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Establishing Institutional Repositories as Catalyst to Advance Research Output in Academic Institutions

Yaw Akwoyire Aviamu*[1], Agyemang Badu Boateng[2], Simon Ameyaw[3], Veronica Opoku[4], Beatrice Arthur[5]

*Prempeh II Library, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
*Correspondence E-mail: yaaviamu.lib@knust.edu.gh

Abstract

This study explored the establishment of Institutional Repositories in academic institutions in Ghana to enhance research output. A mixed-methods approach was used to gather data through questionnaires and interviews from the topmost Ghana's Colleges of Education. Using stratified random sampling technique 365 respondents, comprising administrators, lecturers, and librarians were selected for the study. The study aimed to assess the awareness, expertise, and challenges associated with Institutional Repository creation in academic institutions. The findings revealed that while there was a general awareness of Institutional Repository, funding and technical expertise were major obstacles. The results aligned with previous research, emphasizing the importance of human and financial resources for Institutional Repository success. Managers in Ghana's academic institutions would find the results useful to prioritize Institutional Repository awareness campaigns. Higher education policymakers and stakeholders in Ghana would make Institutional Repositories a national policy and provide adequate training and funding to support implementation of Institutional Repositories.

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INTRODUCTION

Institutional repositories (IRs) have become important components of scholarly communication and research information management in higher education institutions (Dzandza, 2020; Gajbhiye, 2025). An IR provides a digital infrastructure for collecting, organizing, preserving, and disseminating an institution's intellectual output, including journal articles, theses, dissertations, conference papers, and other scholarly materials. Beyond functioning as digital storage facilities, IRs support research accessibility, institutional visibility, and long-term knowledge preservation (Rothfritz et al., 2026). Their development reflects the growing recognition of open access as an essential mechanism for expanding the dissemination and discoverability of academic research, particularly in environments where access to scholarly resources remains uneven (Adam & Kaur, 2022; Ghogare et al., 2025).

The institutional significance of IRs extends across three interconnected functions: digital preservation, research accessibility, and scholarly communication. By providing

organized and searchable access to institutional publications, repositories facilitate knowledge sharing among researchers, students, and the broader academic community (Asadi et al., 2019; Santos-Hermosa, 2023). They also contribute to institutional knowledge management by preserving intellectual assets that might otherwise remain dispersed across individual departments or inaccessible digital environments (Dlamini & Snyman, 2017). Nevertheless, effective repository implementation requires more than establishing a technological platform. Sustainable operation depends on appropriate preservation procedures, institutional policies, staff expertise, and continuing participation from academic contributors.

The expansion of institutional repositories has consequently influenced how universities manage and disseminate their research outputs. Digital repositories can improve the discoverability of scholarly materials and provide institutional channels for sharing research beyond conventional publication platforms. Their preservation functions are particularly important for maintaining the integrity, accessibility, and long-term usability of digital scholarly records (Islam et al., 2020). However, repository availability alone does not guarantee meaningful utilization. Effective participation requires institutional commitment, reliable infrastructure, appropriate content management practices, and researchers' willingness to deposit their scholarly work. These requirements suggest that repository development should be examined as an organizational and socio-technical process rather than exclusively as a technological intervention.

Understanding the potential contribution of IRs also requires consideration of research output as a multidimensional construct. Research output generally encompasses scholarly products generated through academic investigation, including publications and other documented contributions to knowledge. Its evaluation may involve productivity, research quality, and the dissemination or influence of scholarly work (Azmeh, 2022; Demetres et al., 2020). Research assessment literature further distinguishes publication-related indicators from broader dimensions of intellectual and societal contribution (Carradore, 2022; Patil et al., 2025). Although publication counts and citation-based measures remain prominent indicators, they cannot fully represent the value or practical relevance of academic research (Dube, 2025; Stock et al., 2023).

The relationship between research production and societal development further illustrates why accessibility and relevance matter. Research output may contribute to economic and social development when scholarly knowledge is applicable to institutional, professional, or societal needs. Open access can expand the range of audiences engaging with scholarly publications and potentially strengthen their visibility and citation diversity (Huang et al., 2024; Kapiszewski & Karcher, 2020). Similarly, research and development activities contribute to innovation systems when supported by appropriate institutional and technological conditions (Sarpong et al., 2023; Shejule, 2024). Within this broader context, IRs should be understood primarily as infrastructures supporting the preservation, accessibility, and dissemination of research rather than mechanisms that independently generate higher research productivity.

