



Examining the impact of knowledge management on the performance of private universities in Jiangxi, China: The critical role of artificial intelligence

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ABSTRACT

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Keywords

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The study examined the role of knowledge management practices by taking artificial intelligence as a moderating variable and their impact on the performance of private universities in Jiangxi, China. There is minimal research on knowledge management in private universities in China. This study aims to close this gap. The study used a quantitative methodology and a cross-sectional survey design of 110 faculty members as a sample size. The survey was conducted in three private universities in Jiangxi China. A structured questionnaire using a 5-point Likert scale was used to collect the data. Descriptive statistics, moderating, and multiple regression tests are conducted using SPSS. The findings suggest that knowledge acquisition ($B=0.236$ and $p<0.001$), creation ($B=0.469$ and $p<0.001$), and sharing ($B=0.381$, and $p=0.001$) positively impact performance in private universities. However, knowledge integration ($B=-0.257$ and $p=0.042$) does not have a direct relation with performance. Furthermore, artificial intelligence was found to be a significant factor that enhances the performance of universities by effective management of various knowledge management practices. This study also informs government, academic institutions and policymakers to form guidelines and frameworks for integrating AI education to enable easy acceptance of the tools to gain academic excellence.

Contribution/Originality: This study is one of the first to examine the impact of artificial intelligence use in knowledge management in private universities in China. This will encourage investment in this area of AI tools towards redefining teaching practices and learning methods.

1. INTRODUCTION

Currently, it has become pivotal for organizations to gain knowledge and use it efficiently to gain a competitive advantage. Mahdi, Nassar, and Almsafir (2019) stated that acquiring knowledge indicates that this should be the foremost resource of the organization, specifically when it comes to private colleges and universities. In the fast-changing world, private universities are faced with fundamental changes in the political, economic, and social aspects. This has resulted in the embarking of aggressive competition among them which also includes the public universities. Private universities are faced with multifaceted challenges in attaining their objectives because they have to operate with restricted resources compared to their public rivals. In the worldwide economy of the 21st century, expanding the economic worth of the organization and achieving sustainable competitive advantage would

be challenging and a knowledge-based task for private universities. In this context, quick and hard information exchange has become one of the sources of competitive advantages and can be achieved with proper knowledge management (KM). Knowledge management has become a contemporary strategic weapon and a powerful resource for private universities to stay ahead of the competition by effectively managing knowledge capital. Additionally, Piracha, Tani, Zimmermann, and Zhang (2022) mentioned that China has undergone a massive higher education expansion due to its growing population. In this context, creating world-class universities in China needs proper education policies and the accumulation of knowledge to train them for a knowledge-based economic environment.

China is one of the largest higher education markets followed by the United States and India. The total number of student enrolments in private universities has reached approximately 5.2 million in 2022 (Statista, 2024). However, higher education in China is faced with unprecedented worldwide challenges due to fierce competition and the need for greater efficiency. Though the Chinese government is making constant efforts to improve access to and quality of education, there is still room for more quality education services by reliable private education providers (Yu, 2018). It cannot be denied that private higher education is among the swiftest growing segments in China. However, it is at the stage of redevelopment and faced with concerns. For example, the population of China is one-fifth of the world's total population and when one makes a comparison between its private education sector and other nations in Asia and even worldwide, it is far behind. There is an enormous space for China to develop in terms of knowledge. The demand for higher-quality education is growing and it is expected that the private education sector will make a significant difference in meeting this demand.

In this context, China has revealed the power of artificial intelligence (AI) and its application in various sectors including education. China is strategically modernizing its private higher education sector as a launching pad for talent to achieve its goals of offering quality education and enhancing the performance of its private education sector. From the perspective of knowledge management, China's Ministry of Education approved the use of AI in about 35 universities in 2019 to integrate creativity and critical thinking in the knowledge management process within the educational category (Jain, 2020). Hence, innovation and AI signify tremendous growth and benefits for managing knowledge in private universities.

