The Journal for Transdisciplinary Research in Southern Africa
ISSN: (Online) 2415-2005, (Print) 1817-4434

An investigation into the knowledge–sharing practices for innovation in higher education institutions of developing countries

Authors:
Alfred H. Mazorodze[1]
Peter Mkhize[1]

Affiliations:
[1]Department of Information Systems, School of Computing, University of South Africa, Johannesburg, South Africa

Corresponding author:
Alfred Mazorodze,
mazorodzeah@yahoo.com

Dates:
Received: 24 Apr. 2022
Accepted: 27 June 2022
Published: 29 Sept. 2022

How to cite this article:
Mazorodze AH, Mkhize P. An investigation into the knowledge–sharing practices for innovation in higher education institutions of developing countries. J transdiscipl res S Afr. 2022;18(1), a1230. https://doi.org/10.4102/td.v18i1.1230

The adoption of knowledge-sharing practices in higher education result in improved decision-making, improved access to information and increased collaboration. A knowledge-sharing culture enables the free exchange of knowledge amongst academics and this drives institutions towards innovation.

This study examines the extent to which knowledge-sharing practices have been adopted at higher education institutions (HEIs) of developing countries.

The article reports on an inquiry conducted at HEIs in Zimbabwe to determine the knowledge-sharing practices in place.

A survey was used to collect quantitative data from 240 purposefully selected academics at the HEIs. The data were analysed using descriptive statistics.

This study established that HEIs have not fully implemented the knowledge-sharing practices. Empirical evidence confirms that attendance of conferences is important for knowledge sharing where 43% of the participants approved the proposition. Coaching and mentoring improve academic skills such that 21.7% of the participants approved the premise. Subscribing to international journals increases the visibility of scientific research work and only 18.3% of the participants confirmed that their institutions subscribe to internationally recognised journals. Surprisingly, 60% of the participants confirmed that their institutions do not offer knowledge-sharing workshops. Unremarkably, 23.3% of the participants confirmed that their institutions do not have a knowledge-sharing culture.

Transdisciplinarity Contribution: Higher education institutions have not fully exploited the knowledge-sharing practices that could make them more innovative. The institutions are still at the trial stage of adopting knowledge-sharing practices. This study therefore recommends the creation of communities of practice (COPs) specifically for knowledge sharing.

Keywords: knowledge sharing; communities of practice; academic; higher education institutions; innovation; coaching and mentoring.

Introduction

Knowledge sharing basically involves the communication of knowledge to other individuals in an institution.[1] Innovation is described by Hassan[2] as a multistage process where institutions transform ideas into value-added services and processes, so as to compete with others and differentiate themselves in their marketplace. The innovation process transforms new knowledge into useful products and services thereby creating value for the institutions. To this date, knowledge sharing remains an important catalyst for innovation in higher education institutions (HEIs) of both developed and developing countries. According to Farinha et al.,[3] innovation contributes to institutional growth and sustainability. All over the world, the business of higher education is to teach students and conduct research, although other scholars[4] argue that HEIs are not business institutions. Research is pivotal for innovation as it allows knowledge-sharing, a knowledge management (KM) process, which Farooq[5] underscores as crucially important. Research findings through publications could be used to improve institutional competencies, including improved strategies for teaching, learning and collaborating.

Higher education institutions naturally store and access knowledge in some manner and these institutions are expected to be at the cutting edge of such innovation.[1] Research-intensive institutions are ranked according to their core missions of teaching, research and the international

outlook. An institution of higher learning's knowledge base is a major factor in attracting and nurturing tomorrow's finest minds and this inspires and motivates the next generation of potential research academics. As a result, research and publications are principal factors that foster innovation in HEIs. Moustaghfir and Schiuma[6] reported that, innovation and knowledge sharing are closely related and exert significant impact on institutional sustainability and performance. This study was conducted at four HEIs in Zimbabwe, directed by the following two objectives, designed to:

- Determine the extent to which knowledge-sharing practices have been applied at the HEIs
- Recommend the adoption of knowledge-sharing practices at the HEIs.

Knowledge can only have a positive impact on a HEI if it is shared with others and applied to solve problems in an institutional setting.[7] Knowledge sharing considerably increases team productivity,[8] making it easier to access expertise from within the team and this certainly boosts institutional creativity. This study contributes to scholarly knowledge by recommending the adoption of knowledge-sharing practices in HEIs of developing countries. The following section provides the theoretical framework that guides the study and reviews literature on different tools and techniques, which could be used for effective knowledge sharing in HEIs.

