

ICT Use as a Determinant of Knowledge Management Effectiveness in Higher Educational Institutions in Tanzania: A Systematic Review

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Abstract

The integration of Information and Communication Technology (ICT) in higher education is increasingly recognised as a critical factor influencing knowledge management (KM) effectiveness. This systematic review examines stakeholder perceptions of ICT use and its impact on KM practices within higher education institutions (HEIs), with a particular emphasis on the Tanzanian context. A comprehensive analysis of 25 empirical studies published between 2010 and 2025 was conducted. Findings reveal that stakeholders widely view ICT as a key enabler of KM effectiveness by enhancing knowledge sharing, collaboration, and access to information. However, persistent barriers -such as disparities in ICT access, limited training, and resistance to change-continue to hinder effective ICT integration. The review further highlights the significant roles of organisational support, cultural attitudes, and human resource factors in shaping stakeholder perceptions and ICT adoption. These insights provide practical guidance for policymakers, nstitutional leaders, and researchers to develop inclusive, context-sensitive ICT strategies that improve KM outcomes in higher education.

Key words: Knowledge Management, ICT, Higher Education, Tanzania, Systematic Review

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Résumé

L'intégration des technologies de l'information et de la communication (TIC) dans l'enseignement supérieur est de plus en plus reconnue comme un facteur essentiel influençant l'efficacité de la gestion des connaissances (GC). Cette revue systématique examine les perceptions des parties prenantes concernant l'utilisation des TIC et son impact sur les pratiques de GC au sein des établissements d'enseignement supérieur (EES), en mettant particulièrement l'accent sur le contexte tanzanien. Une analyse exhaustive de 25 études empiriques publiées entre 2010 et 2025 a été menée. Les résultats révèlent que les parties prenantes considèrent largement les TIC comme un catalyseur clé de l'efficacité de la GC, car elles améliorent le partage des connaissances, la collaboration et l'accès à l'information. Cependant, des obstacles persistants – tels que les disparités dans l'accès aux TIC, la formation limitée et la résistance au changement – continuent d'entraver une intégration efficace des TIC. Cette revue met également en évidence le rôle significatif du soutien organisationnel, des attitudes culturelles et des facteurs liés aux ressources humaines dans la formation des perceptions des parties prenantes et l'adoption des TIC. Ces enseignements fournissent des orientations pratiques aux décideurs politiques, aux dirigeants d'établissements et aux chercheurs pour élaborer des stratégies TIC inclusives et adaptées au contexte, visant à améliorer les résultats de la gestion des connaissances dans l'enseignement supérieur.

Mots-clés: Gestion des connaissances, TIC, Enseignement supérieur, Tanzanie, Revue systématique

Introduction

Knowledge Management (KM) has become a vital discipline for enhancing organizational performance by enabling the effective identification, sharing, and application of knowledge. In higher education institutions (HEIs), KM supports academic development, research innovation, and institutional effectiveness (Asad, Rind, and Abdulmuhsin, 2022; Nanjundeswaraswamy and Swamy, 2022). The integration of Information and Communication Technology (ICT) has further transformed KM practices, facilitating efficient knowledge sharing, collaboration, and communication within academic settings (Guzman, Zuluaga-Ortiz, Barrios-Miranda, and Delahoz-Dominguez, 2022; Lubuva, Ndibalema, & Mbwambo, 2024; Omanyoo and Ndiege, 2025).

Globally, developed countries have demonstrated advanced adoption of ICT-supported KM systems. For example, multinational corporations like Google and IBM utilize sophisticated KM platforms to streamline knowledge exchange and data-driven decision-making (García-Álvarez,

2015). Foundational research emphasizes that effective integration of technological systems and organizational processes is critical for successful KM implementation (Gupta, Iyer, & Aronson, 2000). Subsequent empirical studies demonstrate that ICT-enabled systems enhance knowledge creation, sharing, and innovation within higher education contexts (García-Álvarez, 2015; Omanyoo and Ndiege, 2025). More recent scholarship further highlights the strategic importance of KM in improving institutional performance and fostering adaptability in dynamic academic environments (Raut et al., 2024).