1.1. Research Aim

The report aims to evaluate the impact of knowledge management on the performance of private universities in Jiangxi, China. This will explore the integration of artificial intelligence into knowledge management practices and its impact on the performance of private universities in Jiangxi, China.

1.2. Research Questions

This paper is a survey-based study on the role of artificial intelligence in managing knowledge management in Chinese universities. The research questions will be addressed in this paper: (1) What are the different knowledge management practices that can be incorporated to enhance the performance of private universities in Jiangxi, China? (2) How does knowledge management impact the performance of private universities in Jiangxi, China? (3) How can artificial intelligence be used for knowledge management in private universities in Jiangxi, China?

1.3. Objectives of the Research

- To examine different knowledge management practices that can be incorporated to enhance the performance of private universities in Jiangxi, China.
- To assess the impact of knowledge management on the performance of private universities in Jiangxi, China.
- To explore artificial intelligence practices that can be used for knowledge management in private universities in Jiangxi, China.

1.4. Research Significance

The final intention of this paper is to help policymakers, researchers, and university administrators identify possible ways through which universities can make use of AI to develop strategies for expanding their knowledge base. Additionally, this research aims to contribute to the growing body of knowledge in areas like knowledge management and artificial intelligence. This will not only guide academic organizations like universities, however, also hold prominence for corporate leaders towards harnessing the power of AI in managing their knowledge base. This will assist in developing knowledge management strategies to thrive in the era of digital transformation. As organizations embrace digitalization, this will enable them to proactively address challenges unlock new efficiencies in driving innovation and gain a sustainable competitive advantage by creating a knowledge-intensive business landscape.

1.5. Structure of the Paper

The content of the paper is organized as follows: Section 1 includes an introduction that contains the research background, aim, objectives, and significance. Section 2 includes a literature review that examines past studies conducted on the relevant topic and forms the theoretical background for this paper. Section 3 outlines a methodology for the research and how this research will be carried out including the measuring scales. Section 4 includes the result interpretation gained through statistical analysis. Section 5 offers answers to the research question by examining the results against the previous studies. Sections 6 and 7 include the conclusion that contains the major findings and implications of the study.

2. LITERATURE REVIEW

2.1. Knowledge Management (KM)

Knowledge management (KM) is the method of deliberate and systematic coordination of information and resources inside an organization and adding value through reuse and innovation. This is mainly achieved through the formation, distribution, and application of knowledge and also by feeding best practices and valuable teachings into the organizational memory (Ojo, 2016). This is vital for the application of existing knowledge towards achieving goals and objectives and at the same time, developing a culture that permits further knowledge creation.

2.2. Artificial Intelligence (AI)

Artificial intelligence is not just a technology or set of technologies but a constant evolution of emergent computing competencies. Current AI technologies comprise robotics, facial recognition, autonomous vehicles, natural language processing and virtual agents of all types and are increasingly used in various sectors for enhancing operational efficiency (Berente, Gu, Recker, & Santhanam, 2021). By 2020, more than half of enterprises are using some form of AI and this adoption is growing at a faster pace as it offers invaluable possibilities in areas like education, employment, entertainment, and other sectors.

2.3. Knowledge Management in Private Universities

2.3.1. Knowledge Acquisition and Creation in Private Universities

Knowledge management involves obtaining, generating, integrating, and sharing information to expand performance and learning. According to Abker, Mohamed, Ibrahim, and Eltayeb (2019) when an organization confirms the required level of information, it first defines the cognitive gap that needs to be filled in terms of knowledge acquisition. In this context, it either looks inside or demands external sources that can assist in evolving its competences for attaining the needed knowledge. For example, the organization sometimes buys technology from the market and then makes it cooperate with its resources through unification; thereby, it helps in attaining the type of knowledge that is required. The process includes a new application of knowledge or the replacement of

the existing content inside the organization's explicit and tacit knowledge to enhance the absorptive capability of an organization by identifying external data sources that are vital for its operations. Additionally, Matar and Raudeliūnienė (2021) mentioned that with knowledge acquisition, private universities seek to improve their quality of education which further assists them in gaining excellence in their educational programs. Universities as learning organizations are anticipated to be vigorously involved in knowledge advancement and creation due to social pressure and satisfy the need of graduates to adapt to job market fluctuations. This necessitates universities to constantly obtain knowledge from both their internal and external environments. For example, the integration of technological tools, research, industry collaboration, academic and professional networks and conferences are the possible resources through which a private university engages in knowledge acquisition, thereby enhancing its academic performance. A similar pattern was observed in China by Li and Zhu (2021) while researching knowledge transfer in universities with the help of technology integration. The study found that incorporating technology in universities for knowledge transfer has enabled the overall learning process and willingness to gain competitive advantages in the digital era.