Literature review

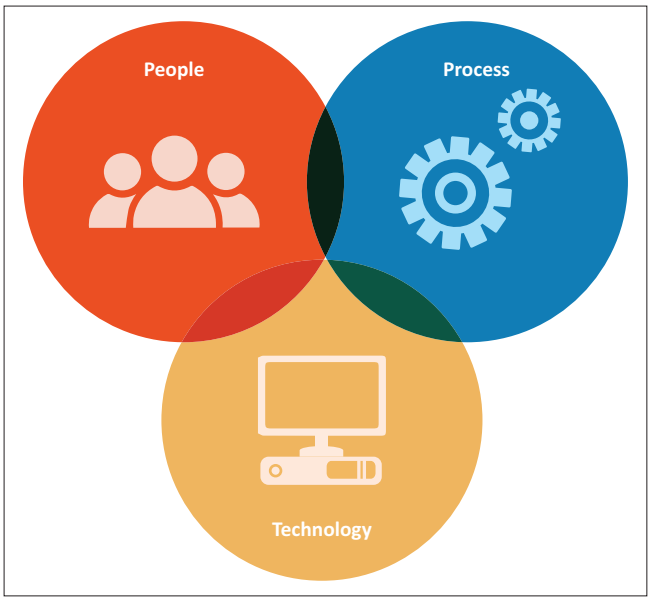
The diffusion of innovations (DOI) theory focuses on understanding how innovative ideas are spread in social systems,[9] which in this case are HEIs. According to Nowacki and Bachnik[1] and Lee and Trimi,[10] innovation is a new idea in organisational practices that gains momentum and diffuses through a social network system. Taking cue of innovation adoption from Rogers,[9] Nowacki and Bachnik[1] define innovation adoption as the application of an innovation within an organisation. The ultimate goal of innovation adoption is to ensure that users adopt the idea or service to solve practical problems. For this specific study, innovation diffusion is therefore the dissemination of innovative knowledge-sharing practices within the HEIs in developing countries.

Knowledge-application refers to the practical use of knowledge that has been created, captured and put into the KM cycle. Cheng, Ho and Lau[11] underscore that knowledge application is when available knowledge is used to make informed decisions and execute tasks through direction and routines. It is vital to underscore that knowledge re-use promotes efficiency and innovation by introducing more effective ways of doing work in an institution. This is quite seminal at a HEI in creating and maintaining a competitive advantage. From an academic perspective, knowledge-sharing application results in improved decision-making, improved access to information, increased collaboration and improved understanding of information in context in a timely manner. According to Farinha et al.,[3] institutions of higher education are in the business of creating and disseminating knowledge because their core focus is the creation, dissemination, knowledge sharing and institutional learning. These institutions of higher learning aim to equip new generations with the practical skills through effective knowledge-sharing. It is important to highlight that knowledge sharing should be promoted as a way of advancing knowledge in innovative ways. Thus, encouraging knowledge sharing would positively scaffold academic excellence in developing countries.

Laudon and Laudon[12] define knowledge sharing as the transfer of one person's knowledge and ideas to another person using a computer-based information system. This definition illustrates that HEIs should have knowledge-sharing systems in place. Knowledge sharing enables HEIs to converge towards knowledge portals. In many HEIs, knowledge sharing takes place by means of publications, presentations, workshops, meetings, seminars, written reports and focus group discussions.[13] As a matter of fact, knowledgeable and experienced researchers should be prepared to share knowledge with others. Knowledge shared by academics in communities of practice (CoPs) becomes institutional knowledge[14] and can encounter challenges such as a lack of time, a barrier which is very consistent in the KM literature. Coaching and mentoring are some of the tools used to nurture knowledge in HEIs. Coaching empowers employees and encourages them to take responsibility[15] whilst mentoring offers professional socialisation and support to enable knowledge-transfer in HEIs.[16] In addition, mentoring increases knowledge sharing through collaboration and this undoubtedly strengthens the institutional culture.

Many institutions of higher learning invest millions of dollars into information and communication technology (ICT) without considering the effective integration of those technologies into shared decision-making processes that ultimately improve academic operations.[17] During knowledge-sharing, knowledge held by an academic is converted into a form that can be understood and used by other academics in an institution to solve practical problems. This basically means conversion of tacit knowledge into explicit knowledge using different processes. People are the core of institutional knowledge sharing because it is people who create, share and manage the knowledge in an institution of higher learning. Knowledge management, specifically knowledge-sharing, brings together the three core organisational resources: (1) people, (2) processes and (3) technology to enable the institution to use information and knowledge effectively.[18] People are the holders of knowledge and should understand the processes, assisted by different technologies. Figure 1 shows the connections amongst these three core resources.

