Received 26 August 2024
Revised 6 February 2025
19 April 2025
Accepted 15 May 2025

Exploring knowledge transfer and retention strategies for postgraduate supervisors in higher education institutions: a global perspective

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Abstract

Purpose – This study aims to systematically review extant global literature on knowledge transfer and retention in the context of postgraduate supervision in the higher education institutions (HEIs) sector.

Design/methodology/approach – To rationally explore knowledge transfer and retention in higher education, the Preferred Reporting Items for Systematic Reviews and Meta-Analysis technique was used as a methodology.

Findings – The research findings of the study point to limited verified research in the global literature linking knowledge transfer, retention and postgraduate supervision in HEIs. Knowledge management is underdeveloped within the context of postgraduate supervision scholarship, albeit with potential serious knowledge loss risks within the HEIs sector. Moreover, knowledge transfer, retention and postgraduate supervision in HEIs are blurred. Therefore, future interdisciplinary studies are recommended to advance the scholarship of knowledge transfer and retention and postgraduate supervision in HEIs.

Research limitations/implications – Future research directions should focus on the critical role and capabilities of the supervisor, the student and other atmospherics.

Practical implications – This study proposes that 21st-century higher education systems depend heavily on the design of organisational knowledge-driven structures, transfer, retention strategies and policies within the context of postgraduate supervision.

Originality/value – This study presents global insights relating to knowledge transfer and strategies in the context of postgraduate supervision scholarship. Moreover, there is limited knowledge transfer and retention

Global Knowledge, Memory and Communication
Vol. 74 No. 11, 2025
pp. 178-196
Emerald Publishing Limited
2514-9342
DOI 10.1108/GKMC-08-2024-0556

research aligned to ageing postgraduate supervisors and voluntary turnover in HEIs globally. Future interdisciplinary studies are recommended to advance the scholarship of knowledge transfer and retention and postgraduate supervision in HEIs.

Keywords Knowledge transfer, Knowledge retention, Knowledge management, Postgraduate supervision, Ageing academics, Higher education institutions, Systematic review

Paper type Literature review

Introduction

Academic institutions are under pressure to improve postgraduate outputs as part of their role in responding to socio-economic challenges. Building research capacity in postgraduate supervision is therefore crucial as it requires a conducive environment, where experienced and expert employees can mentor and transfer skills to aspiring supervisors. Chugh (2017) highlights the importance of knowledge transfer and retention strategies in contemporary postgraduate research supervisory management at higher education institutions (HEIs). However, Makoni and Makoni (2022) lament the lack of adequate supervision capacity as one of the major contributors to postgraduate student underperformance, slow progress, dropout and failure. Zackarias *et al.* (2022) emphasize the need for knowledge transfer in HEIs to enhance international competitiveness and research capacity. However, little attention has been paid to how tacit knowledge can be efficiently transferred to postgraduate supervisors. The extant research points to limited research exploring and linking knowledge transfer and retention to the phenomenon of ageing postgraduate supervisors across the globe (Nyambok and Hongo, 2022; Ngulube, 2021). According to Ngulube (2021), postgraduate supervision involves the active engagement of a supervisor in assisting postgraduate students in identifying a line of inquiry, delineating the scope of the project and providing guidance towards the successful completion of the research project and dissemination of the results.

Succession planning, communities of practice (CoPs), knowledge repositories, mentorship, coaching, phased retirement, job rotation, storytelling and orientation are all examples of knowledge transfer strategies. Mazorodze and Buckley (2020) revealed that CoPs or Communities of Interest are the most effective knowledge transfer tool in knowledge-intensive organizations, followed by mentoring, storytelling, succession plans and coaching. Ngulube (2021) highlighted the importance of transferring critical knowledge to new entrants to ensure that they establish and develop confidence and academic credibility in academic circles. However, extracting knowledge from one individual is not an automatic process, as people "stick" to their knowledge. Barriers in the process of knowledge transfer include culture, inadequate communication, a lack of resources, a lack of peer trust, job insecurity, a lack of leadership, organizational politics, the lack of avenues for informal interactions and work overload. University leaders must ensure that the environment encourages knowledge sharing and transfer to improve the overall performance of HEIs.

Knowledge management is highlighted globally within a structured and well-managed knowledge economy (Escrivão and Silva, 2019). Postgraduate supervisory approaches lay down, develop and master the foundations of a knowledge economy structure. Moreover, human intellectual capital is an essential component of strategic management approaches (Edvinsson *et al.*, 2022). Strategic alliances based on human intellectual capital guarantee that organisations can keep their edge over their closest competitors. These alliances form within organizational structures through institutionalized policies establishing knowledge retention strategies that result in the collection and retention of knowledge and human capital as long-term sustainable investment plans (Rehman *et al.*, 2023). These 21st-century higher

education systems also depend heavily on the design of knowledge economy structures, retention strategies, policies and strategic management approaches.

Makoni and Makoni's (2022) study highlights the challenge of finding qualified supervisors in HEIs due to the increasing number of doctoral students and the lack of doctoral degrees among academic staff. Asiedu *et al.* (2022), Mazorodze and Buckley (2020) and Al-Kurdi *et al.* (2018) highlight the need for the timely transfer of skills and expertise to non-experts to prevent knowledge loss. However, there is limited contribution to unpacking knowledge transfer and retention in the higher education sector, as noted by Mazorodze and Buckley (2020). Therefore, addressing this issue is crucial for ensuring the continued success of HEIs. This article systematically reviews literature on knowledge transfer and retention strategies in postgraduate supervision scholarship in higher education. It presents a global perspective on the challenges of transferring and retaining postgraduate supervision knowledge, skills and expertise amidst ageing academics or supervisors.

Based on the scanned literature, the purpose of this study was to systematically review extant global literature on knowledge transfer and retention in the context of postgraduate supervision in HEIs. With this in mind, the study addresses the following research questions:

RQ1. What gaps exist in the current global discourse on postgraduate supervision knowledge transfer and retention?

RQ2. What are the challenges with transferring and retaining knowledge from ageing postgraduate supervisors to build supervision capacity?

The study proposes an interdisciplinary approach for investigating postgraduate supervision knowledge transfer and retention in HEIs and suggests mixed methods for future research.

Literature review

This review captures knowledge transfer and retention phenomena in the context of postgraduate research supervision. The focus is on knowledge transfer strategies whereby supervisors share their expertise, intending to empower academics who aspire to become postgraduate research supervisors. Postgraduate research supervision is one of the key elements of postgraduate education. In a higher education landscape characterized by complex and rapid changes, it has become critical for HEIs to remain relevant and continue to provide quality teaching, learning and knowledge production that makes a meaningful contribution to the development of society (Rossouw and Goldman, 2023).

Knowledge transfer

Knowledge transfer is a critical process that enables organizations to share expertise, skills and experience across teams, projects and departments. It can be tacit or explicit and is essential for skills development amongst employees, thereby enhancing organizational value and sustaining competitive advantages. Okeke-Uzodike (2021) emphasizes the importance of effectively managing this knowledge. Tacit knowledge is crucial for all types and sizes of organizations as it allows employees to share their skills, expertise and experience. In HEIs, tacit knowledge resides in academics and researchers, and knowledge transfer involves sharing work-related knowledge and expertise with peers within the university. The knowledge-based view theory of the firm deems organisations such as universities as knowledge-creating, knowledge sharing/distribution and learning organisations (Phaladi and Marutha, 2023). Knowledge stickiness or knowledge ambiguity is a significant factor in the transfer of tacit knowledge. Szulanski (1995) defines this phenomenon as the difficulty of transferring knowledge within an

organization because people "stick" to their knowledge. Polanyi (1958) and Nonaka *et al.* (1994) differentiate between explicit and tacit knowledge. Tacit knowledge is difficult to formalize and replicate, making it challenging to capture, transfer, protect and retain (Phaladi, 2023). As such, tacit knowledge makes organizations more vulnerable to serious knowledge loss risks whenever the holders of such knowledge decide to leave or retire (Phaladi and Ngulube, 2024). This is particularly true for supervision experience, expertise and skills that are difficult to codify or to follow a codification strategy.