Knowledge creation is the process of continuous practices and processes that take place with the interaction of individuals and the environment. This results in the introduction of new knowledge and learning offers the utilization of unique value by students and professors (Matar & Raudeliūnienė, 2021). Su, Lu, Su, and Wang (2023) argued that universities create knowledge with inter-departmental communication, openness of places, and a distraction-free environment enabling them to achieve the efficiency of innovation space. Moreover, collaborative learning on national and international levels conducts experiments and leverages technology integration towards fostering the creation of knowledge. For example, the Nanchang University of Aeronautics and Astronautics in Jiangxi, China collaborated with various corporations including BCMaterials to assist in knowledge exchange between professors, students, and researchers through conferences, classes, holding talks, and the creation of a joint laboratory, thereby allowing the common research achievements (News, 2023). This enables the professor and students to engage in applied research and upskill themselves towards bringing innovation inside the university premises.

Similarly, Weiyinge and Segumpan (2024) conducted a study on private schools in Jiangxi, China on the incorporation of technology for gaining educational modernization and improving the performance of the institutions. Educational modernization is a dynamic process that includes knowledge management with the upgradation of teaching methods, curricula, and the adoption of advanced technologies like artificial intelligence to prepare faculties and students to deal with future challenges. Integrating digital tools and platforms was found to be effective in enhancing the learning experience and facilitating knowledge creation with personalized education. Such transformation was driven to remain competitive in a market and improving both teaching efficacy and student outcomes with tech-enabled knowledge management strategies. The literature provides strong evidence that knowledge management contributes towards enhancing the excellence of organizations' activities, both in the public and private sectors.

H₁: Knowledge acquisition positively impacts the performance of private universities.

H₂: Knowledge creation positively impacts the performance of private universities.

2.3.2. Knowledge Integration and Sharing in Private Universities

Knowledge integration is the process of combining the knowledge that is gained from internal and external sources by the universities to generate an innovative learning environment. According to Linn et al. (2018) knowledge integration takes place with the designing of instruction, assessment, technological integration, and professional development. For example, the use of a web-based inquiry science environment in learning organizations supports authoring and customization of instruction, categorization of student interactions with simulations, random assignments, and virtual experiments, which are used for students to integrate and make sense

of knowledge gained and acquired (Al-Qarioti, 2015). Moreover, the integration of knowledge acquired through technology in simulations can allow students to engage in projects by permitting them to manipulate variables, make planning and conduct virtual examinations and research, and collect and conduct data analysis. Hence, this will allow them to expand their understanding of complex scientific phenomena (Linn et al., 2018). Overall, such knowledge integration of theoretical aspects by the students into real-world scientific phenomena enables both universities and students to elicit novel ideas, add new ideas, differentiate the ideas from other institutions, and sort them into an intelligible framework.

H₂: Knowledge integration positively impacts the performance of private universities.

Knowledge sharing involves the dissemination of knowledge to improve the work system and enhance decision-making. According to Abker et al. (2019), this is transferring total knowledge by converting it into a form that is understandable and easily absorbed by others. Knowledge sharing in universities increases innovation and creativity (Elrehail, Emeagwali, Alsaad, & Alzghoul, 2018). For example, Anwar (2017) stated that knowledge sharing can be done through various methods like making the project teams internally diverse, using of intranet, acquiring training from old colleagues (Akpotu & Lebari, 2014) internal community building, documents, knowledge agents, expert teams, learning workshops, knowledge rings, social media, open access journals, discussion forums, collaborative research projects, mentoring, peer learning, learning management systems and so forth. Nassuora (2011) mentioned the possible benefits involve breaking down barriers, increasing competitiveness and receptiveness for research grants, and commercial opportunities, reducing time for research, increasing responsiveness associated with learning and teaching with technology, enhancing the efficiency of faculty, student services staff, academic support staff, and ultimately producing a learning organization which is open to market trends.