In contrast, developing countries face complex challenges in ICT adoption and KM implementation due to infrastructural limitations, financial constraints, and skill shortages (Arakpogun et al., 2023; Ayiro, Muriithi, & Munyao, 2023; Omona, 2010). For instance, universities in Kenya have introduced digital libraries and e-learning platforms to support KM, yet national strategies often remain fragmented (Mwangi et al., 2023). Similarly, in Brazil, cultural and infrastructural barriers have limited the broader adoption of KM initiatives despite efforts by large corporations (Silva and Mendes, 2022).

In Tanzania, HEIs are at an early stage of KM system development, with ICT integration offering significant opportunities to enhance knowledge sharing and organizational learning (Charles & Nawe, 2018; Namayala, Kondo, & Mselle, 2024; Moshia & Ngulube, 2025). However, widespread adoption is hindered by infrastructural deficits, inadequate policy frameworks, and limited funding (Fussy, 2025; Moshia, 2025). Specific efforts at institutions such as the University of Dar es Salaam and the implementation of AI-driven teaching approaches in health training institutions illustrate ICT-driven KM potential, yet challenges remain in scaling these innovations effectively (Mwogosi & Simba, 2025; Moshia, 2025).

The COVID-19 pandemic accelerated digital transformation worldwide, highlighting both opportunities and gaps in ICT-supported KM in education (Nagaraja & Davidson, 2024; Qazi, Sharif, & Akhlaq, 2024; Shao et al., 2023). In Tanzania, although stakeholder attitudes toward ICT are generally positive, usability problems, inadequate training, and weak organizational support continue to undermine KM system effectiveness (Mtebe, 2020). These issues emphasize the critical role of stakeholder perceptions faculty, administrators, students, and external partners in influencing ICT adoption and KM outcomes.

The Technology Acceptance Model (TAM) (Davis, 1989; Patrick, 2018) offers a useful framework for exploring how perceived usefulness and ease of use affect user acceptance of ICT tools in KM. Despite growing recognition of

ICT's role in enhancing KM, empirical research focusing on stakeholder perceptions within Tanzanian higher education, particularly in private universities, remains limited. This systematic review aims to synthesize existing evidence on how stakeholder perceptions of ICT use influence KM effectiveness in Tanzanian HEIs, addressing this important research gap.

Therefore, this systematic review aims to synthesise existing empirical evidence on stakeholder perceptions of ICT use and its influence on KM effectiveness in HEIs. Specifically, the review addresses the following objectives:

- i. identify the ICT tools and platforms highlighted in existing studies as enablers of KM in HE;
- ii. examine the reported barriers to effective ICT use that influence KM in HEIs;
- iii. explore environmental and organisational support factors reported to affect ICT use for KM; and
- iv. analyse how human resource-related factors are perceived to influence KM in the context of ICT use.

Purpose of the Study

The purpose of this systematic review is to explore stakeholders' perceptions of ICT use and its influence on KM effectiveness in HEIs. By synthesising empirical evidence from recent studies, this review aims to provide insights into how ICT enables or hinders KM practices, considering environmental, organisational, and human resource factors.

Literature Review Process

This study employed a systematic review methodology to explore stakeholder perceptions of ICT and its impact on KM effectiveness in HEIs in Tanzania. A thorough literature review was conducted using reputable academic databases, including Google Scholar, Scopus, ERIC, Web of Science, JSTOR, African Journals Online (AJOL), and Tanzanian institutional repositories for identification purposes, with only peer-reviewed empirical studies retained for final inclusion. This approach ensured comprehensive coverage of relevant studies, capturing the most pertinent literature aligned with the evolving landscape of ICT in education (Adhikari & Shrestha, 2023; Omanyo & Ndiege, 2025). Key search terms such as “stakeholder perceptions,” “Information and Communication Technology,” “knowledge management effectiveness,” and “higher education” were utilised to ensure relevance and specificity.

The timeframe of 2010–2025 was selected to reflect recent developments in ICT-supported KM, particularly given the rapid technological advancements and evolving stakeholder roles in higher education over the past decade. Older studies were excluded to maintain focus on literature relevant to contemporary ICT tools, platforms, and academic environments.