Dewah and Ngwenya (2020) emphasize the importance of tacit knowledge for continuous improvement and adapting to changing environments. Factors such as individual differences, personalities, willingness to transfer knowledge, attitudes, language competence and trust influence knowledge stickiness. Phaladi (2023) highlights the role of organizational culture and trust in motivating retiring experts to share their knowledge. Szulanski *et al.* (2016) asserts that knowledge transfer is only effective when retained and organizations often lack expertise in managing knowledge transfer and retention. Research suggests that interaction between source and recipient; personalized communication; and recipient observation of knowledge in use facilitate the transfer of tacit knowledge.

Knowledge retention

Universities and colleges are the only specialized institutions whose core business is the production, reproduction and dissemination of knowledge, including the education of the next knowledgeable or suitably qualified generation (Cloete *et al.*, 2016). As universities operate in the knowledge era, they must focus on retaining their institutional knowledge, both in tacit and explicit formats. Knowledge retention can be defined as the capturing of knowledge that is in danger of being lost when an employee leaves an organization (Fombad and Sirorei, 2019). Many researchers have identified retiring workers as key contributors to knowledge loss, but knowledge loss also occurs due to turnover, job rotation and layoffs (Sumbal *et al.*, 2018). The findings of the study by Sumbal *et al.* (2020) revealed that the likely factors of knowledge loss in the manufacturing sector include layoffs, retirement, immigration and job change. As organizations cannot afford to lose knowledge, they need to retain the knowledge of their employees before these employees leave. Academic staff retention refers to the ability of HEIs to not only recruit qualified academic staff, but to also retain them by offering a high-quality work–life, a motivated staff climate and a commitment to best practices in managing human resources and talent (Bushe *et al.*, 2012). Concerningly, knowledge retention has become a critical challenge for many organizations around the world (Makhubela and Ngoepe, 2018; Burmeister and Deller, 2016). Al-Qarshoubi (2020) attested that the problem of academic staff retention is a global one that affects both developing and industrialized countries. Therefore, the retention of valuable organizational knowledge from older and retiring workers has been identified as an urgent need. This is the case in HEIs where experienced postgraduate supervisors retire or exit the system without transferring their skills to junior postgraduate supervisors. The retention of qualified academic staff is a matter of significant concern due to its profound impact on the quality, consistency and stability of HEIs. Furthermore, the resignations of academic staff can create adverse consequences for their colleagues, who may consequently be burdened with increased workloads. If these vacancies are then filled by inexperienced or less qualified individuals, it can also detrimentally affect students. In addition, the loss of experienced academic staff can harm the reputation of the institution, eroding trust and potentially leading to further departures among the remaining faculty (Nyambok and Hongo, 2022).

Knowledge sharing and transfer in the context of postgraduate supervision

Postgraduate supervision is central to knowledge production and the co-creation of knowledge (Oparinde, 2021). The focus should not only be on the relationship between the supervisor and the students as it is also important that experienced supervisors share and transfer knowledge to junior or inexperienced supervisors. This is an area that requires an effective university strategy. Given the role of postgraduate education in global socio-economic change, Manyike (2017) states that it becomes critical for HEIs to develop effective postgraduate supervision strategies that respond effectively to global socio-economic challenges. Postgraduate research supervisors need to have the ability to continuously empower themselves with the appropriate personal and professional attributes to operate effectively in postgraduate supervision, according to Friedrich-Nel and Mac Kinnon (2019). In addition, a conducive environment has to be created at a university level and capacity development initiatives be provided for both research students and research supervisors (Chugh *et al.*, 2022). As iterated above, postgraduate supervision is critical for postgraduate education. Unpacking this phenomenon, Friedrich-Nel and Mac Kinnon (2019) emphasize that central to this process is to develop research skills that contribute to the body of knowledge and certainly to prepare postgraduates to become productive members of an academic community.

A strong emphasis on capacity development leads to knowledge sharing and retention. It has also been succinctly stated (Motshoane and McKenna, 2021) that as more and more students embark on postgraduate research studies, there must be a deliberate desire in HEIs for postgraduate research supervisor development. This should also be centred around mentorship programmes designed to empower junior or inexperienced supervisors. Mlambo *et al.* (2021) note that there is an increased demand and competition for highly qualified and experienced academics as universities respond to the demand for postgraduate output. Therefore, the biggest challenge is a need to retain experienced and knowledgeable academics. This relates to both lecturing and postgraduate supervision. A word of caution from Oparinde (2021) is that postgraduate supervision should not be viewed from a parochial perspective where the focus is on producing postgraduates with postgraduate degrees, but the focus should be on knowledge creation for the knowledge economy. It is only when people are willing to share their knowledge that actual learning takes place.

Knowledge transfer and retention strategies for postgraduate supervisors in higher education institutions

Knowledge transfer strategies for the ageing workforce in HEIs involve various approaches to effectively pass on valuable expertise and experience to the younger generation. Tacit knowledge is often shared through face-to-face interactions, such as CoPs, storytelling, mentorship or on-the-job training, whereas explicit knowledge is easily documented and shared through written documents, presentations and formal training programmes. Various strategies such as training, social networks, CoPs, succession planning and leveraging retired knowledge workers can be used to retain knowledge in organizations (Chigada and Ngulube, 2016; Makhubela and Ngoepe, 2018).

Mazorodze and Buckley (2020) revealed that the most effective strategies for knowledge transfer in knowledge-intensive organizations are CoPs, followed by mentoring, storytelling, succession plans, coaching and knowledge repositories. CoPs are informal gatherings of individuals united by a shared sense of mission, collectively addressing a set of challenges and sharing a deep enthusiasm for a specific subject (Wenger, 1999). Chigada and Ngulube (2016) contend that it is difficult to transfer tacit knowledge, thus the use of CoPs helps knowledge transfer from experienced, skilled and talented older employees to new employees through projects or meetings. Succession planning is an ongoing process that focuses on the knowledge transfer necessitated by an ageing workforce to avoid knowledge

loss risks. Asiedu *et al.* (2022) emphasize the importance of developing robust succession planning strategies in higher education that identify potential successors and provide structured pathways for postgraduate supervisors to learn from current and experienced supervisors before the latter retire or move on.

Storytelling is another technique used for knowledge transfer, providing employees with an opportunity to pass on their knowledge to others. Research by Mazorodze and Buckley (2020) proves that storytelling is a vital tool for transferring tacit knowledge, allowing the sharing of deeper knowledge which may boost the organization's knowledge base. In addition, mentoring is one of the few strategies that can be used to manage knowledge in higher learning institutions, serving as a reliable method for preserving the valuable skills and knowledge of professors who are preparing to exit the system. Consequently, HEIs need to establish mentorship programs where experienced senior staff members guide and support younger colleagues in their professional development.

Knowledge sharing and transfer generates new ideas, increases operational efficiency and helps employees stay motivated. However, a lack of knowledge leadership and formal knowledge management systems hinders knowledge transfer and retention practices.

Methodology

It is important to outline a clear process to explore the literature when conducting a systematic review. This ensures that one does not deviate from the primary aim of transparently and comprehensively reviewing the existing literature with minimum bias. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method underpinned this study, setting the boundaries to review when searching the literature. PRISMA, through a three-stage process of "identification, screening and eligibility", guided the authors when exploring the literature (Page *et al.*, 2021a). The process included defining research questions; searching the literature; identifying, screening selecting and analysing; and reporting results (Hansen *et al.*, 2022). The stages were systematically followed, resulting in the study exploring and examining sources to ascertain their relevance.

