individual study, places for provision of modern IT infrastructure to access digital resources, places for provision of high-quality buildings and associated infrastructure, places for group study and learning and meeting and places for networking space.

Methodology

This study conducted through a survey research design and adopted a convergent parallel design mixed research method analysis methodology since the researcher was engrossed with providing quantitative, qualitative and numeric descriptions of a target population. Purposive, stratified and simple random sampling techniques were used to select the sample for the study. The study was conducted in two (2) public universities. The population for the study included eighteen (18) members of the University Management Board, two (2) members of the Directors of Board of Graduate studies, forty-two (42) faculty members, two (2) university Librarians, thirty-eight (38) senior library staff members, one hundred (100) Doctor of Philosophy students and, three hundred and four (304) Masters students. One questionnaire and one interview schedule were used to collect data for the study. The questionnaire was for Masters and Doctor of Philosophy students. The questionnaires were structured closed-ended questions and unstructured and open-ended questions. The interview schedule instrument was used to collect data from members of University Management Board, Directors of Graduate Studies, University Librarians, Senior Library Staff and members of academic Faculty Staff. The questionnaires were administered to four hundred and four (404) students. The interview schedules were used to interview eighteen (18) members of the University Management Board, two (2) members of the Directors of Board of Graduate studies, forty-two (42) faculty members, two (2) university Librarians, thirty-eight (38) senior library staff members. The questionnaires were analyzed which gave satisfactory internal consistency reliable coefficient value of 0.8001. The researcher obtained a research permit from the National Council for Science and Technology and Innovation (NACOSTI). The researcher also sought for permission from the Ministry of Education Science and Technology and the Nairobi County Government which allowed him to collect data in the selected universities. Finally, researcher administered questionnaires to Masters and Doctor of Philosophy students. Also, the researcher interviewed the University Management Board, members of the Directors of Board of Graduate studies, faculty members, university Librarians and senior library staff members.

Descriptive statistics were used to analyze the data. The data was analyzed using the Statistical Package for Social Sciences (SPSS).

Ethical Consideration

Research permit was sought from the Ministry of Education Science and Technology. Clearance from the participating institutions was sought. Respondents were approached and explained on the aim and importance of carrying out this research to enable them provide an informed consent. Besides this, the respondents were assured that the information they provided was treated with confidentiality and that it was used strictly for learning purposes only. This was achieved by anonymizing the respondents by the use of codes. Data collection instruments were pre-tested in an attempt to ensure that appropriate questions are asked. Data collected was presented and analyzed as accurately as possible. The researcher at all times scheduled administration of data collection instruments at the respondent's convenient times.

Results

Strategies that university libraries have put in place to support the needs of researchers

The University Librarians and senior library staff were asked to identify the strategies that their respective libraries have put in place for the support of research activities. Interviewees gave varied responses most of which cut across the two universities as illustrated by the words of a few of the interviewees given below.

UL, 1(Personal communication, March 2, 2021)

We liaise with faculty members in selecting research related materials to be purchased for use in the library and coordinating the library staff to help the learners access research resources and information.

UL, 2(Personal communication, March 2, 2021)

We have equipped the library with current e-books, Ask a Librarian feature, e-journals, the use social media to share and access data and information, access of e-resources to remote user, uninterrupted internet connectivity and requested for more allocation of resources to the libraries to support research related activities.

SLS, 1(Personal communication, March 2, 2021)

Our libraries offer Current Awareness Services, Selective Dissemination of Information to its post graduate students, users training on referencing tools, librarians refresher courses on varied courses on current technology and emerging issues related to research, students' library user orientation and training on referencing and citation, electronic library resources access, publishing, and the faculty members teach learners on how to access research resources.

SLS, 2 (Personal communication, March 2, 2021) (2021)

We participate in research data management, selection and disseminating of information, directing students to research resources and forging of partnership with other libraries and supervised the access of research resources.

From the above data, a summary of the strategies used by the two libraries is given in Table 1.