From Figure 1, we can infer that academics in HEIs build a knowledge-sharing culture and they are assisted by different technologies to execute their core functions of teaching, learning, community engagement and research. According to Simmons,[19] people signify the capabilities of academics



Source: Adapted from Barnes S. Aligning people, process and technology in knowledge management. 2nd ed. London: Ark Group; 2011[18]

FIGURE 1: Aligning people, process and technology in knowledge management.

within an institution to inspire and influence others with their valuable knowledge. Thus, training and motivating people to be integrated and aware of the processes become an act that strives to continuously improve services using appropriate technology. Processes, on the other hand, describe how one creates and implements best practices for effective knowledge sharing. In addition, processes aim to share knowledge with the teams and therefore apply the new knowledge in problem-solving. Laudon and Laudon[12] confirm that technology addresses how one selects and uses the tools to facilitate effective knowledge sharing. Moreover, technology assists with storing and securing information and knowledge in an institution.

Knowledge sharing builds a learning and development culture[4] and it is vital to have managers and leaders in HEIs who can inspire the knowledge workers to share the knowledge they have nurtured. Institutions of higher education need to attend effective education and training workshops that develop a thriving knowledge-sharing culture.[11] In knowledge-intensive institutions, knowledge sharing nurtures a corporate learning culture. This corporate culture develops into a shared vision and team-work and as a result the institutions become innovative. As a learning culture is characterised by values and beliefs of academics in an institution, this culture certainly boosts the morale and motivates the academics to share knowledge. The methodology adopted to complete this study is presented next.

Methodology

After an in-depth literature review on the knowledge-sharing topic, the researchers established that knowledge-sharing practices are not fully embraced in HEIs of developing countries. The research method and procedure adopted to complete the study is explained here in an effort to answer the following questions.

- To what extent have knowledge-sharing practices been applied at HEIs of developing countries?
- Which tools could be recommended for effective knowledge sharing in HEIs?

Research design, paradigm and sampling

A quantitative research design in the form of a survey was conducted at four HEIs in Zimbabwe: a developing country in Africa. The positivist paradigm was used in this research because it is scientific and objective.[20] Moreover, positivism permits statistical analysis following well-defined structures. The research participants were drawn from a sample of 240 academics in different disciplines at the HEIs using a purposive sampling technique.

Data collection method

Quantitative data and facts were collected through the use of a structured online questionnaire. The questionnaire was divided into different sections including the demographic section and the knowledge-sharing applications section. The demographic section enabled the researcher to understand the different profiles of the academics. The second section enabled the researcher to understand the extent to which knowledge-sharing practices have been applied at the HEIs in Zimbabwe. Academics were asked to rank statements on a 5-point Likert scale from strongly agree to strongly disagree on the different aspects of knowledge sharing in HEIs. Responses to Likert scale questions are standardised and these are analysed collectively to draw meaningful conclusions.

Data analysis and interpretation

For quantitative data analysis, Microsoft Office Excel 2019 was utilised because of its charting capabilities and user-friendliness. Internal consistency is a measure of reliability,[21] which determines the extent to which a measure yields the same results. The internal consistency tests were therefore performed to improve the validity and reliability of the research findings using Cronbach's alpha. The reliability tests were performed on the knowledge-sharing applications and Cronbach's alpha was 0.74 confirming the appropriateness of the data collected and analysed. According to Salkind,[22] Cronbach's alpha above 0.6 is acceptable although other scholars advocate for higher values of 0.90–0.95 to perform both descriptive and inferential statistics. In line with the ethical principles outlined by Surmiak[23] and for confidentiality reasons, the names of the participants and the HEIs are not disclosed in this article. Interestingly, the response rate was 66.6%, which was actually reasonable to analyse and generalise the findings to HEIs in developing countries. This article therefore reports on the quantitative data only from the academics on the knowledge-sharing applications for innovation in HEIs.

Research results

The demographic data of the participants is given in Table 1. According to Potter and Hoque,[24] demographic information is necessary for the determination of whether the participants in a specific study are a representative sample of the target population for generalisation of the results. Moreover, demographic data permits readers and researchers to compare and replicate findings in similar contexts.

From the data presented in Table 1, we can infer that majority of the participants were higher degree holders with more than 10 years of working experience in HEIs. As the business of HEIs is to teach students and do research,[25] work experience of the academics is very important to deliver the best services to the institution. Knowledge-sharing practices aim to tap the expertise possessed by experienced academics and share it with junior academics and this helps to retain organisational knowledge.