Findings presented in Figures 1 and 2 and Table 1 reflect a stringent and vigorous synthesis of the reviewed literature. The criteria to screen records included accuracy, currency, relevance and context. During the eligibility screening, 667 records were excluded after refinements. As a result, the remaining 65 records about knowledge transfer, retention, higher education and postgraduate supervision were closely examined. This resulted in the synthesis and selection of 18 records. The PRISMA method alleviated subjectivity and bias, resulting in credible sources being identified and selected from the literature. Figure 1 illustrates how PRISMA guidelines were followed in the study.

Inclusion criteria

A combination of primary search terms relevant to the topic, such as "Knowledge Transfer/ Knowledge Retention, Knowledge Sharing/Higher Education and Postgraduate Supervision" was incorporated into the search strategies. Other secondary terms used included "Tertiary Institutions/Doctoral Supervision/Ageing Workforce and Universities". Furthermore, the words "tertiary institutions", "Universities" and "Doctoral Supervision" were included in the searches as these are variations of keywords termed "synonyms", or even used as related search terms. These terms also broaden the search criteria and allow for an all-inclusive search of the literature. Searches were not restricted to a specific topic such as Knowledge Sharing, Knowledge Transfer or Knowledge Retention as the authors aimed to explore the global context of these topics concerning postgraduate supervision at HEIs.

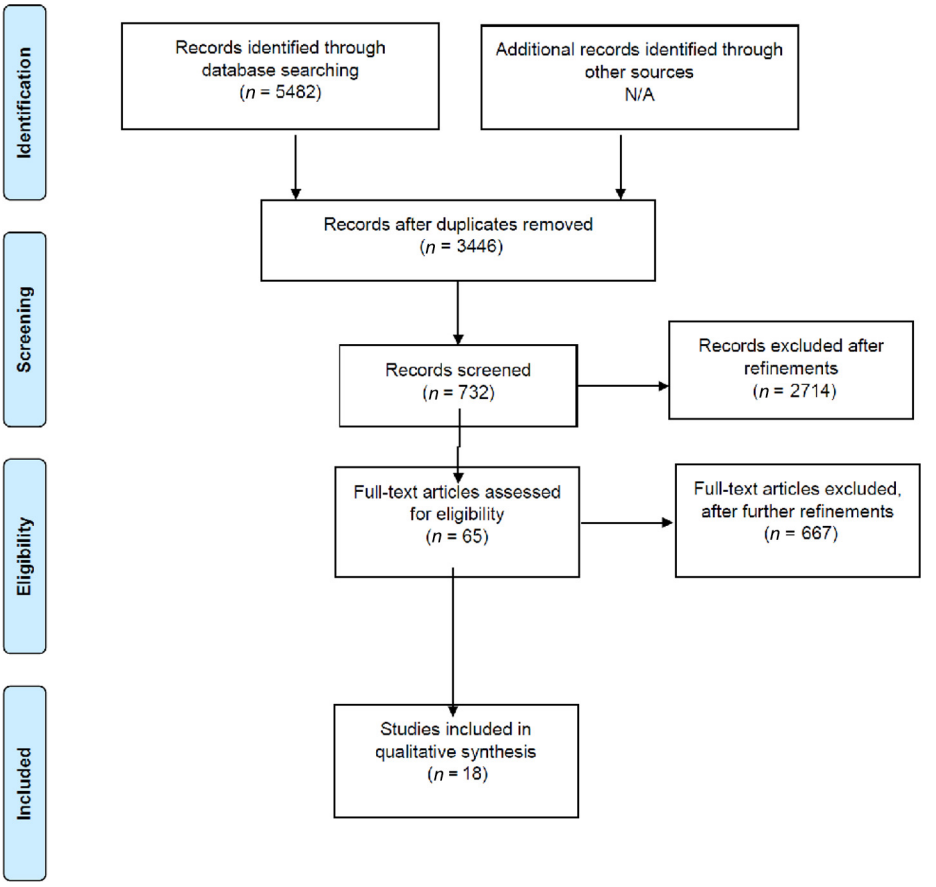

Figure 1. PRISMA flow diagram of literature retrieval
Source: Adapted from Page *et al.* (2021a)

Exclusion criteria

In terms of applying the three-stage screening and selection criteria, records published before 2019 were excluded. The authors' rationale for not selecting records older than 2019 was to capture and present significant contemporary records on retention strategies in postgraduate supervision. This ensured that the study reflected contextual and up-to-date content, instantaneously minimizing the risk of including outdated sources (Chen *et al.*, 2022), which is important when there are ongoing significant changes to the knowledge base of a topic. Furthermore, limiting the literature to recent years can potentially eliminate the risk of bias since outdated sources may not reflect current trends on a topic, which is important for a systematic review. Moreover, it demarcates the position of the extant literature, eliminating obsolete practices. In addition, Page *et al.* (2021b) concur that when conducting a systematic review using PRISMA, the authors can restrict publications within a specific time-frame depending on the eligibility criteria. Moreover, within the context of this study, other exclusions included blogs, book reviews, commentaries, website reviews, trade journals,

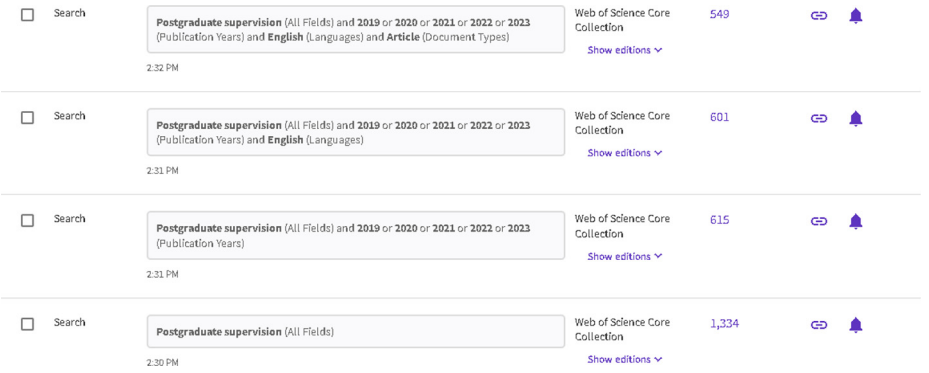

Figure 2. Web of Science database sample search string
Source: Prepared by Mpungose *et al.* (2024)

book chapters and editorials. Selected records were then screened as the authors scanned abstracts, findings, recommendations and conclusions. The three-stage screening and selection criteria of PRISMA resulted in the exclusion of 667 records and yielded a data set of 65 records. An in-depth analysis, screening and eligibility of the remaining records resulted in 48 records being excluded from the remaining data set as there was no reflection of relationships between knowledge transfer, retention, higher education and its implication for postgraduate supervision. The final data set included in the qualitative synthesis was 18 records, as shown in Table 1 and Figure 2.

Sample search string. Figure 2 illustrates the type of search strings used when exploring the databases for literature on knowledge transfer, retention, higher education and postgraduate supervision. Search strings were articulated as authors were graduates of Information Science and experts in information literacy. Therefore, using keywords, synonyms and related terms to research the topic was within their knowledge base. The selected keywords were used with the filters available on the results pages of the databases when exploring literature on knowledge transfer, retention, higher education and postgraduate supervision. Keywords were combined with synonyms as the topic was analysed and combined with themes related to postgraduate supervision and knowledge management in higher education worldwide. The objective, as illustrated in Figure 2, was to string searches for the optimal retrieval of content on knowledge transfer, retention, higher education and postgraduate supervision from high-powered abstract and scientific research databases. Although this search process was complex, it was under the scope of the authors.

