



Knowledge Management System Implementation for Digital Transformation in Higher Education: A Systematic Literature Review

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ABSTRACT

Knowledge Management (KM) plays a strategic role in improving organizational performance and supporting digital transformation in higher education institutions. The rapid adoption of digital technologies, artificial intelligence, cloud computing, and learning management systems has increased the need for effective Knowledge Management Systems (KMS) to facilitate knowledge creation, sharing, storage, dissemination, and utilization. However, only a limited number of universities have systematically implemented comprehensive KM policies and practices across all organizational units. This study aims to examine the implementation of KM in higher education institutions, identify key KM practices and challenges, and formulate recommendations for strengthening KMS to support sustainable digital transformation. A Systematic Literature Review (SLR) was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Relevant articles indexed in the Scopus database and published between 2012 and 2026 were identified and retrieved using the Publish or Perish (PoP) application with the keywords "knowledge management" and "higher education." The findings indicate that knowledge-sharing activities in universities are still predominantly conducted through face-to-face interactions, although digital platforms and collaborative technologies are increasingly being adopted. Most institutions have reached Level 3 (Standardization) of KM maturity, indicating that standardized KM processes have been established, but their integration across organizational units remains limited. The review further demonstrates that effective KM implementation contributes positively to organizational culture, knowledge sharing, collaboration, innovation, organizational learning, and evidence-based decision-making. These findings emphasize the importance of developing integrated KMS strategies, strengthening digital infrastructure, fostering a knowledge-sharing culture, and enhancing institutional capabilities to accelerate digital transformation and improve the sustainability, adaptability, and competitiveness of higher education institutions..

1. INTRODUCTION

Knowledge is an intangible, essential, and valuable resource in an organization and a source of support for creating competitive advantage, namely the ability to have higher performance than other

organizations (Aerts et al., 2017). Organizations are shifting their focus from tangible assets such as plant and equipment to intangible assets such as knowledge, technology, and innovation (Obeidat et

al., 2016). Tangible assets are no longer considered to be the basis of competitive advantage. Combining tangible and intangible resources that are well-managed by implementing a strategy will create a sustainable competitive advantage (Mahdi & Nassar, 2021). Knowledge combines experience, values, contextual information, and expertise (Anantatmula & Kanungo, 2007).

2. LITERATURE REVIEW

Knowledge is derived from a hierarchy that starts from a variety of data that is packaged in such a way that it eventually becomes information. This various available information eventually becomes knowledge that can be used by interested parties to make decisions and policies. In the knowledge hierarchy, this is known as the DIKW hierarchy, namely Data, Information, Knowledge, and Wisdom. In an organization, knowledge is an asset used as a guide in managing and using all resources. Knowledge is the only resource that is maintained by sharing. By using and sharing it with every member of the organization, knowledge will develop and increase and be beneficial for the progress of the organization and the individuals in it.

Knowledge Management play an increasingly important role in organizations across various industries. Through Knowledge Management, organizations seek to acquire and create helpful knowledge and make it available to members of the organization. The knowledge that is available at the right time and place can be used by every member of the organization so that it can be helpful and used effectively, which ultimately positively affects organizational performance. Through knowledge management, data can be transformed into information, knowledge, and wisdom that can help organizations make better decisions and increase the achievement of organizational goals. Applying knowledge management in an organization is beneficial in improving customer service, increasing productivity, assisting organizations in making more informed decisions, increasing efficiency and effectiveness in processes and work methods, and saving time and costs. Knowledge management is a process that starts with knowledge creation, storage, dissemination, and, ultimately, how that knowledge is used.

Knowledge management is mainly carried out in research themes in higher education institutions. This research was conducted to develop and implement it to improve higher education performance. Tridharma higher education, as its primary task, is equipped with facilities and infrastructure that are recommended for fulfillment from the results of research on knowledge management. Some of these studies discuss several problems, including: the application of knowledge management during a pandemic, a comparison of the use of knowledge management in public and private universities in one country, the culture of knowledge management in the higher education system in one of the European countries, the implementation of knowledge management in the system higher education in Thailand, implementation of theses in higher education institutions in Indonesia, and others.