Additionally, Geng, Chen, Li, and Iqbal (2023) conducted a study on provincial regions in China, including Hunan, Jiangxi, and Hubei on collaboration among higher education in universities and the digital economy. The research highlights that there is a positive relationship between digitalization and higher education as they contribute towards creating better sustainable development of society. Academic professions have developed innovative ideas for teaching and conducting research activities and university-enterprise cooperation with the incorporation of cutting-edge technologies. For example, universities in China have constructed many access-friendly platforms for teachers and students for online knowledge sharing by embracing the digital economy. Teachers use these platforms to share and publish articles and videos conveniently which enables easy access by students who can read or watch them as learning materials at their convenience, hence fostering collaboration and knowledge management.

H₃: Knowledge sharing positively impacts the performance of private universities.

2.3.3. Role of Artificial Intelligence in Knowledge Management

The application of AI algorithms and systems in the education sector has gained popularity. In terms of knowledge acquisition, universities are making use of AI tools to gather vast amounts of data for research papers and access online databases and make them stay ahead and updated on trends and innovations in the education sector (Chen, Chen, & Lin, 2020). For example, the use of machine learning, data mining, and psychometrics of statistics assists students in researching emerging research topics by creating recommendations as they select classes or their domain. This mainly uses data and preferences of students to match their needs in areas where they want to be developed. Similarly, technology further assists professors and teachers in gaining ideas and a proper understanding of the topic and every concept. Similarly, they are more powerful in adjusting the teaching materials to work well based on students' cumulative records and preferences, which assist them in better grasping the subject matter. For instance, Chen, Argentinis, and Weber (2016) contended that many researchers use IBM Watson to analyze big data sets, making them advance research faster and acquire specific knowledge. This assists

in enhancing the knowledge creation process and makes the universities innovative by enabling fast-forward thinking.

Artificial intelligence has surpassed human abilities. [Dodgson and Gann \(2017\)](#) mentioned that according to the report of the World Economic Forum, the most innovative AI breakthroughs like Magic Pony, Deep Mind, Improbable and Wolfram Alpha have their origins in universities. Artificial intelligence is the new scientific infrastructure for universities to make them research and learn or else they will become redundant. For example, universities increasingly make use of “Deep Mind AI” for improving their scientific research in terms of formulating hypotheses, designing, data analysis, and running experiments. Additionally, AI is integrated by researchers in private universities such as Reed Elsevier to automate their systematic academic literature reviews, where they can easily check for plagiarism issues. Moreover, the use of machine learning is incorporated to identify unethical behaviour in research works before their publication. This saves the universities from engaging in unethical learning processes, thereby securing their reputation and efficiency. Similarly, the integration of AI also entails the automation of routine tasks like grading assignments. This enables providing timely feedback which further assists in knowledge management through identifying areas of gap and learning patterns that enable the professors and tutors to design personalized programs for slow learners. [Dai, Sukor, Said, and Sun \(2025\)](#) further mentioned that AI is widely used in private universities in China for blended learning. Blended learning involves offline and online teaching methods to enhance educational informatization. About 65.4% of universities have adopted this method to enhance knowledge management in academic settings. For example, incorporating technologies like artificial intelligence, big data, and cloud computing has enabled universities to innovate and identify new possibilities for education models ([Dai et al., 2025](#)). China has made significant progress in digital teaching methods and resources with the launch of the ten-year development plan for educational informatization. Such integration of blended learning with AI tools has fostered an environment in Chinese universities that supports knowledge management with effective knowledge creation and sharing among teachers and students. Hence, incorporating AI in academic settings has enabled the universities to develop comprehensive resource allocation strategies enabling faster knowledge acquisition and transfer giving them a competitive edge in the industry.