In Africa, institutional repository development presents both opportunities and persistent implementation challenges. Universities in countries such as Nigeria and Kenya have undertaken initiatives to improve the management and visibility of institutional research through digital repositories (Anene et al., 2020; Jelagat et al., 2021). Nevertheless, inadequate funding, insufficient technical expertise, limited infrastructure, and

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inconsistent institutional support have constrained the development and sustainability of repository services (Dlamini & Snyman, 2017). These challenges are particularly relevant where institutions must balance technological investment with competing educational and administrative priorities. Comparative research across African institutions further emphasizes the importance of organizational readiness, appropriate policies, and sustained institutional commitment (Shenton, 2022). Consequently, successful IR development requires examining both the perceived benefits of repositories and the practical conditions necessary for their establishment.

The Ghanaian higher education context provides a particularly relevant setting for investigating these issues. The transformation of teacher training institutions into Colleges of Education (CoEs) established their status as tertiary institutions with expanding academic and professional responsibilities (Kodua-Ntim, 2021; Republic of Ghana, 2012). Under the Colleges of Education Act, 2012 (Act 847), research, including basic and action research, forms part of the institutional mandate for improving teacher education. This development reinforces the importance of systematically managing and disseminating scholarly materials generated by lecturers, students, and other academic contributors (Ebrahim & Bong, 2019).

As CoEs increasingly undertake research-related responsibilities, IRs may provide institutional mechanisms for preserving academic outputs, improving their discoverability, and facilitating scholarly exchange. The development of such infrastructure is consistent with wider discussions concerning institutional research management and technological modernization in higher education (Joshi, 2024). Moreover, evidence from Ghanaian universities indicates that repository utilization depends on awareness, accessibility, perceived usefulness, institutional policies, and support mechanisms (Kodua-Ntim & Fombad, 2020; Santos-Hermosa, 2023). Nevertheless, findings derived from universities cannot automatically be generalized to CoEs, which may differ in institutional mandates, research cultures, staffing arrangements, and technological capabilities.

Despite growing research on IR development and implementation in African universities, context-specific evidence concerning their establishment in Ghanaian CoEs remains comparatively limited (Anene et al., 2020; Dlamini & Snyman, 2017). Existing research provides valuable insights into repository adoption and utilization, but further investigation is needed to establish how institutional awareness, perceived feasibility, and anticipated benefits relate to the distinctive circumstances of teacher education institutions. This gap is important because the potential contribution of an IR depends on whether institutions possess the resources, organizational support, and stakeholder participation required for sustainable implementation.

Accordingly, this study investigates the potential establishment of institutional repositories as a mechanism for strengthening research output management and dissemination in selected Colleges of Education in Ghana. Specifically, it aims to assess staff awareness of institutional repositories, examine the feasibility of their establishment, and identify their perceived benefits for the participating institutions.

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METHODS

Research Design

This study employed a multiple-case study design incorporating quantitative and qualitative approaches to investigate the feasibility of establishing institutional repositories (IRs) in selected Colleges of Education (CoEs) in Ghana. The design enabled the examination of institutional conditions and stakeholder perspectives across different educational settings. Quantitative data were collected through questionnaires, while qualitative data were obtained through semi-structured interviews to provide contextual insights into the findings. Both approaches were aligned with the study objectives of assessing staff awareness of IRs, examining their feasibility, and identifying their perceived benefits for research output management and dissemination.

Study Setting and Participants

The study involved six Colleges of Education selected from different geographical areas of Ghana: Accra College of Education (ACCE), Bagabaga College of Education (BACE), Berekum College of Education (BECOLED), Holy Child College of Education (HCCE), Jasikan College of Education (JASICO), and Wesley College of Education (WESCO). Two institutions were selected from the Ashanti/Brong Ahafo zone to reflect its geographical coverage.

Participants were drawn from stakeholder groups considered relevant to institutional repository development and management, including principals, vice-principals, management personnel, librarians, information and communication technology (ICT) officers, quality assurance officers, and lecturers or tutors. The study reported a total of 365 respondents across the six institutions, comprising 27 management members, five head librarians, three ICT officers, six quality assurance officers, and 324 lecturers or tutors. The distribution of respondents across institutions is presented in Table 1.