3. METHODOLOGY

The research design used in this research is descriptive. This research was conducted using the *systematic literature review* (SLR) method or systematic literature review by collecting data using the PRISMA method for studies that discuss knowledge management in higher education. Research using the SLR was conducted to obtain information derived from existing studies and sourced from specific databases, which in the study were obtained from the Publicist of Perish. The aim is to get an overview of any problems related to knowledge management in higher education institutions.

The population in this study was a study that discusses knowledge management whose articles are sourced from the Publish of Perish database. In contrast, the sample in this study is a problem in knowledge management in higher education institutions. In analyzing the problem, the questions are designed so that the research review is focused and structured. The PRISMA method can be visualized as follows.

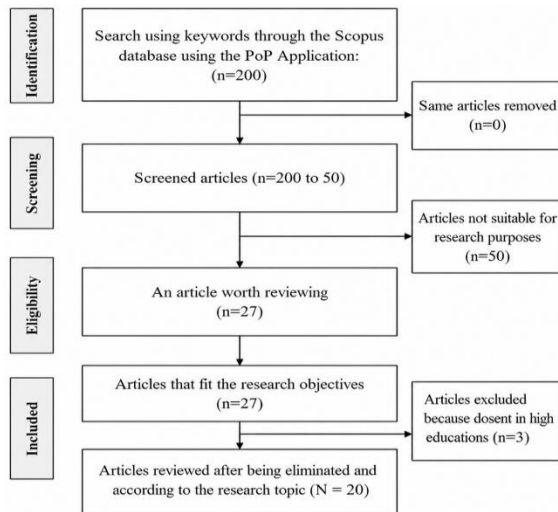


Figure 1. PRISMA model

In this study, a systematic literature review approach was used to identify and compare research on knowledge management based on the guidelines proposed by (Kitchenham & Charter, 2007). The search results obtained 120 articles grouped by type of article. These 120 articles will be selected based on the inclusion criteria. This process leaves 20 articles for later scanning of the data. The following table presents the 20 selected articles.

Table 1 Article Selection Results Discussed

No	Writer	Article title	Year
1	Marjan Laal	Knowledge management in higher education(Laal, 2011a)	2011
2	Pradit Songsangyos	The Knowledge Management in Higher Education in Chiang Mai: A Comparative Review (Songsangyos, 2012a)	2012
	Chun-Liang Chen, Tsang-Lang Liang	The Design and Implementation of a Blended Knowledge Management Course in Higher Education (Chen & Liang, 2011)	2012
	Seyeed farhad Eftekharzade, Batool mohammadi	The Presentation of a Suitable Model for Creating Knowledge Management in Educational Institutes (Higher Education) (Eftekharzade & Mohammadi, 2011)	2012
3	Horban, O., Babenko, I., Lomachinska, I., Hura, O., & Martych, R.	A Knowledge Management Culture In The European Higher Education System(Horban et al., 2021)	2021
4	Boluwaji A. Akinnuwesi, Adedoyin Odumabo and Benjamin S. Aribisala	Knowledge Grid: An Intelligent System for Collaboration and Knowledge Management in Nigerian Universities	2014
	Lamprini Trivella, Nasiopoulos K. Dimitrios	Knowledge Management Strategy within the Higher Education. The case of Greece (Trivella & Dimitrios, 2015a)	2014
	Óscar Fernández-Álvarez	The Gender Perspective in Managing Knowledge through CrossCurricular Studies in Higher Education (Fernández-Álvarez, 2014)	2014
	Bolormaa Demchig	Knowledge management capability level assessment of the higher education institutions: A case study from Mongolia (Demchig, 2015a)	2015
5	Yaying Mary Chou Yeh	The Implementation Of Knowledge Management System In Taiwan's Higher Education (Mary & Yeh, 2005)	2005
6	Lila Setiyani, Abdorrakhman	Implementation Knowledge Management in	2020