Revised Study Selection and Screening

The initial search yielded 512 studies, from which 76 duplicates were removed, resulting in 436 records for screening. Titles and abstracts were assessed based on predefined inclusion criteria, focusing on stakeholder perceptions and the role of ICT in KM within educational contexts. After screening, 325 studies were excluded for not meeting these criteria. A detailed full-text assessment was then performed on 111 articles to evaluate methodological quality and relevance. Eighty-six articles were excluded at the full-text review stage due to failure to meet the predefined inclusion criteria. Ultimately, 25 empirical studies met all inclusion requirements and were included in the final synthesis.

This rigorous screening and selection process ensured methodological transparency and provided a credible foundation for understanding stakeholder experiences and institutional dynamics related to ICT-supported KM.

Quality Assurance Measures

To uphold academic rigour, studies from predatory or non-peer-reviewed sources were systematically excluded. Journal credibility was verified through editorial board credentials, indexing status, and peer review transparency (Caffrey et al., 2022). The review included only English-language papers to ensure consistency in analysis. To assess methodological soundness, the following quality appraisal tools were applied: the Critical Appraisal Skills Programme (CASP) checklist for qualitative studies, the Cochrane risk of bias tool for quantitative studies, and the Mixed Methods Appraisal Tool (MMAT) for mixed-methods research (Aithal & Aithal, 2020; Machado et al., 2022; Millidonis et al., 2024).

This layered quality control process not only ensured methodological integrity but also strengthened the reliability and relevance of the findings to the Tanzanian higher education context.

Methodology Research Paradigm

This systematic review adopts the interpretivist paradigm, which aligns with the exploratory nature of the study. The interpretivist approach emphasizes

understanding the subjective experiences and perceptions of stakeholders regarding ICT use and its influence on KM effectiveness in HEIs. This paradigm supports qualitative synthesis and thematic analysis, focusing on the meanings and contexts behind empirical findings rather than purely quantitative measurement.

Types of ICT Used in the Study

This study focuses on several key types of ICT supporting KM in HEIs. Learning Management Systems (LMSs) are broadly categorized into open-source and proprietary platforms. Open-source LMSs such as Moodle, promoted for collaborative and accessible learning, have been institutionalized in Tanzanian HEIs (Namayala, Kondo, & Mselle, 2024; Guzman et al., 2022). Proprietary LMSs, including Blackboard and Canvas, emphasize scalability and integrated support aligned with commercial ideologies (Jumba, Bundi, & John, 2020; Omanyo & Ndiege, 2025).

In addition, communication tools like Microsoft Teams and Zoom play pivotal roles in facilitating collaboration and knowledge sharing. These platforms are shaped by ideologies prioritizing enterprise integration, user accessibility, and ease of use (Ayiro, Muriithi, & Munyao, 2023; Moshia, 2025; Shao et al., 2023).

Recognizing the founders and underlying ideologies of these ICT tools helps to understand how stakeholder perceptions and adoption behaviours are influenced within the context of KM in HEIs.

Data Synthesis and Analysis

The selected studies underwent qualitative synthesis using content analysis, focusing on identifying common themes and patterns regarding how stakeholder perceptions of ICT affect KM effectiveness in higher education (Elezi and Bamber, 2022; Omanyo & Ndiege, 2025). Data extraction and citation management were facilitated using Mendeley software, which provides an integrated platform for organizing research articles and generating bibliographies efficiently. This ensured consistency and accuracy throughout the review process.

The included studies employed diverse methodologies, ranging from qualitative case studies to quantitative surveys and mixed-methods approaches. This methodological diversity enhanced the comprehensiveness of the review and allowed for a nuanced understanding of stakeholder perceptions across various higher education contexts (Ayiro et al., 2023; Alghail, Abbas, & Yao, 2023).

Characteristics of Included Studies

The systematic review methodology applied in this study, characterized by rigorous study selection and methodological diversity, provides a comprehensive understanding of stakeholder perceptions of ICT's role in enhancing KM within Tanzanian HEIs. The 25 included studies exhibited considerable variation in sample sizes, ranging from small qualitative investigations with as few as 15 participants to large quantitative surveys involving over 1,000 respondents. This variation strengthens the generalizability of the findings, with larger samples providing robust insights into stakeholder perspectives on ICT adoption and KM practices (Omona, 2010; Namayala, Kondo, & Mselle, 2024).