The data analysed and discussed in the next section sought to determine the extent to which knowledge-sharing practices have been applied at the HEIs and also recommend the tools, which could be used for effective knowledge-sharing. The data analysis was guided by the DOI by Rogers,[9] which looks at how ideas spread in social systems. As explained earlier on in the methodology section, the data were collected from four HEIs in Zimbabwe, a developing country in Africa. All the questions were on a 5-point Likert scale from strongly agree (5) to strongly disagree (1). Figure 2 shows the distribution of responses obtained from the study. It is important to note that the distribution of responses show an effective visual picture on the responses of the participants.

TABLE 1: Demographic data of the participants.

Variable	Variable category	Percentage
Gender	Male	68.3
	Female	31.7
Qualifications	Bachelor's or Honours degree	22.1
	Master's degree	52.1
	Doctoral degree	17.9
	Other	7.9
Work experience	Less than 1 year	3.0
	1–3 years	12.0
	4–10 years	32.0
	More than 10 years	53.0

From the distribution presented, Figure 3 presents a summary and analysis of responses obtained from academics at the HEIs in Zimbabwe. In Figure 3, positive responses refer to the participants who strongly agreed and agreed, respectively, to the different propositions on a specific knowledge-sharing aspect. Neutral reflects on the responses where participants were not sure or indecisive of the different propositions. Lastly, negative is a combination of participants who disagreed and strongly disagreed with the propositions on the knowledge-sharing practices in their HEIs. From the descriptive analysis, useful conclusions can be drawn for each individual proposition.

Ethical considerations

The Research Ethics Committee in the College of Science, Engineering and Technology of the University of South Africa approved the study with reference 2021/CSET/SOC/041.

Discussion of results

An institution of higher learning can only be innovative if it allows its academics to attend both local and international conferences.[26] It emerged from this enquiry that 43.3% of the responses were positive on their institutions allowing

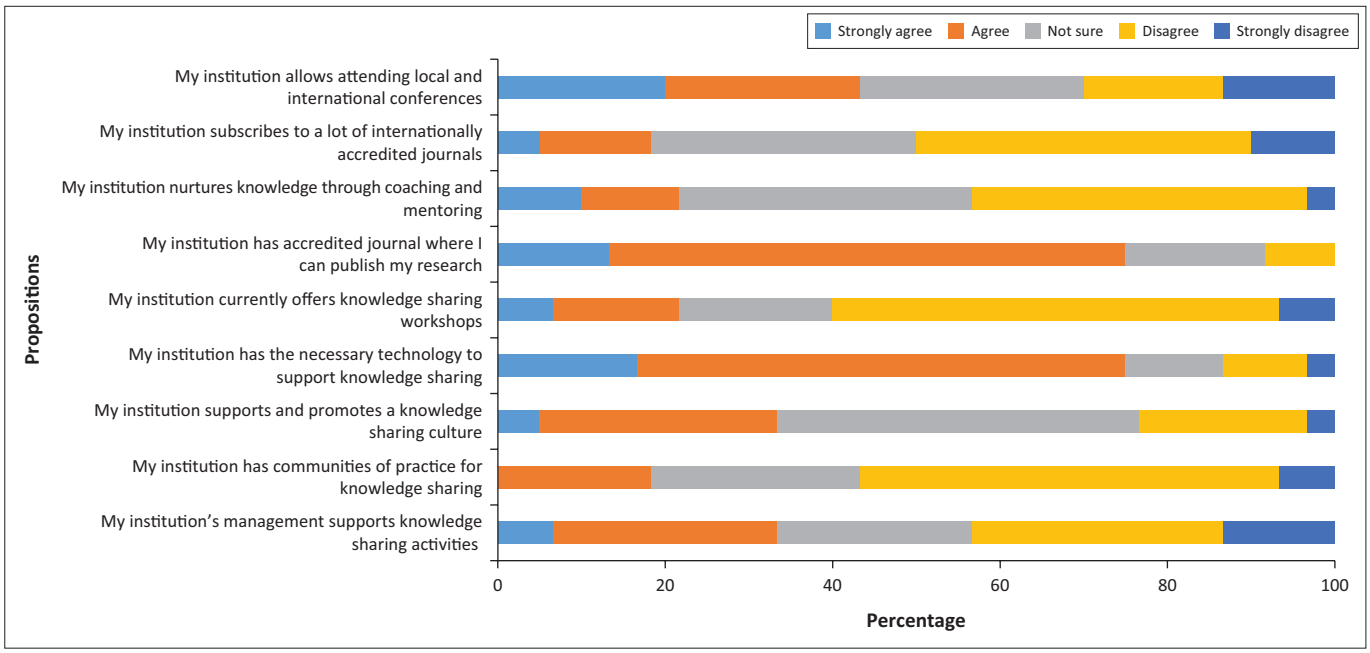


FIGURE 2: Distribution of responses on knowledge-sharing practices for innovation (n = 240).