In terms of knowledge sharing, universities in China are making use of AI chatbots, virtual assistants, and collaborative AI platforms to enhance collaboration among students and faculties. [Wang and Xue \(2024\)](#) opined that AI-enabled platforms are pivotal in generating an interactive learning atmosphere that enhances the motivation of students and makes them engaged. This is due to timely and accurate feedback from professors. This further opens up new avenues of discussion that enable students to frequently be involved in the learning environment. There is a common belief that when AI is integrated into knowledge sharing, it brings benefits to teachers and learners. For example, a more inclusive learning climate with “interactive exercises” and “virtual reality environments” can be developed by teachers that help in satisfying the diverse needs of the learners, thereby enhancing academic growth and development of universities. [Qazi et al. \(2024\)](#) further highlighted various AI-enabled platforms that assisted in enhancing the performance of universities. One such system is the Learning Management System (LMS) which is a software tool that empowers students for individual learning through which curriculum and other academic tools like lectures and other materials and widely shared and accessed inside the university. Similarly, ChatGPT and Google Bard are used for knowledge generation. However, they have increased apprehension by academics where academic misconduct has become a concern. In this context, utilizing smart AI algorithms and AI-enabled software like Turnitin are widely used to assist universities in detecting plagiarism issues.

[Yuan \(2024\)](#) argued that robotic teaching and the incorporation of AI have reduced teachers’ pedagogic decisions and professional judgment because no personalized learning process requires extensive use of computers which has limited interaction for pedagogic dialogue and critical thinking among the learners and tutors. It is anticipated that this could create a digital divide and enhance inequalities due to the lack of human interaction.

Overall, on the positive side, AI has enabled universities to redefine their teaching patterns unlike traditional methods, personalize learning experiences, enhance real-time feedback and support teachers and learners, and attract new learners (Gatuyu & Kinyua, 2020) with advanced tools and insights to enable effective knowledge management and enhance efficiency. Bhutoria (2022) also mentioned that the advent of computer-aided teaching and data-driven AI tools has enabled creation of personalized learning with the delivery of knowledge through e-learning platforms and cloud classrooms. This has further enabled the professors to get rid of the monotonous and repetitive tasks of preparing lesson plans and answers with AI-powered assessment systems and content augmentation. Thereby, enabling faster knowledge sharing and acquisition by creating flipped classrooms, making the universities reduce teachers' workload and achieve all-round holistic development of the education system.

H₃: Artificial intelligence moderates knowledge acquisition towards enhancing performance in private universities.

H₄: Artificial intelligence moderates knowledge creation towards enhancing performance in private universities.

H₅: Artificial intelligence moderates knowledge integration towards enhancing performance in private universities.

H₆: Artificial intelligence moderates knowledge sharing towards enhancing performance in private universities.