Geographically, the studies reflect diverse regions of Tanzania, including Dar es Salaam, Mwanza, Arusha, and Morogoro. This regional diversity captures varying levels of ICT infrastructure, institutional resources, and policy implementation, all of which influence stakeholder experiences and KM outcomes (Mtebe, 2020; Lubuva, Ndibalema, & Mbwambo, 2024).

The thematic focus of the studies encompassed multiple KM dimensions, including knowledge sharing, collaboration, organizational learning, and technological acceptance. The inclusion of both sector-specific and broad analyses enriches the overall findings by illustrating how ICT-supported KM manifests across different institutional and contextual settings (Nanjundeswaraswamy & Swamy, 2022; Omanyo & Ndiege, 2025). The article selection and screening process, including the number of records identified, screened, excluded, and included, is summarized in Figure 1 below. This process follows the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework developed by Page et al. (2021), which promotes transparency, completeness, and consistency in systematic reviews and ensures a rigorous and reproducible review process.

Figure 1: Framework of Support for DGA Development

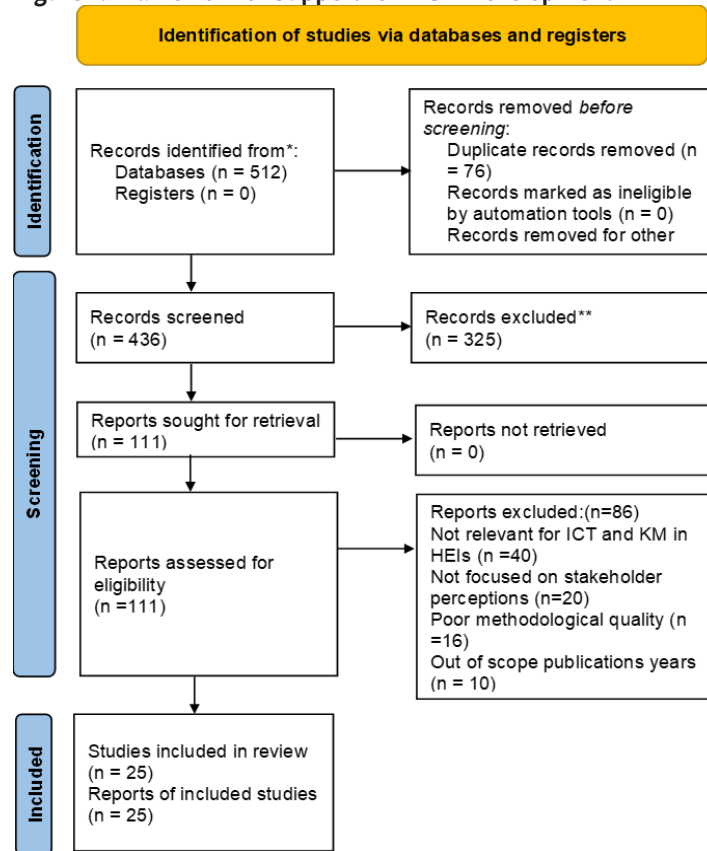


Figure 1: PRISMA flow diagram depicting the selection process for articles from 2010 to 2025

Note: Adapted from The PRISMA 2020 statement: An updated guideline for reporting systematic reviews, by Page et al., (2021).

Results and Discussions

This section presents the findings of the systematic review, highlighting key themes, trends, and gaps identified in the existing literature. The results are discussed in relation to the research objectives and existing studies, providing critical insights into stakeholder perceptions of ICT use and its influence on KM effectiveness within HEIs. The discussion also reflects on the implications of these findings for practice, policy, and future research.