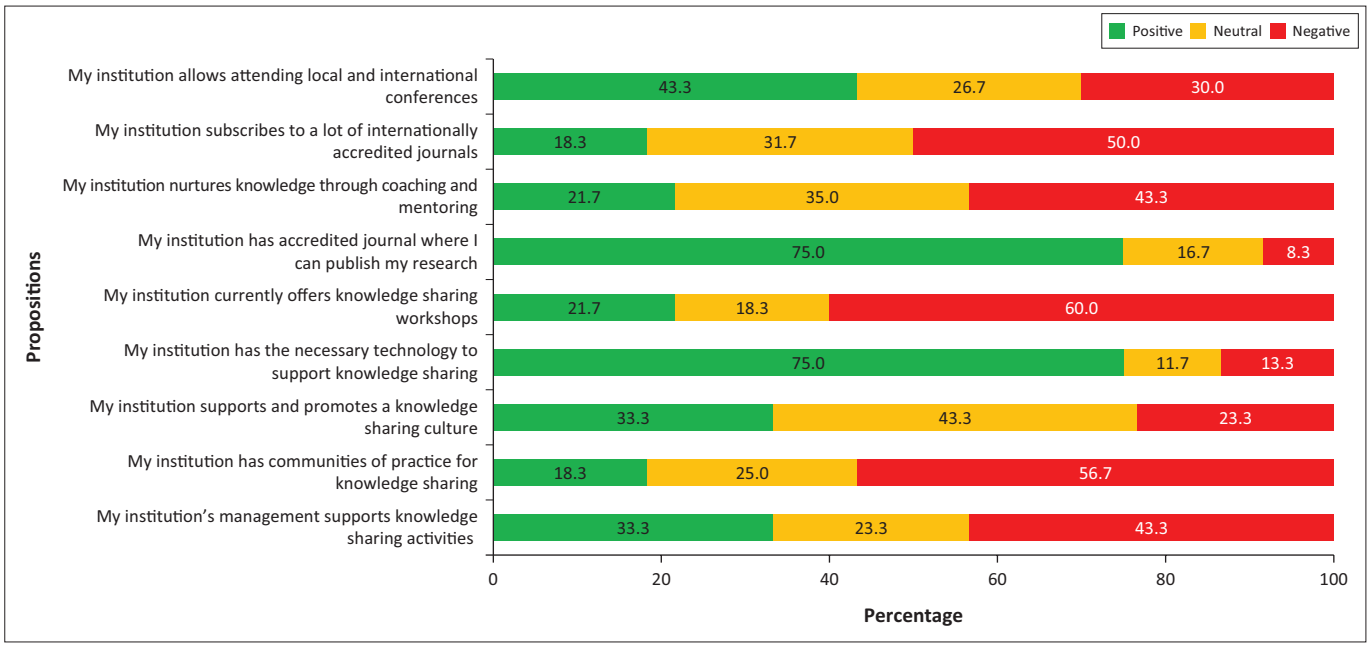


FIGURE 3: Knowledge-sharing practices for innovation in higher education (n = 240).

attendance of local and international conferences, specifically for knowledge-sharing. It further emerged as shown in Figure 3 that 26.7% of the participants were indecisive on their institutions allowing attendance of local and international conferences. On the same construct, exactly 30% of the participants were negative on the proposition that their institutions agree to attending local and international conferences. It therefore becomes explicit that HEIs should allow attendance of conferences for academics to share knowledge. International conferences establish connections and socialisation with acquaintances to gain a plethora of knowledge. The findings here corroborate with Cheng et al.[11] who established that institutions of higher education should allow attendance of local and international conferences for them to be innovative.

In most higher education norms, both locally and internationally, knowledge sharing and transfer is typically performed through peer-reviewed journal publications.[27] It was established by only 18.3% of the participants that their institutions subscribe to internationally recognised journals. On the same proposition, 31.7% of the participants were neutral on their institutions subscribing to internationally accredited journals. Exactly 50.0% of the participants had a negative view on their institutions subscribing to internationally accredited journals as shown in Figure 3. When one shares research results via publications, they essentially become part of the scientific community. Surely one benefits from the critique of other scholars in similar disciplines and exchange of ideas. We can therefore confirm that getting research published in accredited journals holds benefits for both the researcher and the institution hosting the journal.