Independent variables

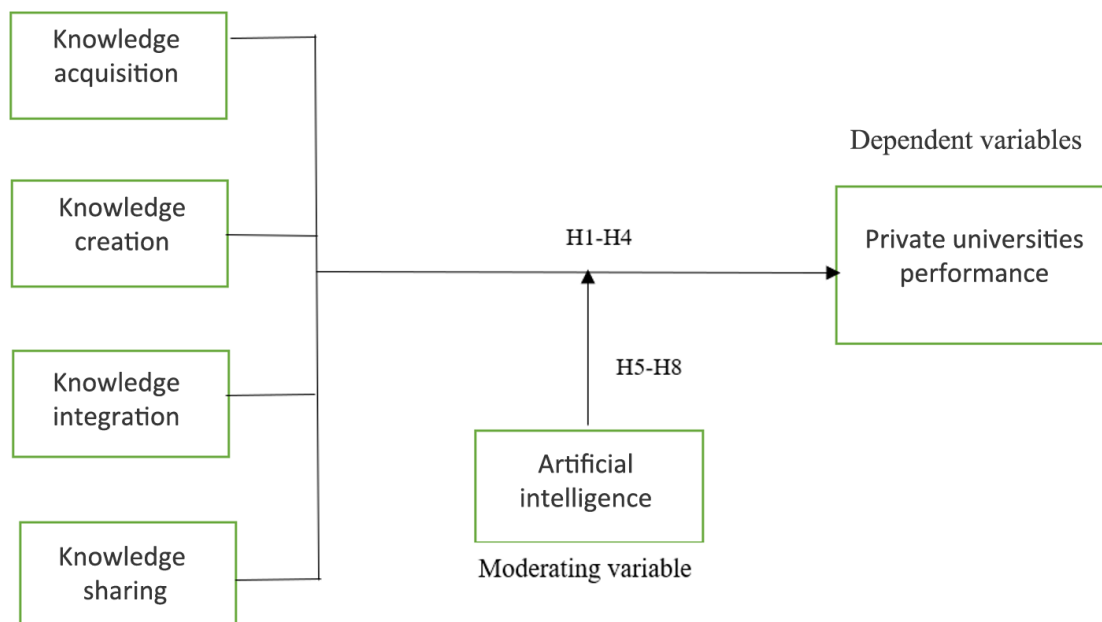


Figure 1. Conceptual framework.

Figure 1 illustrates the visual representation of the hypothesis development. This demonstrates that knowledge management practices in private universities take place in four different forms namely acquisition, creation, integration, and sharing. Artificial intelligence is demonstrated as a moderating variable to enhance the knowledge management and performance of private universities in China.

2.4. Theoretical Framework

The SECI model is the crucial theoretical foundation for this study. It was developed by Nonaka and Takeuchi and the acronym stands for socialization, externalization, combination, and internalization (Bandera, Keshtkar, Bartolacci, Neerudu, & Passerini, 2017; Natek & Zwilling, 2016). Socialization can be used for shared creation and communication of tacit knowledge among people inside the universities. Secondly, externalization is applied when tacit knowledge is converted to new explicit knowledge in the form of pictures and written texts. Here people will make use of dialogues, team disagreements, and metaphors as efficient approaches for making tacit knowledge converted into codifiable ones. In combination mode, explicit knowledge is then shared with other intra- or inter-

organizational knowledge including documents, e-mails, training, education learning, and so forth where they are merged, edited, and processed. Here, the incorporation of technology has been widely recognized. For example, making use of ICT, intranet, virtual communities, online databases, and other AI tools for sharing information (Farnese, Barbieri, Chirumbolo, & Patriotta, 2019). Lastly, during the internalization process, individuals need to act on information that they comprehend and internalize it. Here formal knowledge is connected to personal experiences by reading curriculum and documents shared, students and teachers can generate new knowledge by merging current tacit knowledge with the knowledge of others. Previous studies like Mahdi et al. (2019) and Nassuora (2011) have used the SECI model in knowledge management and have effectively demonstrated its use in learning.