Table 1: ICT Tools and Platforms as Enablers of KM

ICT Tools/ Platforms	Role in Knowledge Management	Key References
Learning Management Systems (e.g., Moodle, Blackboard)	Enhance knowledge sharing, improve accessibility, increase student engagement, and support flexible, interactive learning environments	Mtebe (2020); Lubuva et al. (2024); Guzman et al. (2022); Dewah and Sibanda (2022)
Communication Platforms (e.g., WhatsApp, Zoom)	Enable real-time feedback and interactive learning	Mwombeki et al. (2023)
Cloud-based Collaboration Tools (e.g., Google Drive, Microsoft Teams)	Support improved communication, collaboration, and inclusive learning environments through shared access to resources	Mosha (2025); Namayala et al. (2024); Vega Martinez et al. (2023)

In relation to Objective 1, the analysis reveals that stakeholders widely recognize several ICT tools and platforms as key enablers of effective KM within HEIs. Table 1 summarizes the principal tools identified across the reviewed studies. Learning management systems, communication platforms, and cloud-based collaboration tools were consistently associated with enhanced communication, collaboration, and knowledge-sharing practices among students, faculty, and administrative staff.

For example, Mtebe (2020) demonstrated that platforms such as Moodle enhance knowledge sharing, accessibility, and student engagement within Tanzanian universities. Moodle’s design supports flexible and interactive learning environments that facilitate both formal and informal knowledge exchange. This aligns with findings by Lubuva, Ndbalema, and Mbwambo (2024), who emphasized the role of ICT-integrated learning in improving knowledge acquisition and management. Similarly, Guzman, Zuluaga-Ortiz, Barrios-Miranda, and Delahoz-Dominguez, (2022) reported that ICT adoption strengthens knowledge distribution processes in university settings, while Dewah and Sibanda (2022) highlighted improvements in collaborative knowledge-sharing practices among academics.

Communication tools such as WhatsApp and Microsoft Teams were also found to promote real-time interaction and participatory knowledge exchange within academic communities (Mwombeki, Shidende, & Mselle, 2023). Collectively, these findings indicate that communication technologies reinforce knowledge exchange mechanisms within higher education systems. Additional studies such as Mosha, 2025; Namayala, Kondo, & Mselle, 2024; & Vega et al., 2023 further demonstrate that ICT tools expand access to information, foster inclusive learning environments, stimulate innovation, and strengthen overall KM practices in HEIs.

Table 2: Barriers to Effective Information and Communication Technology (ICT) Use

Barriers to ICT Use	Impact on Knowledge Management	Key References
Limited ICT access for marginalized groups (e.g., rural, economically disadvantaged students)	Reduces participation in knowledge-sharing processes and access to technological resources	Mosha (2025); Omona (2010)
Infrastructure gaps and affordability issues in public and private HEIs	Hinders equitable use of ICT tools, limiting overall KM effectiveness	Fussy (2025); Qazi et al. (2024)
Socio-economic disparities and geographical location affecting ICT use	Uneven distribution of digital infrastructure and skills, compromising KM benefits	Ayiro, Muriithi, and Munyao (2023); Nawaz (2020)
Lack of inclusive ICT policies and investment	Necessitates targeted strategies to improve infrastructure, affordability, and digital literacy	Namayala, Kondo, and Mselle (2024); Shao et al. (2023)

Addressing Objective 2, the analysis identified significant barriers affecting ICT use and KM effectiveness within HEIs. As summarized in Table 2, a major concern relates to disparities in ICT access across different demographic groups.

Mosha (2025) highlighted that marginalized populations, particularly students from rural or economically disadvantaged backgrounds, face limited access to technological resources, reducing their ability to participate effectively in knowledge-sharing processes. Similar concerns were earlier raised by Omona (2010), who observed that infrastructural constraints significantly limit ICT-supported KM initiatives in African higher education contexts. Comparable findings by Fussy (2025) demonstrated that infrastructure gaps and affordability challenges persist in Tanzanian public and private HEIs, hindering equitable ICT utilization. These findings align with Qazi, Sharif, and Akhlaq (2024), who identified financial constraints and technological readiness as critical barriers to ICT adoption in HEIs within emerging economies.