Table 1

Overview of Total Respondents

Respondents Colleges	ACCE	BACE	BECOLED	HCCE	JASICO	WESCO	n
Management members	4	5	5	4	4	1	27
Head librarians	1	1	1	1	-	1	5
ICT officers	-	1	1	-	-	1	3
Quality Assurance officers	1	1	1	1	1	1	6
lecturers/ Tutors	40	70	66	37	41	70	324
n	46	78	74	43	47	77	365

Data Collection

Data were collected using online questionnaires and semi-structured interviews. The questionnaire was developed in accordance with the study objectives and distributed through Google Forms to facilitate participation across geographically dispersed institutions. It included closed-ended and open-ended questions to capture respondents' awareness of IRs, perspectives on their establishment, and anticipated institutional

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benefits. Semi-structured interviews were conducted with selected institutional stakeholders, including principals, librarians, and ICT officers. The interview questions addressed the same research objectives while allowing participants to elaborate on institutional circumstances and considerations relevant to repository development. The combination of questionnaires and interviews enabled the collection of numerical responses and descriptive accounts to inform the assessment of IR feasibility within the participating CoEs.

Questionnaires were created to align with the study's objectives and were distributed online using Google Forms. This approach facilitated effective data gathering across various locations, enabling respondents to provide both open and closed-ended answers. Key personnel from six selected Colleges of Education (CoEs), including librarians, principals, and ICT officers, were interviewed in a semi-structured format. This approach offered a comprehensive analysis of qualitative data to enhance the questionnaire responses. The interviews were also structured to align with the study's main objectives, while also providing room to delve deeper into participants' responses. The use of these tools allowed for the gathering of both numerical and descriptive information necessary for the research.

RESULTS AND DISCUSSION

Result

Characteristics of Survey Respondents and Interview Participants

The study obtained questionnaire responses from 286 participants across six Colleges of Education (CoEs) in Ghana. In addition, 13 stakeholders participated in semi-structured interviews, of which four were conducted face-to-face and nine by telephone. The interviews involved institutional personnel responsible for administrative, library, financial, information technology, and quality assurance functions.

As presented in Table 2, Wesley College of Education (WESCO) accounted for the largest proportion of survey respondents (23.1%), followed by Bagabaga College of Education (BACE; 22.3%) and Berekum College of Education (BECOLED; 20.6%). Accra College of Education (ACCE), Jasikan College of Education (JASICO), and Holy Child College of Education (HCCE) accounted for smaller proportions. Most questionnaire respondents were male, and the largest group had between one and five years of professional experience. Among the interview participants, eight were male and five were female.

Table 2

Demographic Characteristics of Survey Respondents and Interview Participants

Category	Response	Frequency	%
College	WESCO	66	23.1
	BACE	64	22.3
	BECOLED	59	20.6
	ACCE	35	12.2
	JASICO	34	11.9
	HCCE	28	9.8
Gender (survey)	Male	230	80.4
	Female	56	19.6
Years of service (survey)	1–5 years	178	62.2
	6–10 years	47	16.4
	11–15 years	33	11.5

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Category	Response	Frequency	%
	More than 15 years	28	9.8
Interview participants: Gender	Male	8	-
	Female	5	-
Interview participants: Years of service	1–5 years	7	-
	5–10 years	6	-

Awareness of Institutional Repositories

The survey findings indicated that most respondents had some awareness of institutional repositories (IRs), although their levels of understanding varied. A smaller proportion reported having no prior awareness. Interviews revealed a distinction between familiarity with repository-related services and a clear understanding of the concept of an IR. Several interviewees demonstrated limited conceptual awareness, while others had previously accessed repository materials without recognizing the systems as institutional repositories. One participant stated:

> P3: "I just heard it…"

Another participant reported accessing repository resources during postgraduate studies without initially recognizing the platform as an institutional repository. This finding highlights a distinction between practical experience with repository services and conceptual understanding of their purposes and functions. Overall, the interview responses suggest that prior exposure to repository materials does not necessarily correspond to comprehensive awareness of institutional repositories.