No	Writer	Article title	Year
	Gintings, Abin Syamsudin, Daeng Arifin	Management Thesis for Higher Education in Indonesia (Setiyani et al., 2020a)	
7	A. Sobandi, Edi Suryadi, M. Arief Ramdhany, Rasto Rasto	Knowledge Management Process, Knowledge Sharing, And Teacher Literacy Skills At Vocational High Schools (Sobandi et al., 2021a)	2021
14	Muhammad Younas, Ahmad Shukri Mohd Noor, Muhammad Arshad	Cloud-Based Knowledge Management Framework for Decision Making in Higher Education Institutions(Younas et al., 2022)	2021
	Ricardo Manuel Arias Velasquez, Jennifer Vanessa Mejia Lara	Knowledge Management in two universities before and during the COVID-19 effect in Peru (Arias Velásquez & Mejía Lara, 2021a)	2021
\15	Ruxandra Bejinaru, Cristina Prelipcean, dan kolega	Impact of Knowledge Management Strategies on Academic Performance in the Context of the Transition to Education 4.0 (Dovleac & Cărmădaru, 2023)	2022
16	M. H. Alimuddin, dkk.	Knowledge Management Systems in Higher Education: A Comprehensive Study through Systematic Literature (Alimuddin & others, 2023)Review and Bibliometric Analysis (2019–2023)	2023
17	Anna Maria Tammaro dan kolega	Knowledge Management Practices in Higher Education Institutions: A Systematic Literature Review(Tammaro & others, 2024)	2024
18	Nidhi Sharma, et al	Knowledge Management Practices in the Universities: A Qualitative Study(Sharma & others, 2025)	2025
19	Yogesh K. Dwivedi, et al	Generative AI and Knowledge Management in Higher Education(Dwivedi & others, 2025)	2025
20	Muhammad Rafiq, et al	Global Research Trends in Knowledge Management in Higher Education: A Bibliometric Analysis (Rafiq & others, 2026)	2026

4. DATA ANALYSIS

The paradigm of economic-based industrial competition has shifted to become a knowledge and information-based industry. This shift has also impacted various organizational sectors, including educational organizations. Currently, organizations cannot rely on excellence in the form of resources only but also crucial with knowledge management. The resources owned by the organization are not only in the form of financial resources, facilities, workers, and so on but, most importantly, in the form of knowledge owned by the organization.

Recognizing that there will be increasingly competitive competition, it is necessary to change

the old paradigm from originally relying on resource-based competitiveness to become knowledge-based competitiveness, which can be realized in work techniques, socialization methods, HR management, as well as the equipment or facilities used to increase excellence in organizations. In concrete practice, organizations must have mastery of knowledge consisting of technical devices (*technoware*), human devices (*humanware*), information devices (*infoware*), and organizational tools (*orgaware*) (Haedi & Pontianak, 2021).

Based on the results of a review of several articles that, the implementation of KM is carried out in various ways using either conventional or non-

technology and using information technology. The results of a review of several articles are presented as follows.

Table 2 . KM Implementation Methods in Higher Education

Implementation Media	Amount	Percentage (%)
Conventional	15	75
Web-based	2	10
Blended (LMS and Conventional)	2	10
Cloud-Based	1	5
Count	20	100

Based on the table 2 above, the trend of implementing KM in tertiary institutions is still being carried out conventionally face-to-face with 10 articles. KM that has been implemented uses web-based technology 1, blended 1, and cloud-based 1. Furthermore, the implementation of Knowledge Management in tertiary institutions can be divided into five levels as follows.

Table 3. KM Implementation Level

Implementation Level	Amount	Percentage (%)
Level 1 Initiate	0	0
Level 2. Develop	6	30
Level 3. Standardize	9	45
Level 4. Optimize	3	15
Level 5. Innovate	2	10
Count	20	100

Based on Table 3 above, many KM implementations are at the standardized level, meaning that it is the stage where the various processes and approaches needed to develop knowledge in an organization begin to be developed. In the second position, KM is still at the development level, which means the development of groups or units within an organization to spearhead the mutual sharing of knowledge, both techniques, methods, equipment, and technology within the organization. In the third position, the KM implementation level is optimized, which means that KM has been implemented, and its

effectiveness is measured in supporting progress in the organization. In the fourth position, the KM level is Innovate, which means that the organization has been able to take advantage of the application of KM and has become a culture and way of acting for each of its members, which is indicated by the increased productivity of every human resource in an organization. Whereas in the last position, there is no percentage where all organizations have been able to show that the implementation of KM has been supported by various related parties and disseminated to all units. The impact of knowledge management in various tertiary institutions varies greatly according to the situation and conditions in each tertiary institution. The following table presents the impact of implementing knowledge management in tertiary institutions.