Some of the most widely used techniques to nurture knowledge in HEIs include coaching and mentoring. As part of knowledge sharing, coaching focuses on immediate problems and opportunities.[15] It was also confirmed by only 21.7% of the participants that their institutions cultivate knowledge through coaching and mentoring. On the same proposition, 35% and 43.3% of the research participants were neutral and negative, respectively, on their institutions nurturing knowledge through coaching and mentoring. The importance of coaching to an academic and the institution is the perfection of an employee's skills that eventually lead to better institutional performance and innovation. From this finding, we can deduce that coaching and mentoring is partially practiced at the institutions of higher learning in Zimbabwe where this study took place.

Subscribing to international journals increases the visibility of scientific work. If a journal is on the elite listings for institutions of higher learning, then it is a good journal. Interestingly, 75.0% of the participants agreed that their institutions have accredited journals where they can publish their own research work. Also, 16.7% of the participants were neutral whilst 8.3% were negative on their institutions having accredited journals to publish their research. Reputable journals should provide open access to all peer reviewed articles.[28,29] Open access has increased readership because it is free for all and this is vital in advancing knowledge, especially in developing countries. Institutions and funders always expect researchers to publish in internationally accredited journals to increase credibility of the HEIs.

Lee[30] posit that workshops have a positive impact on an institution's innovation capabilities as they allow peers to collaborate and share knowledge. It is important to state here that workshops build professional relationships between and among academics at the HEIs, not only in developing countries but also in developed countries. It emerged that only 21.7% of the participants were optimistic that their institutions offer knowledge-sharing workshops. On the same premise, 18.3% of the participants were non-aligned on their institutions offering knowledge-sharing workshops

as shown in Figure 3. Surprisingly, a majority (60%) of the participants confirmed that their institutions do not offer knowledge-sharing workshops. From the submissions here, we can infer that institutions of higher learning partially offer knowledge-sharing workshops. Seminars and workshops permit an active interaction between and amongst academics in HEIs. Continuous interaction amongst academics paves a way to generate new knowledge, which will certainly contribute to an institution's innovation capabilities.

Innovation in HEIs is supported by appropriate technologies.[11,29] These technologies are therefore operated by competent and knowledgeable academics in HEIs. Interestingly, 75% of the participants established that their institutions have all the necessary technologies to support effective knowledge sharing. Such technology basically meant a computer, which is connected to a reliable Internet connection for research purposes. On the same construct, 11.7% of the participants were neutral on their institutions having all the necessary technology to support knowledge sharing. It also emerged that 13.3% of the partakers disagreed that their institutions have all the required technology to support knowledge sharing. Based on the empirical evidence gathered and presented here, we can therefore extrapolate that the institutions of higher learning have the necessary technology to support effective knowledge sharing.

A knowledge-sharing culture may certainly promote innovation in HEIs.[31,32] Such a knowledge-sharing culture should therefore be embedded in the academics of a specific HEI. It was confirmed by 33.3% of the participants that their institutions promote a knowledge-sharing culture. Also, 43.3% of the participants were indecisive on their institutions promoting a knowledge-sharing culture. On the same premise, 23.3% of the participants had negative views on their institutions supporting and promoting a knowledge-sharing culture. The findings here confirm that a knowledge-sharing culture is not yet fully embedded in the academics at the specific institutions studied and this may result in significant delays with regard to institutional innovation.

Wolfenden[14] described CoP as an approach where knowledge is transferred through formal or informal groups and he argues that a CoP provide access to new knowledge, which is very essential for innovation. Out of the 240 participants who partook in this study, only 18.3% of the participants agreed that they have CoP either in their respective departments. Also, 25% of the participants were neutral on their institutions having CoP for effective knowledge sharing. However, 56.7% of the participants confirmed that they do not have CoP for effective knowledge sharing. Communities of practice can foster trust and a sense of common purpose, confirming the ability to link academics for effective knowledge sharing. From the findings, we can underscore that institutions of higher education in developing countries have not yet fully adopted CoP as a tool for knowledge sharing. Reaburn and McDonald[33] established that CoP are very important for engagement in HEIs and they underscore that people should have time to participate. More so, CoP encourage knowledge sharing and provide instant feedback and collaboration amongst academics.

Executive support is imperative to support all knowledge-sharing undertakings[30,34] and 33.3% of the participants responded positively to this proposition. Also, 23% of the participants were neutral on their executive supporting knowledge-sharing activities. Nevertheless, 43.3% of the participants disagreed that knowledge-sharing activities at their institutions require executive support. From these findings, we can therefore deduce that executive support is very important to enable knowledge sharing but it is again not fully supported at the HEIs in Zimbabwe. Executive support stimulates cultural change and innovation by allowing free flow of ideas between and among academics and this support should be seen as an instrument for change by developing decisive strategies for knowledge sharing.