Sources of Awareness and Materials Accessed

Postgraduate education was the most frequently reported source of IR awareness (24.3%), followed by university websites (21.3%), institutional orientation (20.4%), self-discovery (20.2%), word of mouth (11.7%), Google searches (1.3%), and workshops (0.7%). The interview findings similarly indicated that participants frequently encountered IRs while undertaking postgraduate studies or accessing university research materials.

Respondents also identified different categories of materials accessed through institutional repositories. Scholarly articles constituted the largest reported category (35.2%), followed by theses and dissertations (28.4%). Interviewees described accessing these materials through university databases and repositories during postgraduate education. For example, one participant stated:

> P8: "I have accessed journals, thesis, and dissertations from the databases of universities…"

These findings highlight the importance of scholarly articles, theses, and dissertations as key resources accessed through institutional repositories. Participants' experiences suggest that postgraduate education provides opportunities for engaging with repository-based academic materials. However, accessing these resources does not necessarily indicate a comprehensive understanding of institutional repositories and their functions.

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Perceived Feasibility of Establishing Institutional Repositories

The survey indicated that 67.8% of respondents considered establishing IRs in Ghanaian CoEs feasible, while 32.2% expressed less favorable assessments. Interview findings similarly revealed differing perceptions of institutional readiness, particularly regarding infrastructure, staffing, management commitment, and financial resources. Participants expressing favorable views referred to existing institutional facilities, ICT equipment, Wi-Fi connectivity, and administrative capacity. One participant explained:

> P11: "The possibility is very high due to facilities such as Wi-Fi, and the availability of staff such as the librarian, ICT staff and the management…"

However, other participants questioned whether management would prioritize investment in repository development. One respondent stated:

> P7: "Attitude of management towards spending money on knowledge resources is very poor so I do not believe that they will be interested in committing so much money in establishing it…"

These findings indicate that favorable perceptions of IR establishment coexisted with concerns about institutional commitment and resource allocation. Although existing technological facilities and personnel were regarded as supporting factors, differences in management priorities and financial capacity raised questions about institutional readiness. Overall, the findings suggest that perceived feasibility depends on both the availability of institutional resources and the willingness of management to support repository development.

Resource Requirements and Institutional Preparation

Infrastructure emerged as an important requirement for establishing IRs, with 117 responses (38.5%, as reported) identifying its significance. Interview participants emphasized the need for adequate technological facilities, qualified personnel, and financial support. However, views differed regarding whether existing institutional resources were sufficient. Some interviewees considered current staffing and infrastructure inadequate, while others anticipated that the necessary resources could be mobilized during implementation. These perspectives indicate differences in perceived institutional readiness and expectations regarding future resource provision.

Participants also emphasized the importance of involving institutional stakeholders in repository development. Staff participation was associated with awareness, acceptance, and institutional cooperation. Proposed preparatory measures included awareness campaigns, professional development, resource provision, and pilot implementation. Promotion and awareness activities received the largest reported share of responses among the proposed preparatory measures (33.6%). Interview participants emphasized the importance of combining these activities with staff development and institutional resource allocation. One participant recommended beginning with a pilot project before expanding repository services to other colleges.

Perceived Benefits of Institutional Repositories

Respondents identified several potential beneficiaries of IR establishment. Benefits to staff members accounted for the largest reported proportion (29.2%), followed by institutional benefits (26.5%), benefits to the academic community (18.2%), individual

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benefits (16.7%), and national benefits (9.5%). Interview findings highlighted research visibility, institutional reputation, accessibility, and scholarly communication as anticipated benefits. Participants considered IRs valuable for making institutional research outputs available to wider academic audiences. One participant emphasized the potential visibility of scholarly work:

P3: "This means that IR makes the work of people or scholars seen worldwide…"

Another participant associated repository development with strengthening institutional identity and making academic resources accessible electronically. Overall, respondents perceived IR establishment as potentially beneficial to individual researchers, participating colleges, and the wider academic community. These findings describe anticipated benefits rather than outcomes observed after repository implementation.

Discussion

Staff Awareness and Understanding of Institutional Repositories

The findings suggest that institutional repository awareness among staff members does not necessarily correspond to a comprehensive understanding of repository functions. Although survey respondents generally demonstrated some familiarity with IRs, interview participants frequently described limited conceptual knowledge, even when they had previously accessed repository services. This distinction is consistent with research emphasizing that awareness and practical understanding are important considerations in repository adoption (Tiemo & Ebiagbe, 2016).