Table 4. The Impact of KM on an Organization

KM impact	Amount	Percentage (%)
Literacy	3	15
Attitude	5	25
organizational culture	9	45
Innovation	2	10
Motivation	4	20
Count	20	100

Based on the table 4 above, KM has more impact on organizational culture, attitudes, motivation, and literacy. The impact of KM on the ability to innovate is the lowest. This is related to the level of KM implementation, which is more at the level of standardization. Only a few organizations have reached the level of optimization and innovation.

5. DISCUSSION

KM is a systematic process in which the knowledge required for a successful organization is created, scaled up, collaborated on, and utilized (Demchig, 2015b; Laal, 2011b). At present, the pace of evolution has entered a rapid pace, and those who cannot learn, adapt, and change from time to time will not survive. Various organizations have adopted knowledge management as an organizational strength. Implementation of Knowledge Management is a process for creating, documenting, sharing, and updating

knowledge within an organization which is supported by the company's main pillars, which include leadership and technology so that it becomes a culture of *sharing knowledge* within an organization (Arias Velásquez & Mejía Lara, 2021b). The use of technology and software through web platforms will tend to increase collaboration in knowledge management. Knowledge management in tertiary institutions has different levels of implementation. In government universities, the implementation of KM can be classified as moderate, and in private institutions, it is high (Songsangyos, 2012b). This is due to differences in organizational culture and management processes applied to each institution. The impact is that every organization must concentrate on the vision and mission of each institution.

A knowledge management system defines the development and growth of any organization. It is essential that a knowledge management system is implemented using technology to facilitate communication between units and between universities (Akinuwaesi et al., 2020). KM has a reasonably high impact on organizational culture. This is inseparable from the role of leadership. Appropriate leadership will ensure a culture of sharing knowledge occurs (Yeh, 2005). Besides that, the success of KM is very dependent on each individual's motivation, attitude, knowledge, and skills (Trivella & Dimitrios, 2015b).

The impact of KM also increases literacy in HR in an organization. The knowledge base allows HR to continue learning and cannot be separated from special literacy in reading and technology literacy. The existence of various knowledge activities has a positive impact on improving literacy skills.

6. CONCLUSION

Implementing knowledge management in an organization will prevent the organization's loss of *knowledge* caused by missing employees because the employee retires, moves, or dies. The study results show that KM is more socialized face-to-face in universities. The average KM implementation level is at level 3, namely, standardize, and the impact of KM tends to affect organizational culture.

REFERENCES

- Aerts, G., Dooms, M., & Haezendonck, E. (2017). Knowledge transfers and project-based learning in large scale infrastructure development projects: An exploratory and comparative ex-post analysis. *International Journal of Project Management*, 35(3), 224–240. <https://doi.org/10.1016/j.ijproman.2016.10.010>
- Akinuwaesi, B. A., Odumabo, A., & Aribisala, B. S. (2020). Knowledge grid: An intelligent system for collaboration and knowledge management in Nigerian universities. *Data Science Journal*, 19(1), 1–16. <https://doi.org/10.5334/dsj-2020-002>
- Alimuddin, M. H., et al. (2023). Knowledge management systems in higher education: A comprehensive study through systematic literature review and bibliometric analysis (2019–2023). *Eastasouth Management and Business Journal*. <https://esj.eastasouth-institute.com/index.php/esmb/article/view/185>
- Anantatmula, V. S., & Kanungo, S. (2007). Modeling enablers for successful KM implementation. *Proceedings of the Annual Hawaii International Conference on System Sciences*. <https://doi.org/10.1109/HICSS.2007.387>
- Arias Velásquez, R. M., & Mejía Lara, J. V. (2021). Knowledge management in two universities before and during the COVID-19 effect in Peru. *Technology in Society*, 64, 101479. <https://doi.org/10.1016/j.techsoc.2020.101479>
- Chen, C. L., & Liang, T. L. (2011). The design and implementation of a blended knowledge management course in higher education. *Procedia Engineering*, 15, 4152–4156. <https://doi.org/10.1016/j.proeng.2011.08.779>
- Demchig, B. (2015). Knowledge management capability level assessment of the higher education institutions: Case study from Mongolia. *Procedia - Social and Behavioral Sciences*, 174, 3633–3640. <https://doi.org/10.1016/j.sbspro.2015.01.1082>
- Dovleac, R., & Cărămidaru, I. (2023). Impact of knowledge management strategies on academic performance in the context of the transition to Education 4.0. *Research and Education*, (8), 22–37. <https://doi.org/10.56177/RED.8.2023.ART.2>
- Dwivedi, Y. K., et al. (2025). Generative AI and knowledge management in higher education. *Journal of Knowledge Management*. <https://www.emerald.com/insight/journal/jkm>
- Eftekharzade, S. F., & Mohammadi, B. (2011). The presentation of a suitable model for creating knowledge management in educational institutes (higher education). *Procedia - Social and Behavioral Sciences*, 29, 1001–1011. <https://doi.org/10.1016/j.sbspro.2011.11.334>
- Fernández-Álvarez, Ó. (2014). The gender perspective in managing knowledge through cross-curricular studies in higher education. *Procedia - Social and Behavioral Sciences*, 161, 269–274. <https://doi.org/10.1016/j.sbspro.2014.12.070>
- Haedi, R. P., & U. T. Pontianak. (2021). Implementasi manajemen pengetahuan (knowledge management) dan dampaknya terhadap usaha kecil dan menengah (UKM) di Kota Pontianak. [Publication details not provided], 157–166.