Selected databases

A clearly defined path to search literature on knowledge transfer, retention, higher education and postgraduate supervision using the PRISMA method is depicted in Table 1 and Figures 1 and 2, which paved the path in the systematic review. This resulted in the most suitable databases being selected to search the extant literature. Research-intensive abstracts and high-powered scientific databases were selected to explore the topic. PRISMA methods unpacked the step-by-step process of how literature should be identified. The two research-intensive abstract databases were Web of Science and Scopus. Moreover, the two scientific databases, ScienceDirect and ProQuest, provided valuable insight on knowledge transfer, retention, higher education and postgraduate supervision.

Table 1. Summarized findings in the literature

Study identity	Author	Publication journal	Methodology
SI1	Afolayan (2020)	*Journal of Information Science, Systems and Technology*	Literature search and discussion
SI2	Ali *et al.* (2019)	*FWU Journal of Social Sciences*	Qualitative approach
SI3	Bazrafkan *et al.* (2019)	*BMC Medical Education*	Qualitative grounded theory
SI4	Berdahl *et al.* (2022)	*Journal of Political Science*	Quantitative approach
SI5	Clement *et al.* (2020)	*Journal of Microbiology & Biology Education*	Essay
SI6	D'Arrietta *et al.* (2022)	*Journal of Multidisciplinary Healthcare*	Sequential explanatory mixed method design
SI7	Grimwood and Hetherington (2023)	*International Journal for Academic Development*	Longitudinal study
SI8	Huet and Casanova (2021)	*Innovations in Education and Teaching International*	Transformative learning theory
SI9	Jung (2020)	*Journal of Higher Education Policy and Management*	Qualitative approach
SI10	Makoni and Makoni (2022)	*International Journal of Social Sciences & Educational Studies*	Qualitative approach
SI11	Man Fung and Tian (2020)	*Leadership & Organization Development Journal*	Structural model
SI12	Mazorodze and Buckley (2020)	*SA Journal of Information Management*	Quantitative approach
SI13	Motshoane and McKenna (2021)	*Teaching in Higher Education*	Quantitative approach
SI14	Ngulube (2021)	*Problems of Education in the 21st Century*	Qualitative approach
SI15	Ngulube and Ukwoma (2019)	*African Journal of Library, Archives & Information Science*	Qualitative approach
SI16	Okeke-Uzodike (2021)	*Issues in Educational Research*	Qualitative approach
SI17	Polkinghorne *et al.* (2023)	*Encyclopedia*	Review
SI18	Veer Ramjeawon and Rowley (2020)	*Aslib Journal of Information Management*	Qualitative approach

Source(s): Developed by Mpungose *et al.* (2024)

The literature selected from these databases was limited to content published between 2019 and 2023, as illustrated in Figure 3. The selection of records as represented in Figure 1 on the PRISMA information flow diagram is a result of screening for eligibility after identifying the sources of information on the topic. These sources, in the form of research articles, were downloaded and organized using the referencing management software, EndNote. The filter options available on EndNote allowed for duplicate copies from the data set to be removed. Consequently, the resulting download was a total of 732 records between the years 2019 and 2022. These records were then captured and organized using EndNote, which led to the last stage of the screening process.

Results and findings

The final data set in Table 1 provides a global perspective of knowledge transfer, retention, higher education and postgraduate supervision in the Higher Education sector. This included countries such as Australia, South Africa, Pakistan and the USA, among others. Although the final data set in Table 1 addresses knowledge transfer and retention in higher education, there is a dearth of studies aligned with postgraduate supervisors (SI1, SI2, SI3, SI6, SI7, SI8, SI9, S11, SI12, SI14, SI17 and S18). Six records (SI4, SI5, SI10, SI13, SI15 and SI16) address the issues of skills development related to postgraduate supervisors. However, there are limited discussions related to knowledge transfer, retention and the sharing strategies of an ageing workforce of supervisors, even in these records. This wealth of experience and resources from seasoned experts is unavailable for future supervisors to tap into to build capacity in higher education. A concern for postgraduate supervision skills development is highlighted in six records (SI4, SI5, SI10, SI13, SI15 and SI16) and may also be addressed through knowledge arbitrage, which is a component of knowledge management and sharing. In summary, knowledge arbitrage is the process of enabling knowledge to flow from surplus to deficit knowledge pools (Talwar *et al.*, 2023).

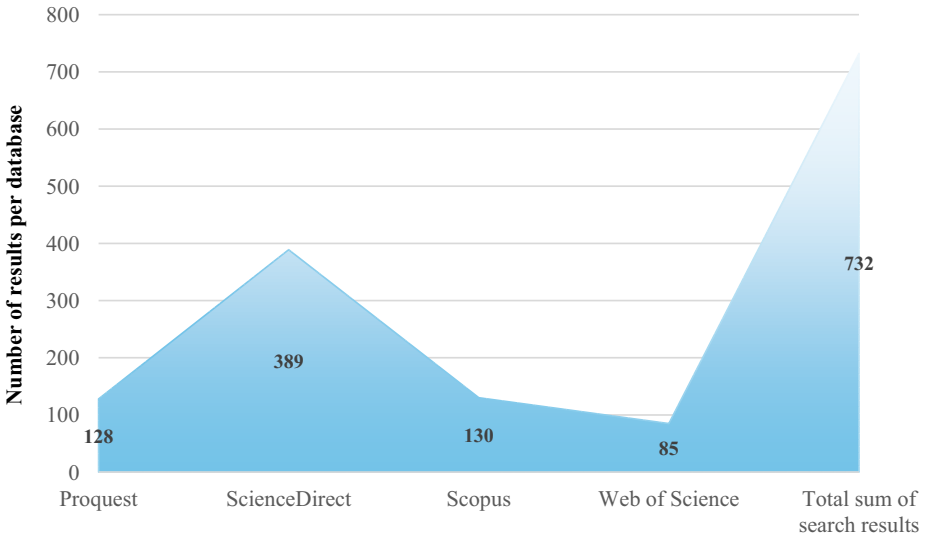

Figure 3. Selected databases and search strategies used by authors
Source: Developed by Mpungose *et al.* (2024)

There are also records addressing issues such as support for postgraduate students through initiatives like workshops and seminars as they journey through research (SI6, SI7 and SI17). However, the development of PhD holders as future supervisors is an indefinite gap in the literature. On a global scale, only a few records (SI10, SI13, SI15 and S16) provide a glimpse of knowledge transfer and retention aligned to ageing postgraduate supervisors. Moreover, it is gravely concerning to even imagine that supervisors who are close to retirement will exit with a wealth of knowledge in postgraduate supervision. There is limited knowledge transfer, sharing and retention policies, strategies or mechanisms from HEIs globally. This gap has the potential to result in knowledge loss risk, as well as a drain of supervisory principles, guidelines and protocols at HEIs. Globally, the outcome can be damaging to the reputation of HEIs as future supervisors will not have the opportunity to learn the research trade from the "gurus" in their field, resulting in many being unprepared to guide postgraduate students. Consequently, their supervisory skills may also come under the spotlight within research circles if there is limited grooming to receive the supervisory mantle and lead future postgraduate students in the research arena.

The results of the review highlight a methodological gap in understanding postgraduate supervision knowledge transfer and retention. It is important to observe that in terms of methodology, the majority of the 18 review records' articles (12) tended towards a qualitative research strategy, whereas only five of the studies used a quantitative technique. Despite the intricacy of research on knowledge transfer, retention and postgraduate supervision in higher education, it is intriguing that just one study used mixed methods research (MMR). When using a mono-research strategy to study the intricate issues related to the transfer and retention of postgraduate supervision expertise, there is a clear methodological gap. An integrated and multidisciplinary strategy is necessary to address the researchers' findings on the challenges of researching the transfer and retention of postgraduate supervision tacit knowledge to lower the knowledge loss risks associated with ageing supervisors.

Ultimately, postgraduate students may also be in danger as the quality of their work after being scrutinized by research examiners, research boards and research committees may be unworthy of a qualification. Therefore, the importance of knowledge transfer, retention and sharing of postgraduate supervisors cannot be overstated in global literature. Thus, the final data set in Table 1 pinpoints a lack of cohesive relationships among knowledge transfer, knowledge retention and ageing postgraduate supervisors globally. This has dire ramifications for the higher education sector and the future of postgraduate supervision.