The knowledge – creating process: SECI model

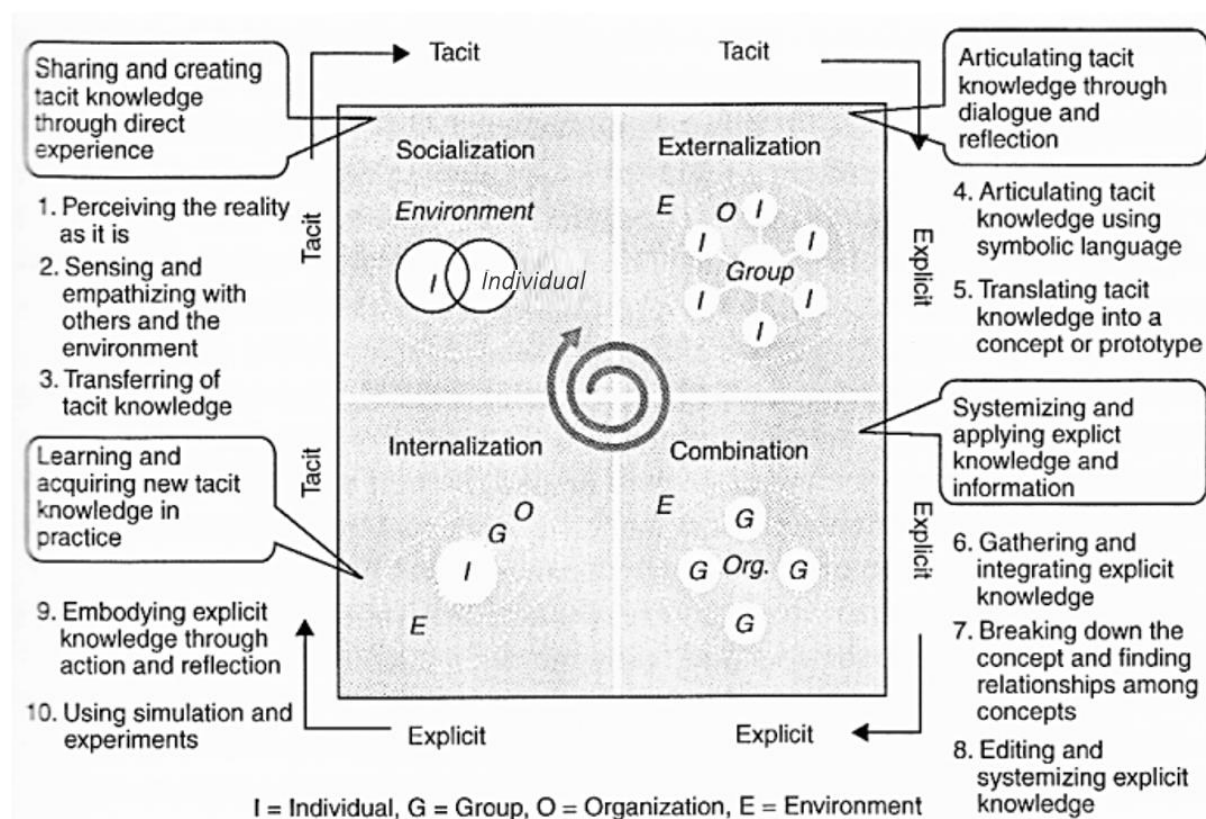


Figure 2. SECI model in knowledge management.

Source: Natek and Zwilling (2016).

Figure 2 illustrates the SECI model that involves four stages namely socialization, externalization, combination, and internalization used in the knowledge management process. This model is used for a continuous knowledge management process that combines tacit knowledge with explicit knowledge for enhanced learning and growth.

2.5. Research Gaps

Previous studies have extensively discussed knowledge management and the use of artificial intelligence to enhance the performance of organizations and universities. However, there is very limited research on knowledge management in private universities, specifically in China. Yuk (2019) mentioned that in China, there is a big gap in private higher education. However, it does not clearly mention the role of knowledge management in closing this gap. Similarly, Ojo (2016) explored that there remains an extensive gap between the supply and demand of university education. The gap identification in terms of knowledge management is unexplored in this paper. Studies

like Chen et al. (2020); Linn et al. (2018) and Wang and Xue (2024) have extensively discussed the role of AI in learning and education. However, its effectiveness in private universities is less researched mainly in the context of China. Hence, this study aims to fill these gaps by studying the role of knowledge management and AI and their influence on the performance of private universities in Jiangxi, China.

3. METHODOLOGY

The study examines how the incorporation of artificial intelligence is used for knowledge management in private universities in Jiangxi, China and whether it impacts their performance. In this context, the research applies quantitative methods for collecting data on knowledge management practices in private universities.

3.1. Research Design

The study adopts a quantitative methodology to observe the relationship between knowledge management, AI, and the performance of private universities. This method is dependent on numerical data and statistics for establishing cause-and-effect relationships between variables like AI, knowledge management processes and performance of universities (Ahmad et al., 2019). In this context, the study employs a cross-sectional survey design process for collecting data from different individuals at a single point in time. This will involve collecting data from different individuals from three private universities in Jiangxi, China at a single point in time. The study aimed to assess the perceptions of the faculty members towards the integration of artificial intelligence in knowledge management in universities. This will fulfill the researchers' aim to study a huge population in a narrow timeframe making research more relevant.