- Horban, O., Babenko, L., Lomachinska, I., Hura, O., & Martych, R. (2021). A knowledge management culture in the European higher education system. *Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu*, 2021(3), 173–177. <https://doi.org/10.33271/NVNGU/2021-3/173>
- Laal, M. (2011). Knowledge management in higher education. *Procedia Computer Science*, 3, 544–549. <https://doi.org/10.1016/j.procs.2010.12.090>
- Mary, Y., & Yeh, C. (2005). The implementation of knowledge management system in Taiwan's higher education. *Journal of College Teaching & Learning*, 2(9), 35–42. <https://doi.org/10.19030/tlc.v2i9.1861>
- Obeidat, B. Y., Hashem, L., Alansari, I., Tarhini, A., & Al-Salti, Z. (2016). The effect of knowledge management uses on total quality management practices: A theoretical perspective. *Journal of Management and Strategy*, 7(4), 18–29. <https://doi.org/10.5430/jms.v7n4p18>
- Rafiq, M., et al. (2026). Global research trends in knowledge management in higher education: A bibliometric analysis. ResearchGate. https://www.researchgate.net/publication/400341205_Global_Research_Trends_in_Knowledge_Management_in_Higher_Education_A_Bibliometric_Analysis
- Setiyani, L., Gintings, A., Syamsudin, A., & Arifin, D. (2020). Implementation knowledge management in management thesis for high education in Indonesia. *Rekayasa*, 13(2), 144–153. <https://doi.org/10.21107/rekayasa.v13i2.5909>
- Sharma, N., et al. (2025). Knowledge management practices in the universities: A qualitative study. *SAGE Open*. <https://doi.org/10.1177/21582440251357152>
- Sobandi, A., Suryadi, E., Ramdhany, M. A., & Rasto. (2021). Knowledge management process, knowledge sharing, and teacher literacy skills at vocational high schools. *Jurnal Cakrawala Pendidikan*, 40(3), 738–749. <https://doi.org/10.21831/cp.v40i3.42489>
- Songsangyos, P. (2012). The knowledge management in higher education in Chiang Mai: A comparative review. *Procedia - Social and Behavioral Sciences*, 69, 399–403. <https://doi.org/10.1016/j.sbspro.2012.11.426>
- Tammaro, A. M., et al. (2024). Knowledge management practices in higher education institutions: A systematic literature review. IFLA Repository. <https://repository.ifla.org/items/956687a1-d9cb-4afa-93b4-d96d94aa80c6>
- Trivella, L., & Dimitrios, N. K. (2015). Knowledge management strategy within the higher education: The case of Greece. *Procedia - Social and Behavioral Sciences*, 175, 488–495. <https://doi.org/10.1016/j.sbspro.2015.01.1227>
- Younas, M., Noor, A. S. M., & Arshad, M. (2022). Cloud-based knowledge management framework for decision making in higher education institutions. *Intelligent Automation & Soft Computing*, 31(1), 83–99. <https://doi.org/10.32604/iasc.2022.018332>