Conclusion and recommendations

In response to the research questions and objectives, this study established that HEIs in developing countries have not yet adopted all the knowledge-sharing practices. The institutions can only be innovative if they allow their academics to attend both local and international conferences for effective knowledge-sharing. Based on the empirical evidence, we can conclude and recommend here that institutions of higher learning should allow attendance of local and international conferences for them to be innovative. As 50% of the participants submitted that their institutions do not subscribe to internationally accredited journals, we can again conclude and recommend that all institutions of higher learning subscribe to internationally accredited journals. Effective knowledge sharing through publications is a catalyst and critical motivator for innovation. It was established by 22% of the participants that institutions of higher education foster knowledge through coaching and mentoring of junior academics. On the other hand, 43% of the participants submitted that their institutions do not nurture knowledge sharing through coaching and mentoring. We can further conclude and recommend that HEIs should immediately implement coaching and mentoring to perfect employee's skills that consequently lead to improved institutional performance. Both techniques focus on the future, creating the necessary change, which is needed by all the institutions of higher learning in developing countries such as Zimbabwe.

Majority (53%) of the participants submitted that their institutions do not offer knowledge-sharing workshops. From these submissions, we can deduce that the institutions of higher learning partially offer workshops for knowledge-sharing, which could be attributed by limited financial resources, a common trend in developing countries. The study therefore recommends adequate funding to transform institutions and improve quality of services. Innovation in higher education is supported by proper technologies and it was confirmed by 75% of the participants that their institutions have all the required technology for effective

knowledge-sharing. We can therefore draw conclusions that the investigated institutions of higher education have the necessary technology to support effective knowledge-sharing.

On the premise that a knowledge-sharing culture may promote innovation, 23% of the participants disagreed with the proposition. The findings therefore confirm that the knowledge-sharing culture is not fully embedded in the academics and this may result in a delay to institutional innovation. Based on empirical evidence from HEIs in a developing country, the study recommends a knowledge-sharing culture change to accelerate innovation. To realise innovation in HEIs, policies that support knowledge sharing should be put in place and these require executive support. This study recommends the creation of academic CoP for knowledge sharing in HEIs of developing countries.

Acknowledgements

The researchers would like to thank the participants from the higher education institutions identified in Zimbabwe.

Competing interests

The authors have declared that no competing interests exist.

Authors' contributions

A.H.M. collected that from institutions of higher learning and wrote this article. P.M. provided guidance as the supervisor of the study.

Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Data availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Disclaimer

The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of the author's institution or the funders.