Figure 3 illustrates the accuracy, currency, relevance and context of the eligibility criteria applied through PRISMA using the keywords "Knowledge Transfer/Knowledge Retention, Knowledge Sharing/Higher Education and Postgraduate Supervision", which were incorporated into search strategies. Scopus and Web of Science were chosen as these are widely used citation databases globally (Pranckutė, 2021). Furthermore, these databases have an authoritative background as custodians of high-powered research platforms. In addition, ProQuest and ScienceDirect were selected as these databases provided access to full-text records. The total sum of results in Figure 3 from Scopus, ScienceDirect, ProQuest and Web of Science illustrated a *high total sum of search results*. Nevertheless, once the PRISMA inclusion criteria were applied, the total sum of results was refined to 732, as shown in Figures 2 and 3.

Figure 4 illustrates the distribution of selected records by continent concerning knowledge transfer, retention in higher education and the implications thereof for postgraduate supervision. Within this context, it is important to acknowledge that studies related to knowledge transfer, retention and postgraduate supervision in higher education mostly emerged from the Global South, specifically Africa, as per Table 1 and Figure 4.

South Africa emerged as the country from which most research emanated in this acutely specialized field, as shown in Table 1 and Figure 4. Records SI13, SI15 and SI16 address the importance of knowledge transfer, retention and postgraduate supervision in HEIs. These records reveal that knowledge transfer, retention and postgraduate supervision need deeper exploration and probing at HEIs, which will assist in framing strategies, systems and processes to circumvent knowledge loss related to the exit of expert supervisors. Although Asia, Europe and Oceania also feature in the findings, Table 1 and Figure 4, SI2, SI3, SI7, SI8, SI9, SI11, SI17 and SI18 are indistinct concerning knowledge transfer, retention and postgraduate supervision at HEIs. Interestingly, literature that emerged from the Global North, America and Canada is limited concerning knowledge transfer, retention and postgraduate supervision at HEIs. However, it is aligned with the research topic (SI4 and SI5 in Table 1 and Figure 4).

In 2019, key findings point to collaborative supervision with seasoned experts as beneficial for novice supervisors since it builds capacity for the future – SI2, SI3 and SI15 as illustrated in Figure 5. Other salient issues included a lack of maturation and readiness amongst novice supervisors for postgraduate supervision due to limited opportunities for competency development programmes at HEIs. The interest in the topic seemed to increase in 2020, according to SI1, SI5, SI9, SI11, SI12 and SI18. Records showed negligence in sharing supervisory best practices with trainee supervisors, including trust and cultural identity barriers between ageing and novice postgraduate supervisors. Therefore, Clement *et al.* (2020) and Mazorodze and Buckley (2020) suggest developing actionable frameworks to facilitate the transfer of supervisory skills through inclusive knowledge transfer practices. Furthermore, Mazorodze and Buckley (2020) believe that the most effective transfer tool in knowledge-intensive organizations such as HEIs is CoPs, followed by mentoring and coaching. Interestingly, in one specific record (SI14), Ngulube (2021) highlighted the importance of team supervision, communicative spaces and knowledge sharing that will provide the impetus in developing novice supervisors. In addition, in 2021, 2022 and 2023, records SI13, SI14, SI16 and SI17 shared similar views. The emerging themes were professional development opportunities; investment in building postgraduate supervision capacity; and the ability of ageing postgraduate supervisors to become effective mentors at HEIs.

Discussions

Research on the complex issue of postgraduate supervision tacit knowledge transfer and retention and associated risks in HEIs is certainly novel and emergent. This paper has systematically reviewed knowledge transfer and retention strategies in the context of

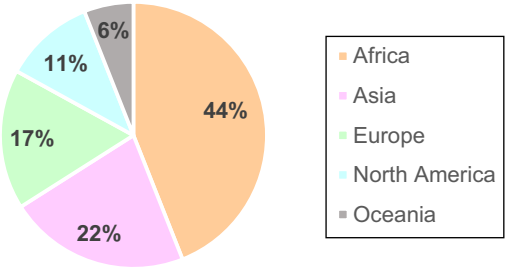

Figure 4. Publications on the topic by continent
Source: Developed by Mpungose *et al.* (2024)

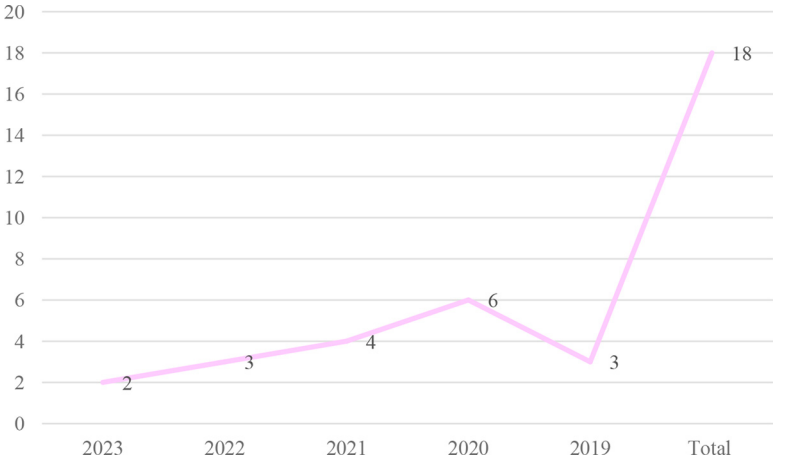

Figure 5. Key findings in the literature
Source: Developed by Mpungose *et al.* (2024)

postgraduate supervision in the extant literature in relation to providing an understanding of knowledge transfer and retention in higher education and its implications for postgraduate supervision. It can be deduced from Table 1 that the literature reviewed is derived from the Social Sciences discipline (S12, S13, S14, S15, S16, S17, S18 and S19). The literature reviewed in the article confirms that knowledge transfer strategies to retain knowledge remain a challenge in modern-day strategic management at HEIs (Chugh, 2017). Furthermore, data sets (SI6, SI7 and SI17) highlight the critical role of Continuous Professional Development and Workplace Learning (CPDWL) as a panacea against career stagnation. Articles (SI4, SI5, SI10, SI13, SI15 and SI16) confirm that skills development as part of CPDWL is key to the intellectual weaponization of postgraduate supervisors. The articles mentioned above serve as evidence of Knowledge Transfer and Retention Strategies for Postgraduate Supervisors in HEIs on a global scale. Mentorship and CPDWL are some of the knowledge transfer and retention strategies commonly employed by HEIs. However, knowledge transfer and retention strategies for postgraduate supervision should be anchored on the research experiences of the supervisor, apart from the motivation and drive of the student and other imperatives.

There are also articles addressing issues such as support for postgraduate students through initiatives such as workshops and seminars as they journey through research. The articles captured in Table 1 on the summarized findings used a potpourri of research methodologies to unpack the phenomenon of knowledge transfer and retention. The main methodologies used include qualitative methods (SI1, SI2, SI3, SI6, SI7, SI8, SI9, S11, SI12, SI14, SI17 and S18). According to the findings of the study, the articles highlighted above are not explicit on knowledge transfer and retention. Similarly, six articles (SI4, SI5, SI10, SI13, SI15 and SI16) address the issues of skills development related to postgraduate supervisors, even though there is a limited discourse in the articles related to knowledge transfer, retention and the sharing strategies of an ageing workforce of supervisors. The findings of the study confirm that from a global perspective, only SI10, SI13, SI15 and S16 provide a pointer of knowledge transfer and retention associated with ageing postgraduate supervisors. Globally, there are no knowledge transfer, sharing or retention policies, strategies or mechanisms, which is ludicrous as it may cause knowledge loss, knowledge risk and a drain on supervisory

principles, guidelines and protocols within HEIs (Makoni and Makoni, 2022; Motshoane and McKenna, 2021; Okeke-Uzodike, 2021).