Socio-economic status and geographical location further influence the ability to use ICT effectively. Ayiro, Muriithi, and Munyao (2023) emphasized the uneven distribution of digital infrastructure and skills across East African universities, while Nawaz (2020) observed that institutional disparities and limited strategic planning constrain effective KM practices. Collectively, these studies indicate that digital divides undermine inclusive participation and reduce the overall effectiveness of KM initiatives.

The reviewed literature consistently underscores the need for targeted policy interventions and sustained investment to address these inequalities. Namayala, Kondo, and Mselle (2024) call for inclusive ICT implementation strategies prioritizing infrastructure development, affordability, and digital literacy training. Similarly, Shao et al. (2023) emphasize that sustainable digital transformation requires coordinated institutional support and long-term investment frameworks.

Table 3: Environmental and Organisational Support Factors

Support Factors and Role in Knowledge Management	Key References
Adequate resources, infrastructure, continuous training, and efficient admin processes create a supportive environment for ICT-enabled knowledge sharing, transparency, and decision-making.	Fussy (2025); Mosha and Ngulube (2025); Mosha (2025); Mtebe (2020); Nanjundeswaraswamy and Swamy (2022)
Active stakeholder engagement and inclusive participation increase ICT acceptance and effective KM practices.	Namayala et al. (2024); Ayiro et al. (2023); Na et al. (2022)

Cultural attitudes influence ICT engagement; culturally sensitive strategies improve adoption and KM effectiveness.	Mwombeki et al. (2023); Silva and Mendes (2022); Mkoma and Mgaya (2022); Mwangi and Kimani (2024); Alghail et al. (2023)
Institutional culture fostering innovation and openness enhances stakeholder willingness to use ICT effectively.	Fussy (2025); Mosha et al. (2025); Nagaraja and Davidson (2024)
Broader societal attitudes and community outreach improve ICT acceptance and KM outcomes.	Ayiro et al. (2023); Omanyo and Ndiege (2025)

Regarding Objective 3, institutional and organisational support emerged as pivotal in shaping stakeholder perceptions of ICT effectiveness in KM within HEIs. As summarized in Table 3, stakeholders emphasized that the provision of adequate resources, reliable infrastructure, and continuous training programs is essential for promoting effective ICT use (Fussy, 2025; Mosha & Ngulube, 2025; Nanjundeswaraswamy & Swamy, 2022). Institutions that invest in these support structures create environments conducive to knowledge sharing, collaboration, and innovation.

The reviewed literature further underscores those efficient administrative processes, when facilitated by ICT tools, improve organizational transparency and decision-making (Mosha, 2025; Mtebe, 2020). Moreover, active stakeholder engagement in ICT-related decision-making such as involving faculty, students, and administrative staff in technology planning and implementation is associated with higher levels of acceptance and more positive attitudes toward ICT use (Ayiro et al., 2023; Na et al., 2022; Namayala et al., 2024). Collectively, these findings demonstrate that supportive organisational environments and inclusive participation are critical for optimising ICT-enabled KM.

Cultural influences were also identified as central in shaping stakeholder perceptions and practices. Mwombeki, Shidende, and Mselle (2023) and Silva and Mendes (2022) reveal that cultural attitudes toward technology significantly affect how individuals engage with ICT tools for knowledge sharing. Similarly, Alghail, Abbas, and Yao (2023) highlight that institutional norms and approaches to knowledge protection influence acceptance of ICT-driven knowledge processes. Institutions that overlook cultural dynamics may encounter resistance to adoption, thereby limiting KM effectiveness.

Adopting culturally sensitive strategies is therefore crucial when implementing ICT in HEIs. Understanding local values, attitudes toward technology, and knowledge-sharing norms enables institutions to tailor ICT initiatives to diverse stakeholder groups (Mkoma & Mgaya, 2022; Mwangi & Kimani, 2024). Furthermore, cultivating an institutional culture that encourages innovation, experimentation, and open dialogue enhances willingness to adopt and effectively utilise ICT tools for KM (Fussy, 2025; Mosha et al., 2025; Nagaraja and Davidson, 2024).

Beyond the institutional level, broader societal attitudes toward technology also shape stakeholder engagement. Public awareness initiatives and community outreach can improve ICT acceptance and KM outcomes within HEIs (Ayiro et al., 2023; Omanyo & Ndiege, 2025). Overall, the literature indicates that organisational, cultural, and societal factors operate synergistically in determining the success of ICT-supported KM in Tanzanian higher education.