Table 1

Strategies used by librarians to support research

STRATEGIES		
No.	UNIVERSITY OF NAIROBI	EGERTON UNIVERSITY
1.	Liaised with faculty members in selecting research related materials to be purchased for use in the library	Working together with faculty members in selecting research related materials to be purchased for use in the library
2.	Coordinating the library staff to help the learners access research resources and information	Mobilized library staff to help the learners access research resources and information.
3.	They have also equipped the library with current e-books, Ask a Librarian feature, e-journals, the use social media to share and access data and information, access of e-resources to remote user, uninterrupted internet connectivity.	They furnished the library with recent e-books, e-journals, the use social media to share and access data and information, Ask a Librarian feature, access of e-resources to remote user, uninterrupted internet connectivity.
4.	They suggested for more allocation of resources to the libraries to support research related activities.	They recommended for the allocation of more resources to the libraries to support research related activities.
5.	The libraries offer users training on referencing tools, librarians refresher courses on varied courses on current technology and emerging issues related to research.	The libraries provide users with training on referencing tools, emerging issues related to research and librarians' refresher courses on varied courses on current technology.
6.	They offered students' library user orientation and training on referencing, electronic library resources access and publishing.	They organized students' library user orientation and training on electronic library resources access, referencing, and publishing
7.	The faculty members taught learners on how to access research resources, referencing, quoting and citation. The libraries offered Current Awareness Services (CAS) and Selective Dissemination of Information (SDI) to its post graduate students.	The faculty staff trained learners on how to quote and cite, reference and access research resources. The libraries presented Current Awareness Services (CAS) and Selective Dissemination of Information (SDI) to its post graduate students.
8.	Supervised the access of research resources.	
9.	The senior library staff participated in research data management, directing students to research resources and forging of partnership with other libraries	

Source: Authors research data from the field

Table 1 revealed that both University of Nairobi and Egerton University had put in place strategies used by librarians to support research. However, University of Nairobi had slightly more strategies than Egerton University. Specifically, the two university librarians indicated that they liaised with faculty members in selecting research related materials to be purchased for use in the library and mobilized library staff to help the learners access research resources

and information. All universities said they equipped the libraries with current e-books, e-journals, the use social media to share and access data and information, Ask a Librarian feature, access of e-resources to remote user, uninterrupted internet connectivity. All universities libraries allocated more resources to the libraries to support research related activities. All universities libraries offered users training on referencing tools, librarians refresher courses on varied courses on current technology and emerging issues related to research. All universities libraries organized students' library user orientation. The senior library staff of all universities participated in training on electronic library resources access, citation, referencing, publishing and write footnotes. The faculty members in all universities taught learners on how to access research resources, referencing, quoting and citation. The libraries offered Current Awareness Services (CAS) and Selective Dissemination of Information (SDI) to its post graduate students. Only University of Nairobi librarians supervised the access of research resources and its senior library staff participated in research data management, selection and disseminating of information, directing students to research resources and forging of partnership with other libraries.

Furthermore, the study established that the librarians lacked adequate knowledge on learning models, provision of references services to all library users, sensitization of researchers on current research trends, and ability to embrace emerging Information Communication Technology in research. Therefore, the librarians were not prepared enough in supporting students in research process.

Summary of Findings

The university libraries put in place current e-books and journals and used social media to enable researchers to share and access e- resources remotely; provided uninterrupted internet connectivity, Current Awareness Services, Ask a Librarian feature, Selective Dissemination of Information, research data management, users training on referencing tools, librarians refresher courses, students' library user orientation and training on referencing and citation; offered publishing, access to research resources and forged partnership with other libraries to support the needs of researchers. Both University of Nairobi and Egerton University put in place strategies used by librarians to support research. However, University of Nairobi had slightly more strategies than Egerton University. Only University of Nairobi librarians supervised the access of research resources and its senior library staff participated in Research Mata Management, Selective Dissemination of Information, directing students to research resources and forging of partnership with other libraries. Research consultation services, electronic books, electronic journals and research organization services offered in the libraries were not effective in supporting research. Current awareness services, selective dissemination of information, research data management and reference services were effective in supporting research.

According to Samim and Noori (2024), research journal papers are the most accessible, appropriate and essential source of scientific knowledge for university faculty members who use them most extensively for research and teaching purposes.

Discussion and Interpretation of Findings

The findings revealed that Kenyan university libraries provide access to printed material like books and periodicals, electronic resources such as e-journals, e-books and online databases.

This is in agreement with Sawe et al. (2024) who indicated that a wide range of research support materials were provided by university libraries. These are acquired mainly through library consortia such as Kenya Libraries as KLISC.