Using PRISMA, the authors incorporated the keywords "Knowledge Transfer/Knowledge Retention, Knowledge Sharing/Higher Education and Postgraduate Supervision" as part of their search strategy to ensure the precision, currency, relevance and context for the eligibility criteria. A wide variety of citation databases have been selected, including Scopus and Web of Science (Pranckutė, 2021). Professional resources like Scopus and Web of Science are both valuable resources and even though they differ in certain ways, such as coverage and metrics, they share many similarities, including detailed citation information and broad coverage.

Given the complexity of postgraduate supervision tacit knowledge loss risk and the lack of a holistic understanding of the key organisational factors adversely affecting knowledge transfer and retention in HEIs, more robust methodologies should be considered. One such methodology is MMR. This research methodology is suitable for investigating complex scientific social research problems such as postgraduate supervision knowledge transfer and retention from various angles. By combining qualitative and quantitative strategies to understand the complex phenomenon of tacit knowledge loss amongst ageing supervisors using the MMR approach, future research will be able to unpack key organisational factors affecting the effective transfer and retention of postgraduate supervision tacit knowledge interdependently and comprehensively, triangulated from multiple standpoints, in particular from the scholarship on postgraduate supervision, knowledge management and human resource management. Creswell and Creswell (2023) concur that MMR is appropriate for exploring complex scientific research problems.

Throughout the context of this article, it is important to acknowledge that most studies on knowledge transfer, retention and postgraduate supervision have primarily arisen from the Global South, primarily Africa (Table 1 and Figure 4). South Africa emerged as the country from which most research emanated in this acutely specialized field, as depicted by Table 1 and Figure 4. In articles SI13, SI15 and SI16, study discusses the importance of knowledge transfer, retention and postgraduate supervision in HEIs, but these articles reveal that HEIs need to delve deeper into knowledge transfer, retention and postgraduate supervision. Even though Asia, Europe and Oceania also figure in the findings, as shown in Table 1 and Figure 4, SI2, SI3, SI7, SI8, SI9, SI11, SI17 and SI18, knowledge transfer, retention and postgraduate supervision in HEIs are blurred. As a matter of interest, there is scant research on knowledge transfer, retention and postgraduate supervision in HEIs emerging from the Global North, namely America and Canada (Ali *et al.*, 2019).

As evidenced in articles by Ngulube (2021) and Ngulube and Ukwoma (2019), these authors demonstrate their credibility by highlighting and exploring topics aligned with the main motifs of this article, which are knowledge transfer and retention strategies in postgraduate supervision in the existing literature. Knowledge transfer and retention are explored concerning postgraduate supervision in HEIs. From the reviewed literature (Ali *et al.*, 2019; Bazrafkan *et al.*, 2019 and Ngulube and Ukwoma, 2019), it is evident that collaborative supervision with seasoned experts was found to be beneficial for novice supervisors as it builds capacity for the future. However, there was a lack of maturity and readiness for postgraduate supervision due to limited competency development programmes at HEIs. Interest in this topic increased in 2020, with records showing negligence in sharing supervisory best practices with trainee supervisors. To address this, actionable frameworks, inclusive knowledge transfer practices, CoPs, mentoring and coaching are suggested. The most effective transfer tool in knowledge-intensive organizations such as HEIs is the community of practice, followed by mentoring and coaching.

Conclusions and recommendations

There is little doubt that research on the intricate topic of postgraduate supervision tacit knowledge transfer and retention, as well as the knowledge loss risks involved, is new and emerging. It is equally clear that knowledge transfer, retention and postgraduate supervision in HEIs are blurred. This systematic review highlights the significant disparity in knowledge transfer, retention and postgraduate supervision within HEIs. The review concludes that ageing postgraduate supervisors remain a serious global phenomenon facing many HEIs in the knowledge-based economy, amidst much competition. Globally, there is intensive competition amongst HEIs to poach PhD holders from one another to increase postgraduate supervision capacity. The development of PhD holders as future supervisors is an indefinite gap in the global literature. Moreover, there is limited knowledge transfer and retention research aligned to ageing postgraduate supervisors and voluntary turnover in HEIs globally. A lack of strategies to transfer their knowledge, expertise and skills to younger generations of scholars poses serious knowledge loss and capacity risks whenever senior supervisors decide to retire or move to other institutions for much-better job opportunities. The problem is further complicated by the absence of knowledge retention strategies, as well as inadequate supervision capacity (Cheng, 2020; Wamundila and Ngulube, 2011). The research findings of the study point to verifying limited research in the global literature linking knowledge transfer, retention and postgraduate supervision in HEIs. Moreover, knowledge management is underdeveloped within the context of postgraduate supervision scholarship, albeit with potential serious knowledge loss risks within HEIs sector.

Recommendations for future research

The review highlights that most studies on knowledge transfer, retention and postgraduate supervision in HEIs have primarily come from the Global South, especially South Africa. Whilst Asia, Europe and Oceania are also mentioned, their research on this phenomenon is limited. The review also underscores the lack of research on knowledge transfer, retention and postgraduate supervision in HEIs from the Global North, specifically America and Canada. Therefore, further future studies are recommended for the countries in the Global North to explore the pertinent issue of postgraduate supervision tacit knowledge transfer and retention and its associated risks. For future research, this review also recommends MMR to explore complex postgraduate supervision tacit knowledge loss risks from various perspectives, using data and methodologies from both qualitative and quantitative sources for comprehensive, trustworthy, balanced and diverse findings. Future research is also recommended to explore the key organizational factors affecting the effective transfer and retention of the tacit knowledge of ageing supervisors. Regarding the methodological gap identified in the review, the study recommends that future research should explore this area using MMR as it is the most appropriate methodological strategy for understanding these barriers from the postgraduate supervision education, knowledge management and talent management perspectives. This approach will help unpack the key organizational factors affecting the effective transfer and retention of tacit knowledge from multiple perspectives, particularly in postgraduate supervision, knowledge management and HRM. Regarding policy development to address the knowledge risks associated with the ageing supervisors, the study further proposes that HEIs should invest much of their efforts in developing policies on succession planning, inter-generational knowledge transfer, coaching and mentoring and retention strategies. Supervisors and policymakers in HEIs should consider collaborative supervision as it offers superior benefits for both supervisors and students, promoting quality scholarship, reasonable completion times, collective learning and capacity building. It also fosters knowledge sharing and supervisor development capacity, compared to the dyadic supervision model (Ngulube, 2021; Okeke-Uzodike, 2021). Moreover, it is also incumbent upon HEIs to inculcate a culture

of knowledge sharing to realize knowledge retention in formal organizations (Chisita and Fombad, 2021). As part of further research directions, the study recommends focusing on knowledge arbitrage to enhance knowledge transfer, retention and postgraduate supervision in HEIs in an attempt to achieve the effective management of knowledge flows from concentrated areas to marginalized regions.

References

Afolayan, O.T. (2020), "A framework for action to improve tacit knowledge sharing in Nigeria's higher education institutions", *Journal of Information Science, Systems and Technology*, Vol. 4 No. 1, p. 68.

Ali, J., Ullah, H. and Sanauddin, N. (2019), "Postgraduate research supervision: exploring the lived experience of Pakistani postgraduate students", *FWU Journal of Social Sciences*, Vol. 13 No. 1, pp. 14-25.

Al-Kurdi, O., El-Haddadeh, R. and Eldabi, T. (2018), "Knowledge sharing in higher education institutions: a systematic review", *Journal of Enterprise Information Management*, Vol. 31 No. 2, pp. 226-246.