References

1. Nowacki R, Bachnik K. Innovations within knowledge management. J Bus Res. 2016;69(5):1577–1581. https://doi.org/10.1016/j.jbusres.2015.10.020
2. Hassan NM. Increasing the pace towards an innovation economy in the Arab region. Int J Innov Knowl Manag Middle East North Africa. 2016;5(2):61–70. https://doi.org/10.47556/J.IJIKMMENA.5.2.2016.1
3. Farinha L, Nunes S, Ferreira JJ, Fernandes A. Understanding the foundations of global competitive advantage of nations. Compet Rev. 2018;28(5):503–517. https://doi.org/10.1108/CR-10-2016-0063
4. Ramjeawon, P. Rowley J. Knowledge management in higher education institutions: Enablers and barriers in Mauritius. Learn Organ. 2017;24(5):1–24. https://doi.org/10.1108/TLO-03-2017-0030
5. Farooq R. Developing a conceptual framework of knowledge management. Int J Innov Sci. 2019;11(1):139–160. https://doi.org/10.1108/IJIS-07-2018-0068
6. Moustaghfir K, Schiuma G, Moustaghfir K, Schiuma G, Schiuma G. Knowledge, learning, and innovation: Research and perspectives. J Knowl Manag. 2013;17(4):495–510. https://doi.org/10.1108/JKM-04-2013-0141
7. Zhou G, Luo S. Higher education input, technological innovation, and economic growth in China. Sustain. 2018;10(8):1–15. https://doi.org/10.3390/su10082615
8. Rees SJ, Protheroe H. Value, Kaizen and knowledge management : Developing a knowledge management strategy for Southampton Solent. Electron J Knowl Manag. 2009;7(1):135–144.
9. Rogers E. Adopter categorizations on the basis of innovativeness. Diffusion of innovations. 5th ed. New York, NY: Free Press; 2003.
10. Lee SM, Trimi S. Innovation for creating a smart future. J Innov Knowl. 2018;3(1):1–8. https://doi.org/10.1016/j.jik.2016.11.001
11. Cheng M, Ho JS, Lau PM. Knowledge sharing in academic institutions : A study of multimedia University Malaysia. Electron J Knowl Manag. 2009;7(3):313–324.
12. Laudon K LJ. Management information systems: Managing the digital firm. 14th ed. New York, NY: Pearson; 2020.
13. Bhusry M, Ranjan J, Nagar R. Implementing knowledge management in higher educational institutions in India: A conceptual framework. Liceo J High Educ Res. 2011;7(1):7–12. https://doi.org/10.5120/3527-4805
14. Wolfenden F. Learning in landscapes of practice: Boundaries, identity and knowledgeability in practice-based learning. London: Routeledge; 2015.
15. Hakro AN, Mathew P. Coaching and mentoring in higher education institutions: A case study in Oman. Int J Mentor Coach Educ. 2020;9(3):307–322. http://doi.org/10.1108/IJMCE-05-2019-0060
16. Turner T, Lucas MWC. Peer supervision in coaching and mentoring. A versatile guide for reflective practice. 1st ed. London: Routeledge; 2018.
17. Xie H, Chu HC, Hwang GJ, Wang CC. Trends and development in technology-enhanced adaptive/personalized learning: A systematic review of journal publications from 2007 to 2017. Comput Educ. 2019;140:103599. https://doi.org/10.1016/j.compedu.2019.103599
18. Barnes S. Aligning people, process and technology in knowledge management. 2nd ed. London: Ark Group; 2011.
19. Simmons R. Steps to implementing a knowledge management program at your organisation [homepage on the Internet]. 2013 [cited 2020 Apr 20]. Available from: http://focus.forsythe.com/articles/281/8-Steps-to-Implementing-a-Knowledge-Management-Program-at-Your-Organization
20. Leedy, P. Ormrod J. Practical research: Planning and design. 12th ed. Boston, MA: Pearson; 2016.
21. Hernon, P. Schwartz C. Reliability and validity. Libr Inf Sci Res. 2009;31(2):73–74. https://doi.org/10.1016/j.lisr.2009.03.001
22. Salkind N. Encyclopedia of measurement and statistics. 1st ed. Thousand Oaks, CA: Sage; 2015.
23. Surmiak A. Should we maintain or break confidentiality? The choices made by social researchers in the context of law violation and harm. J Acad Ethics. 2020;18(3):229–247. https://doi.org/10.1007/s10805-019-09336-2
24. Potter, L. Hoque M. Emerging techniques in applied demography. Dordrecht: Springer US; 2018.
25. Fernández-López S, Rodeiro-Pazos D, Calvo N, Rodríguez-Gulías MJ. The effect of strategic knowledge management on the universities' performance: An empirical approach. J Knowl Manag. 2018;22(3):567–586. https://doi.org/10.1108/JKM-08-2017-0376
26. Obeidat Y, Tarhini A, Masadeh RAN. The impact of intellectual capital on innovation via the mediating role of knowledge management: A structural equation modelling approach. Int J Knowl Manag. 2017;8(3):273–298. https://doi.org/10.1504/IJKMS.2017.10007246
27. Serdyukov P. Innovation in education: What works, what doesn't, and what to do about it? J Res Innov Teach Learn. 2017;10(1):4–33. https://doi.org/10.1108/JRIT-10-2016-0007
28. Ebersberger, B. Altman A. Universities in change: Managing higher education institutions in the age of globalization. 2nd ed. New York, NY: Springer, 2013.
29. Dee J. Universities, teaching and learning. In: Leisyte L, and Wilkesmann U, editors. Organizing academic work in higher education: Teaching, learning and identities. New York, NY: Routledge; 2016; 1–262.
30. Lee J. The effects of knowledge sharing on individual creativity in higher education institutions: Socio-technical view. Adm Sci. 2018;8(2):21. https://doi.org/10.3390/admsci8020021
31. Al-Kurdi O, El-Haddadeh R, Eldabi T. Knowledge sharing in higher education institutions: A systematic review. J Enterp Inf Manag. 2018;31(2):226–246. https://doi.org/10.1108/JEIM-09-2017-0129
32. Intezari A, Taskin N, Pauleen DJ. Looking beyond knowledge sharing: An integrative approach to knowledge management culture. J Knowl Manag. 2017;21(2):492–515. https://doi.org/10.1108/JKM-06-2016-0216
33. Reaburn P. McDonald J. Creating and facilitating communities of practice in higher education: Theory to practice in a regional Australian University. In: McDonald J, Cater-Steel A, editors. Communities of Practice. Singapore: Springer, 2017; p. 121–150.
34. O'Dell, C. Hubert CT. The new edge in knowledge: How knowledge management is changing the way we do business. Hoboken, NJ: Wiley; 2011.