Table 4: Human Resource-Related Factors Influencing ICT Use

Human Resource Factors and Their Role in ICT-Enabled Knowledge Management	Key References
Prior experience with ICT influences confidence and willingness to adopt new technologies; positive experiences foster innovation and acceptance, while negative one's cause resistance.	Fussy (2025); Mosha (2025); Ayiro, Muriithi, and Munyao (2023); Na et al. (2022)
Targeted, continuous professional development and training improve digital literacy, technical skills, and reduce psychological barriers to ICT use.	Namayala, Kondo, and Mselle (2024); Lubuva, Ndibalema, and Mbwambo (2024); Alshehri and Cumming (2020)
Inclusive engagement of stakeholders in ICT discussions promotes understanding, acceptance, and responsive interventions for enhancing ICT capacity.	Mwombeki, Shidende, and Mselle (2023); Adhikari and Shrestha (2023)
Strengthening human resource capacity through ongoing, context-sensitive training is critical for effective ICT-supported KM.	Nanjundeswaraswamy and Swamy (2022); Omanyo and Ndiege (2025)

Aligned with Objective 4, the analysis revealed that human resource factors—particularly training, digital literacy, and prior experience with ICT—significantly influence stakeholder perceptions and adoption of ICT-supported KM practices within HEIs. As summarized in Table 4, stakeholders with positive prior experiences demonstrate higher levels of confidence and willingness to engage with new technologies, fostering a culture of innovation and acceptance (Fussy, 2025; Moshia, 2025; Na et al., 2022). In contrast, limited exposure or negative experiences may generate apprehension, resistance to change, and reduced effectiveness in KM processes (Ayiro, Muriithi, & Munyao, 2023).

The literature consistently highlights the importance of targeted and continuous professional development in overcoming these barriers. Institutions that implement structured training programs aligned with stakeholder needs and technological advancements enhance digital literacy and promote more effective ICT use (Alshehri & Cumming, 2020; Lubuva, Ndibalema, & Mbwambo, 2024; Namayala, Kondo, & Mselle, 2024). Such initiatives not only improve technical competencies but also address psychological barriers by building confidence and reducing resistance among faculty, administrators, and students.

Furthermore, inclusive engagement in ICT-related discussions strengthens understanding and encourages broader acceptance of technology for KM purposes (Mwombeki, Shidende, and Mselle, 2023; Adhikari and Shrestha, 2023). Creating structured spaces for feedback and knowledge exchange enables institutions to design responsive interventions that enhance both individual and organisational ICT capacities.

Collectively, these findings indicate that strengthening human resource capacity through sustained, context-sensitive training is fundamental to improving ICT-supported KM effectiveness in Tanzanian HEIs (Nanjundeswaraswamy & Swamy, 2022; Omanyo & Ndiege, 2025).

Distinction between Leading and Supporting Studies

In synthesising the reviewed literature, distinctions were made between studies that contributed directly to the development of core thematic findings and those that provided complementary contextual insights. Studies identified as foundational were characterised by strong methodological rigour, clear alignment with the research objectives, and substantial empirical contribution to understanding ICT-supported KM in higher education. These studies informed the primary thematic structure of the analysis. In contrast, complementary studies offered additional perspectives or contextual elaboration that enriched interpretation but did not independently shape

the core themes. This distinction was applied to enhance analytical clarity rather than imply differences in overall scholarly quality.

Authors' Interpretation and Implications

The findings of this review underscore that while ICT tools and platforms are widely recognized as significant enablers of KM, their effectiveness is highly contingent upon contextual factors such as equitable access, organisational support, cultural sensitivity, and human resource development. The consistent emphasis on stakeholder engagement, institutional resources, and cultural alignment demonstrates that technological solutions alone are insufficient without parallel attention to social and organisational dynamics.

From a theoretical perspective, the findings reinforce and contextualize socio-technical systems theory by illustrating how technological and human elements interact within the specific realities of Tanzanian higher education. The review highlights that successful ICT-supported KM requires deliberate alignment between institutional structures, stakeholder capacities, and technological infrastructures.