Postgraduate education and university websites emerged as important channels through which participants encountered IRs, whereas workshops played a comparatively limited role. These findings highlight the potential contribution of academic exposure and institutional communication to repository awareness (Gorceag, 2025; Gurikar, 2026). The reported use of scholarly articles, theses, and dissertations further illustrates the relevance of research materials in repository engagement. Nevertheless, accessing repository content should not be interpreted as evidence that users understand institutional deposit procedures, preservation responsibilities, or open-access policies.

The difference between recognizing repository resources and understanding their purposes is consistent with reports that faculty awareness may coexist with limited engagement or knowledge of deposit procedures (Dhanavandan & Tamizhchelvan, 2013; Nunda & Elia, 2019). Studies of non-participation further identify uncertainty about copyright, disciplinary communication practices, perceived effort, and academic reward as barriers that awareness campaigns alone may not resolve (Cullen & Chawner, 2011; Davis & Connolly, 2007; Kim, 2010). Taken together, this literature supports distinguishing general familiarity with IR services from the capacity and willingness to contribute research outputs.

Institutional Readiness and Perceived Feasibility of Repository Establishment

The generally favorable assessment of IR feasibility suggests that stakeholders recognize the potential relevance of repository services to Ghanaian CoEs. However, interview findings indicate that perceived feasibility depends on institutional circumstances, particularly the availability of infrastructure, personnel, and management support. This distinction is important because favorable attitudes toward repository

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establishment do not necessarily demonstrate operational readiness. Previous studies similarly identify institutional commitment and organizational conditions as relevant to repository development (Chilimo, 2016; Gurikar, 2026).

Experiences from established Ghanaian universities provide useful institutional comparisons, illustrating opportunities for repository development within the country's higher education sector. Nevertheless, the circumstances of universities may differ from those of CoEs in terms of research responsibilities, staffing structures, financial resources, and technological capabilities. Consequently, feasibility assessments should consider the specific organizational requirements of teacher education institutions rather than assuming that successful implementation in universities can be directly replicated.

Evidence from Ghanaian universities suggests that repository sustainability requires policies that address content deposit, awareness, technical requirements, and staff competencies (Imoro & Saurombe, 2024; Kumah et al., 2018). Research on Nigerian university repositories similarly identifies the management of local scholarly content and organizational support as challenges that need attention before repository services are expanded (Ezema, 2013). For CoEs, these studies provide contextual guidance for feasibility planning, rather than evidence that the participating colleges already meet operational requirements.

Infrastructure, Human Resources, and Stakeholder Participation

The findings identify technological infrastructure, institutional funding, and personnel capacity as central considerations for IR establishment. Although some participants expressed confidence that the necessary resources could be mobilized, others questioned the adequacy of existing facilities and management commitment. Such differences suggest that institutional readiness involves both resource availability and the capacity to allocate those resources sustainably. Similar implementation challenges, including technological constraints, financial limitations, and insufficient expertise, have been highlighted in repository development literature (Shenton, 2022).

Stakeholder participation represents another important condition. The interview findings suggest that involving academic, administrative, library, and ICT personnel may improve institutional understanding and acceptance of repository initiatives. Previous research has similarly emphasized awareness, institutional participation, and stakeholder support as relevant considerations for repository adoption (Jayakanth, 2023; Kodua-Ntim & Fombad, 2020). However, broad participation should be accompanied by clearly defined responsibilities, particularly for repository administration, technical maintenance, metadata management, and scholarly content deposit.

Long-term preservation also requires operational responsibilities beyond procuring hardware. Evidence from African university repositories documents the importance of preservation procedures, migration practices, and institutional policies (Anyaoku et al., 2019). The COAR good-practice framework identifies discoverability, access, integrity, preservation, and governance as complementary dimensions of repository quality, while the TRUST principles emphasize transparency, responsibility, user focus, sustainability, and technology (Confederation of Open Access Repositories, 2022; Lin et al., 2020). If research datasets are included within the planned repository scope, the FAIR principles can further inform their findability, accessibility, interoperability, and reusability (Wilkinson et al., 2016).