A study conducted by Haq and Jan (2025) that systematically analysed Research Support Resources (RSS) in academic libraries through comprehensive scholarly review established that libraries progressively increased literature on RSS, with recent focus areas including research data management, bibliometric services, citation management, data curation, bibliometric analysis, support for scholarly communication and open access. However, the study established that there are disparities since well-funded universities have wide access while less funded universities face subscription limitations. This finding aligns with Bello & Chumba (2016) and Odularu and Bokwe (2025) who observed that African university libraries have increasingly adopted electronic resources to support research but unequal access reflects persistent funding challenges. The study further established that Kenyan universities have institutional repositories for storing and disseminating research outputs. These institutional repositories enhance research visibility and accessibility, contributing to scholarly communication (Mahalingam and Vijayakamar, 2025). Studies by Agbanu and Ezekwibe (2025); Ramadhan *et al.* (2025) and Odong *et al.* (2025) revealed that citation database, information on new arrivals, orientation programs, plagiarism check, grammar and paragraphing check and research space were the research support services university libraries offered to their users. Haq and Jan (2025) who conducted a comprehensive review of scholarly literature revealed that university libraries have progressively increased in literature for research support services, with a recent focus on areas including research data management, data curation, bibliometric analysis and support for scholarly communications. A study conducted by Njagi (2025) that sought to assess the knowledge and key competencies of librarians in the context of research data management; collaborative partnerships; structure that drives research management, policy and legal framework; and data architecture model which libraries could adopt to support RDM activities revealed that Egerton university had high level of knowledge, skills, and competencies in RDM. However, Njagi rejoined that the effectiveness of RDM depends on consistent content submission and awareness among users. The study also revealed that libraries offer information literacy training to equip users with research skills. A study carried out by Shao et al. (2023) established that information literacy is essential for effective utilization of research resources. However, the study found that training programmes are not fully institutionalized, limiting their effectiveness. The study also established that libraries offered research support services including reference and consultation, plagiarism detection support, user orientation programme and remote access services. These services are consistent with modern academic library roles in supporting research. Haq and Jan (2025), Das & Banerjee (2021) and Haq and Jan (2025)) are all in agreement with these findings that libraries provided written material information, reference services, database management systems, web portals, electronic documents, information management, training, and organized workshops, conferences and seminars as strategies to support research. Yoon and Schultz (2017) added that libraries offered data collection and analysis to support research needs. Siddiqui (2025) underscored that libraries have implemented a digital strategy aimed at enhancing digital engagement and access of resources and online services such as virtual reference assistance, research assistance, digital collection, information sharing and online modules. Mildred (2017) concurred that libraries offer services such as library orientation, circulation services, location of library material services, reading space and a face-to-face interaction to help them to carry out quality researches.

Conclusion

Strategies for supporting research in Kenyan university libraries have been slightly improved beyond basic delivery of manual services to hybrid service models that combine digital and physical access. This steady development typifies Systems Theory concept of adaption, goal attainment, pattern maintenance, and integration over the traditional approaches that have been overtaken by time and technological advancement. However, research support discrepancies especially insufficient internet connectivity, librarians' inadequate knowledge on research support, inadequate database access, limited library spaces and low library acquisition budget.

Recommendations

Universities should shift from being primarily "book repositories" to active, technology-driven research partners across the entire research lifecycle by implementing a specialized, user-centric, and digitally-enabled research support service model that targets the unique, high-level needs of postgraduate researchers.

The universities should implement targeted technology-driven research services, like Artificial Intelligent (AI) tools, specialized workshops, and embedded librarian research support; foster collaborations with faculty, promote open access, and enhance remote access to e-resources and evolving research needs.

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Authorship Statement

Benjamin Butuk: Idea generation, Writing, Editing, Data Collection and Analysis
Duncan Amoth & Elsebah Maseh: Supervision, Review and Endorsement

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Declaration of Competing Interests

The authors declare no conflict of interest.

Ethical Approval and Research License

Permission was granted by the National Commission for Science, Technology, and Innovation (NACOSTI) for a research permit, in compliance with Science and Technology Act, Chapter 250, Laws of Kenya. Since data was being collected from Egerton University, and the University of Nairobi, permission was sought from the two institutions and it was granted. The respondents were assured that the data collected was going to be used strictly for its intended purpose and that their identities would not be revealed.

Licensing Statement

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