Practically, the review suggests that policymakers and higher education leaders should adopt holistic strategies that integrate technological investment with inclusive policies, cultural awareness, and sustained capacity-building initiatives. Addressing digital divides remains essential to ensuring equitable participation and maximizing the benefits of ICT integration.

Overall, this review emphasizes the multifaceted and context-dependent nature of ICT-supported KM and provides a structured framework to guide institutions seeking to enhance knowledge sharing and organisational learning through context-sensitive technology implementation.

Significance of the Review

The significance of this review lies in its synthesis of diverse empirical evidence to provide a comprehensive understanding of how ICT use influences KM effectiveness in HEIs. By illuminating the interaction between technological, organisational, cultural, and human resource factors, the review moves beyond viewing ICT as merely a technical intervention and instead situates it within a broader socio-institutional context.

This review contributes to both theory and practice by offering evidence-based insights that inform more inclusive and context-sensitive ICT integration strategies, particularly within Tanzanian higher education. The findings provide actionable guidance for policymakers, institutional leaders,

and researchers seeking to address persistent KM challenges through deliberate and well-coordinated technology implementation.

Conclusion

The findings of this systematic review illuminate the multifaceted role of ICT in enhancing KM within HEIs. Stakeholders consistently recognised ICT as a transformative tool that fosters effective communication, collaboration, and access to knowledge critical components for academic excellence and institutional effectiveness.

However, the review also identified significant disparities in ICT access across different demographic groups, revealing that unequal access continues to hinder knowledge sharing and collaboration. This underscores the urgent need for HEIs to address accessibility gaps to ensure equitable participation and benefits for all stakeholders.

Beyond access, the review highlights the pivotal role of stakeholder engagement in shaping positive perceptions of ICT effectiveness. When stakeholders are actively involved in technology-related decision-making processes, their acceptance and willingness to adopt ICT tools increase substantially. Furthermore, institutional support in the form of adequate resources, infrastructure, and training significantly enhances satisfaction and the effective use of ICT for KM.

Importantly, this review emphasises that cultural influences, both within institutions and in broader society, can either facilitate or obstruct effective knowledge-sharing practices. Therefore, optimising the integration of ICT in KM requires a comprehensive approach that considers not only technological solutions but also organisational, human, and cultural dynamics.

Recommendations

Based on the findings of this review, several actionable recommendations are proposed to enhance the integration of ICT in KM within HEIs.

Firstly, HEIs should prioritise meaningful stakeholder engagement by actively involving academic staff, students, and administrative personnel in all decisions related to ICT. This involvement can be achieved through regular consultations, participatory workshops, and structured feedback mechanisms. Inclusive approaches of this nature foster a sense of ownership among stakeholders and have been shown to improve perceptions of technology effectiveness.

Secondly, HEIs should implement targeted capacity-building programmes that address the diverse needs of stakeholders, with particular attention given to marginalised groups. These training initiatives should focus on building confidence and competence in the effective use of ICT tools for KM, thereby reducing skill gaps and promoting equitable participation.

Equitable access to ICT resources is another critical priority. HEIs should develop and implement clear strategies to ensure that all demographic groups, regardless of socio-economic background or geographic location, have adequate access to technological resources. Such efforts may include partnerships with community organisations, investments in infrastructure, and the provision of affordable digital devices and internet connectivity.

In addition, fostering a culture of innovation within HEIs is essential. Institutions should encourage experimentation with new technologies and support initiatives that align technological tools with the needs of stakeholders. Establishing reliable mechanisms for gathering continuous feedback from users will further ensure that ICT strategies remain relevant, adaptable, and responsive to the evolving challenges of KM.

Finally, this review highlights the need for future research to explore the long-term impacts of ICT integration on KM outcomes across diverse educational contexts. Such research should examine how organisational, cultural, and human factors interact with technological interventions to influence the effectiveness of KM practices.

By implementing these recommendations, HEIs can significantly enhance the role of ICT in supporting KM, ultimately improving knowledge sharing, institutional performance, and stakeholder satisfaction.

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