Al-Qarshoubi, A. (2020), "Academic staff retention at higher education institutions in the sultanate of Oman: the impact of incentives", Doctoral dissertation, University of Glasgow, doi: 10.5525/gla.thesis.81626.

Asiedu, N.K., Abah, M. and Dei, D.G.J. (2022), "Understanding knowledge management strategies in institutions of higher learning and the corporate world: a systematic review", *Cogent Business and Management*, Vol. 9 No. 1, pp. 210-218, doi: 10.1080/23311975.2022.2108218.

Bazrafkan, L., Yousefy, A., Amini, M. and Yamani, N. (2019), "The journey of thesis supervisors from novice to expert: a grounded theory study", *BMC Medical Education*, Vol. 19 No. 1, pp. 1-12, doi: 10.1186/s12909-019-1739-z.

Berdahl, L., Malloy, J. and Young, L. (2022), "Doctoral mentorship practices in Canadian political science", *Canadian Journal of Political Science*, Vol. 55 No. 3, pp. 709-720, doi: 10.1017/S000842392200044.

Burmeister, A. and Deller, J. (2016), "Knowledge retention from older and retiring workers: what do we know, and where do we go from here?" *Work, Aging and Retirement*, Vol. 2 No. 2, pp. 87-104, doi: 10.1093/workar/waw002.

Bushe, B., Chiwira, O. and Chawawa, M. (2012), "The impact of academic staff recruitment, development and retention policies at Ba Isago University College on their commitment to the college", *Research Journal of Business Management and Accounting*, Vol. 1 No. 4, pp. 84-97.

Chen, S., Tian, D., Law, R. and Zhang, M. (2022), "Bibliometric and visualized review of smart tourism research", *International Journal of Tourism Research*, Vol. 24 No. 2, pp. 298-307.

Cheng, E.C. (2020), "Knowledge transfer strategies and practices for higher education institutions", *VINE Journal of Information and Knowledge Management Systems*, Vol. 51 No. 2, pp. 288-301, doi: 10.1108/VJIKMS-11-2019-0184.

Chigada, J. and Ngulube, P. (2016), "A comparative analysis of knowledge retention strategies at selected banks in South Africa", *Business Information Review*, Vol. 33 No. 4, pp. 221-227, doi: 10.1177/0266382116683892.

Chisita, C.T. and Fombad, M.C. (2021), "Knowledge sharing to support climate change adaptation in Zimbabwe: views from selected climate action organisations", *VINE Journal of Information and Knowledge Management Systems*, Vol. 51 No. 2, pp. 333-350, doi: 10.1108/VJIKMS-10-2019-0161.

Chugh, R. (2017), "Barriers and enablers of tacit knowledge transfer in Australian higher education institutions", *International Journal of Education and Learning Systems*, pp. 272-276.

Chugh, R., Macht, S. and Harreveld, B. (2022), "Supervisory feedback to postgraduate research students: a literature review", *Assessment and Evaluation in Higher Education*, Vol. 47 No. 5, pp. 683-697, doi: 10.1080/02602938.2021.1955241.

Clement, L., Leung, K.N., Lewis, J.B. and Saul, N.M. (2020), "The supervisory role of life science research faculty: the missing link to diversifying the academic workforce?" *Journal of Microbiology and Biology Education*, Vol. 21 No. 1, pp. 1-13, doi: 10.1128/jmbe.v21i1.1911.

Cloete, N., Mouton, J. and Sheppard, C. (2016), *Doctoral Education in South Africa*, African Minds, Cape Town, p. 296.

Creswell, J.W. and Creswell, J.D. (2023), *Research Design: qualitative, Quantitative, and Mixed Methods Approaches*, 6th ed. Sage, Los Angeles.

D'Arrietta, L.M., Vangaveti, V.N., Crowe, M.J. and Malau-Aduli, B.S. (2022), "Impact of research training on newly graduated health professionals' motivation to undertake research", *Journal of Multidisciplinary Healthcare*, Vol. 15, pp. 2223-2240, doi: 10.2147/JMDH.S377963.

Dewah, P. and Ngwenya, S.N. (2020), "Establishing tacit knowledge transfer practices for competitive advantage at a public sector organization", *Cooperation and Collaboration Initiatives for Libraries and Related Institutions*, IGI Global, PA, pp. 130-149.

Edvinsson, L., Mas, F.D., Pablos, P.O.D., Massaro, M. and Dumay, J. (2022), "From a value-based knowledge economy to a worth economy. New reflections and perspectives on intellectual capital research", *International Journal of Learning and Intellectual Capital*, Vol. 19 No. 1, pp. 83-101, doi: 10.1504/IJLIC.2022.119282.

Escrivão, G. and Silva, S.L. (2019), "Knowledge management maturity models: identification of gaps and improvement proposal", *Gestão and Produção*, Vol. 26 No. 3, pp. 1-16.

Fombad, M.C. and Sirorei, E.C. (2019), "Knowledge management processes at St Paul's University Library in Kenya", *South African Journal of Information Management*, Vol. 21 No. 1, pp. 1-8.

Friedrich-Nel, H. and Mac Kinnon, J. (2019), "The quality culture in doctoral education: establishing the critical role of the doctoral supervisor", *Innovations in Education and Teaching International*, Vol. 56 No. 2, pp. 140-149, doi: 10.1080/14703297.2017.1371059.

Grimwood, M. and Hetherington, R. (2023), "A neglected area: supervision development opportunities for doctoral researchers involved in undergraduate and masters project mentoring", *International Journal for Academic Development*, Vol. 28 No. 1, pp. 74-86, doi: 10.1080/1360144x.2021.1959336.

Hansen, C., Steinmetz, H. and Block, J. (2022), *How to Conduct a Meta-Analysis in Eight Steps: A Practical Guide*, Springer, Cham, pp. 1-19.

Huet, I. and Casanova, D. (2021), "Exploring the professional development of online and distance doctoral supervisors", *Innovations in Education and Teaching International*, Vol. 58 No. 4, pp. 430-440, doi: 10.1080/14703297.2020.1742764.

Jung, J. (2020), "The fourth industrial revolution, knowledge production, and higher education in South Korea", *Journal of Higher Education Policy and Management*, Vol. 42 No. 2, pp. 134-156, doi: 10.1080/1360080x.2019.1660047.

Makhubela, S. and Ngoepe, M. (2018), "Knowledge retention in a platinum mine in the North West Province of South Africa", *South African Journal of Information Management*, Vol. 20 No. 1, pp. 1-8.

Makoni, C.S. and Makoni, P.L. (2022), "An assessment of the status, practice, and challenges of doctoral supervision at Lupane State University in Zimbabwe", *International Journal of Social Sciences and Educational Studies*, Vol. 9 No. 3, pp. 39-48, doi: 10.23918/ijsses.v9i3p39.

Man Fung, L. and Tian, F. (2020), "How academic leaders facilitate knowledge sharing: a case of universities in Hong Kong [how academic leaders facilitate knowledge sharing]", *Leadership and Organization Development Journal*, Vol. 41 No. 6, pp. 777-798, doi: 10.1108/LODJ-11-2019-0481.

Manyike, T.V. (2017), "Postgraduate supervision at an open-distance e-learning institution in South Africa", *South African Journal of Education*, Vol. 37 No. 2, pp. 1-11, doi: 10.15700/saje.v37n2a1354.

Mazorodze, A.H. and Buckley, S. (2020), "A review of knowledge transfer tools in knowledge-intensive organizations", *SA Journal of Information Management*, Vol. 22 No. 1, pp. 1-6, doi: 10.4102/sajim.v22i1.1135.

Mlambo, V.H., Mlambo, D.N. and Adetiba, T.C. (2021), "Expansion of higher education in South Africa: problems and possibilities", *J. Soc. Soc. Anthropol*, Vol. 12, pp. 30-40, doi: 10.31901/24566764.2021/12.1-2.363

Motshoane, P. and McKenna, S. (2021), "Crossing the border from candidate to supervisor: the need for appropriate development", *Teaching in Higher Education*, Vol. 26 No. 3, pp. 387-403, doi: 10.1080/13562517.2021.1900814.