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Preparatory Strategies for Institutional Repository Development

The emphasis on promotion and awareness indicates that participants regard institutional communication as an important preparatory activity. However, awareness alone is unlikely to address technical and organizational constraints. The findings therefore support considering coordinated preparatory measures encompassing staff development, resource allocation, institutional policies, and pilot implementation. Previous research on information literacy and institutional technology adoption provides relevant perspectives on the importance of stakeholder preparation and structured support.

A phased implementation strategy may be particularly appropriate for CoEs with differing levels of institutional readiness. Initial activities could involve assessing infrastructure, developing repository policies, assigning responsibilities, and identifying suitable collections for a pilot repository. Subsequent development could focus on staff training, deposit procedures, and institutional participation. These recommendations arise from stakeholder perceptions and the interpretation of the reviewed literature; their effectiveness would require assessment through actual repository development and implementation.

A phased approach should define repository services as an ongoing institutional commitment, rather than as a one-time software installation (Lynch, 2003). Evidence on self-archiving indicates that liaison arrangements and deposit requirements can influence the contribution of academic materials (Xia, 2007). These considerations are compatible with international open-science guidance that emphasizes enabling policies, sustainable infrastructure, capacity building, and appropriate incentives (UNESCO, 2021). Such measures should be tested through a pilot before being recommended for wider adoption across CoEs.

Perceived Benefits for Research Output and Scholarly Communication

The findings indicate that stakeholders perceive IRs as potentially beneficial to academic staff, individual institutions, and the wider scholarly community. Anticipated benefits include improved research visibility, institutional reputation, preservation of scholarly materials, and wider access to academic outputs. These expectations are consistent with literature discussing the role of repositories in supporting researchers, educators, and open scholarly communication.

Nevertheless, the perceived benefits identified in this study should be distinguished from demonstrated changes in research productivity or scholarly impact. The findings do not establish that IR implementation increases publication output, citation performance, or research quality. Instead, they indicate stakeholder expectations concerning the potential contribution of repositories to research management and dissemination. Future research should therefore evaluate operational repositories using indicators such as institutional deposit activity, resource accessibility, repository use, and research visibility to determine whether anticipated benefits are realized.

Studies of electronic theses and dissertations in South Africa demonstrate that repository usage can be examined through document views, citations, and research dissemination, while reviews of repository development distinguish infrastructure and access from actual scholarly contribution (Bangani, 2018; Bashir et al., 2022). The wider open-access literature likewise documents the role of self-archiving in dissemination and reports associations between open accessibility and research reach, although these findings

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should not be interpreted as evidence of a causal effect for the present colleges (Björk et al., 2014; Piwowar et al., 2018; Tennant et al., 2016). Accordingly, evaluation of future CoE repositories should distinguish deposit activity, preservation performance, use of resources, and measurable research outcomes.

CONCLUSION

Creating institutional repositories (IRs) in Colleges of Education (CoEs) is essential for increasing worldwide recognition and academic influence. Academic literature emphasises the advantages of IRs, such as enhancing the global recognition of scholars and institutions. South Africa's advancements in IR development are setting a positive example for the rest of Africa. Similarly, Ghana's public universities have also made impressive progress in this field. Given the strong academic foundation and extensive resources available at CoEs, the establishment of IRs is highly feasible. Despite the difficulties involved, there is an increasing recognition that can aid in the establishment of IR. It is crucial for educational institutions and those involved to adopt the appropriate strategies to embrace this innovation and enhance their academic achievements.

While a majority of respondents know IRs, there are still some who lack awareness. It is important to start a comprehensive awareness campaign among stakeholders. Establishing IRs should be mandatory as a national policy. This policy would guarantee that all parties, such as librarians, tutors, lecturers, administrators, etc. involved are fully committed to the establishment of the IR. An effective awareness campaign is necessary to fully realise the benefits of IR and to encourage staff participation. Management of CoEs should secure funding from the central government, corporate organizations, and other sources for the success of IR initiatives.

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Author contributions statement

YAA: Conceptualization, methodology, investigation, formal analysis, writing – original draft. ABB: Investigation, data curation, validation, writing – review & editing. SA: Methodology, formal analysis, visualization, writing – review & editing. VO: Investigation, resources, project administration, writing – review & editing. BA: Conceptualization, supervision, validation, writing – review & editing.

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Conflict of interest statement

Authors state no conflict of interest.

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