Mpungose, B.P., Phaladi, M.P., Chisita, C.T., Omarsaib, M. and Mhlongo, P.M. (2024), "Summarised findings in the literature (Table 1)".

Ngulube, P. (2021), "Postgraduate supervision practices in education research and the creation of opportunities for knowledge sharing", *Problems of Education in the 21st Century*, Vol. 79 No. 2, pp. 255-272, doi: 10.33225/pec/21.79.255.

Ngulube, P. and Ukwoma, S.C. (2019), "Mapping supervision trends in doctoral research in library and information science in Nigeria and South Africa: implications for collective learning", *African Journal of Library, Archives and Information Science*, Vol. 29 No. 1, pp. 1-16.

Nonaka, I., Byosiere, P., Borucki, C.C. and Konno, N. (1994), "Organizational knowledge creation theory: a first comprehensive test", *International Business Review*, Vol. 3 No. 4, pp. 337-351.

Nyambok, G.A. and Hongo, H.O. (2022), "Staff turnover and knowledge loss: a case study of the University of Nairobi Library", *Regional Journal of Information and Knowledge Management*, Vol. 7 No. 1, pp. 14-36, doi: 10.70759/8bqh5575.

Okeke-Uzodike, O.E. (2021), "Postgraduate supervision in a South African transforming academic environment: a reflexivity approach", *Issues in Educational Research*, Vol. 31 No. 4, pp. 1175-1194.

Oparinde, K.M. (2021), "Recentering postgraduate supervision as a knowledge co-sharing pursuit in the 21st century", *BJES*, Vol. 11 No. 3, pp. 28-39.

Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A. and Brennan, S.E. (2021a), "The PRISMA 2020 statement: an updated guideline for reporting systematic reviews", *International Journal of Surgery*, Vol. 88, pp. 1-9.

Page, M.J., Moher, D., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E., Chou, R., Glanville, J., Grimshaw, J.M., Hróbjartsson, A., Lalu, M.M., Li, T., Loder, E.W., Mayo-Wilson, E., McDonald, S., McGuinness, L.A., Stewart, L.A., Thomas, J., Tricco, A.C., Welch, V.A., Whiting, P. and McKenzie, J.E. (2021b), "PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews", *BMJ*, Vol. 372 No. 160, pp. 1-36.

Phaladi, M.P. (2023), "Mitigating tacit knowledge loss in South African state-owned companies: HRM approach", *Electronic Journal of Knowledge Management*, Vol. 21 No. 3, pp. 211-223, doi: 10.34190/ejkm.21.3.3152.

Phaladi, M.P. and Marutha, S.N. (2023), "A framework for knowledge-based leadership for improved risk management in state-owned enterprises in South Africa", in Roache, D. (Ed.), *Transformational Leadership Styles for Global Leaders: management and Communication Strategies*, IGI Global, PA, pp. 128-149, doi: 10.4018/979-8-3693-1380-0.ch008.

Phaladi, M.P. and Ngulube, P. (2024), "Understanding tacit knowledge loss in public enterprises of South Africa", *SA Journal of Human Resource Management*, Vol. 22, pp. 1-10, doi: 10.4102/sajhrm.v22i0.2229.

Polanyi, M. (1958), *Personal Knowledge: Towards a Post-Critical Philosophy*, Routledge, London.

Polkinghorne, M., Taylor, J., Knight, F. and Stewart, N. (2023), "Doctoral supervision: a best practice review", *Encyclopedia*, Vol. 3 No. 1, pp. 46-59, doi: 10.3390/encyclopedia3010004.

Pranckutė, R. (2021), "Web of science (WoS) and Scopus: the titans of bibliographic information in today's academic world", *Publications*, Vol. 9 No. 1, p. 12, doi: 10.3390/publications9010012.

Rehman, J., Hawryszkiewycz, I., Sohaib, O., Namisango, F. and Dahri, A.S. (2023), "How professional service firms derive triple value bottomline: an IC perspective", *Journal of Information and Knowledge Management*, Vol. 22 No. 1, doi: 10.1142/S0219649222500873.

Rossouw, D. and Goldman, G.A. (2023), "Technology and collaboration as strategic drivers shaping higher education", *The Journal for Transdisciplinary Research in Southern Africa*, Vol. 19 No. 1, pp. 1-10, doi: 10.4102/td.v19i1.1307.

Sumbal, M.S., Tsui, E., Cheong, R. and See-To, E.W. (2018), "Critical areas of knowledge loss when employees leave in the oil and gas industry", *Journal of Knowledge Management*, Vol. 22 No. 7, pp. 573-1590, doi: 10.1108/JKM-08-2017-0373.

Sumbal, M.S., Tsui, E., Durst, S., Shujahat, M., Irfan, I. and Ali, S.M. (2020), "A framework to retain the knowledge of departing knowledge workers in the manufacturing industry", *VINE Journal of Information and Knowledge Management Systems*, Vol. 50 No. 4, pp. 631-651, doi: 10.1108/VJIKMS-06-2019-0086.

Szulanski, G. (1995), "Unpacking stickiness: an empirical investigation of the barriers to transfer best practices inside the firm", *Academy of Management Proceedings*, Vol. 1995 No. 1, pp. 437-441, doi: 10.5465/ambpp.1995.17536715.

Szulanski, G., Ringov, D. and Jensen, R.J. (2016), "Overcoming stickiness: how the timing of knowledge transfer methods affects transfer difficulty", *Organization Science*, Vol. 27 No. 2, pp. 304-322, doi: 10.1287/orsc.2016.1049.

Talwar, S., Nawaz, R., Sithipolvanichgul, J., Gupta, B. and Dhir, A. (2023), "Strategic and serendipitous knowledge arbitrage: what we know and what remains underexplored?" *IEEE Transactions on Engineering Management*, Vol. 71, pp. 1-13, doi: 10.1109/TEM.2023.3293170.

Veer Ramjeawon, P. and Rowley, J. (2020), "Enablers and barriers to knowledge management in universities: perspectives from South Africa and Mauritius", *Aslib Journal of Information Management*, Vol. 72 No. 5, pp. 745-764, doi: 10.1108/ajim-12-2019-0362.

Wamundila, S. and Ngulube, P. (2011), "Enhancing knowledge retention in higher education: a case of the University of Zambia", *South African Journal of Information Management*, Vol. 13 No. 1, pp. 1-9.

Wenger, E. (1999), *Communities of Practice: Learning, Meaning, and Identity*, Cambridge University Press, Cambridge.

Zackarias, A.J., Bond-Barnard, T.J. and Van Waveren, C.C. (2022), "Improving knowledge transfer processes to address skills and knowledge gaps between senior and junior staff in engineering projects", *South African Journal of Industrial Engineering*, Vol. 33 No. 4, pp. 147-164, doi: 10.7166/33-4-2672.

Further reading

Council of Higher Education (2022), "National review of South African doctoral qualification", Pretoria: CHE.

Hendrickse, R. (2022), "Covid-19: an alternative approach to postgraduate supervision in the digital age", *South African Journal of Higher Education*, Vol. 36 No. 5, pp. 98-118.

Khosravi, A. and Ahmad, M.N. (2013), "Knowledge sharing impact factors selection for research supervision", *Journal of Basic and Applied Scientific Research*, Vol. 3 No. 6, pp. 148-161.

National Advisory Council on Innovation (2023), "South African Science, Technology and Innovation Indicators", NACI: South Africa.

Whyte, G. and Classen, S. (2012), "Using storytelling to elicit tacit knowledge from SMEs", *Journal of Knowledge Management*, Vol. 16 No. 6, pp. 950-962, doi: 10.1108/13673271211276218.

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