This research also includes a literature review based on examining past papers on use of technology like AI in knowledge management with primary data collection. This is done to provide a theoretical background for the study where academic papers along with other grey literature were reviewed. The empirical findings in the literature review will be used further in the discussion section to validate the statistical results for the survey.

3.2. Sampling Size and Participants

Purposive sampling is used for the selection of participants having experience in knowledge management in private universities in Jiangxi, China. Target participants include faculty members from three private universities in China namely Jiangxi Tellhow Animation College, Jingdezhen Ceramic Vocational Technical College, and Jiangxi Hangzhou Vocational College. The sample size includes 100-120 faculty members working in these private universities. They include both males and females and range in age from 28 to 55 and above years. They should have accomplished a relatively high level of experience working in the education sector reliable with their profession. The participants will be recruited through WeChat, academic contacts, and university emails. The study will not disclose the personal information of the participants to maintain anonymity and confidentiality.

3.3. Data Collection

This cross-sectional study is used structured survey questions that allow data gathering which is easier to measure. Regularization of questions posed to respondents will eliminate bias and enable the researcher to acquire an adequate number of responses within time, budget, and other resources (Mahdi et al., 2019). The instrument for data collection is structured questionnaires. The questionnaire is the main research tool used in the research for collecting responses. The questionnaire will include 25-30 close-ended questions. The survey questionnaire involves three sections. Section A includes demographic profile questions. Section B includes questions on knowledge management practices in private universities in Jiangxi, China, that include questions on knowledge management to improve performance and learning in universities. Section C includes questions on the impact of KM on universities. Section D incorporates questions on the use of artificial intelligence in knowledge management

in private universities in Jiangxi, China. Both sections B and D require acquiring, creating, integrating, and sharing information for knowledge management.

The questionnaire is circulated through the social media platform, WeChat, Weibo, and Wjx survey platforms, where the researcher will be able to reach broader audience (faculty members) in a short span of time. To make sure the questionnaire is standardized, it will be in simple English. The study used a Likert scale for exploring variables. The scale includes five levels namely strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1) (Abker et al., 2019; Su et al., 2023). To ensure the validity of the instrument (questionnaire) it will be aligned with research objectives, hypotheses, and the theoretical framework. The research includes a pilot test before deploying it on a full scale. A validity test using a factor reduction test will be performed. Cronbach's alpha is used to ensure reliability. If the values are more than 0.8, this indicates that the data is highly reliable and suitable for the analysis.

3.4. Data Analysis

The data analysis incorporates the use of SPSS software. Numerous statistical tests like descriptive statistics, moderation analysis, and regression analysis are most appropriate for the data type used to recognize the patterns in the dataset (Mahdi et al., 2019). The research used descriptive analysis to examine the demographic composition of the sample, focusing on various attributes such as age, gender, educational background, and years of work experience. This provided a detailed profile of the participants, highlighting diversity in the demographic variables. Moderation analysis is conducted to measure how AI impacts the path of knowledge management and the performance of universities. Similarly, this is followed by multiple regression analysis to investigate relationships between independent (performance in private universities), dependent (KM), and moderating variables (AI). This will allow researchers to identify whether KM and AI are correlated with enhancing performance in private universities in Jiangxi, China. Likewise, researchers predict performance results of the private universities depending on the integration of KM and AI in universities, which allows access and understanding of a more inclusive interpretation of causation between variables within the dataset.

Table 1. Measurement scales.

Construct	Items	Source
Knowledge acquisition	Faculty members obtain a good extent of new knowledge from external sources.	Al-Qarioti (2015)
	Faculty members obtain a good extent of new knowledge from contacts with their counterparts in other universities.	Al-Qarioti (2015)
	Faculty members use Internet sourcing, libraries to obtain the information necessary to perform their duties.	Abker et al. (2019) and Akpotu and Lebari (2014)
Knowledge creation	The university shares proper information and tools for creating knowledge.	Abker et al. (2019)
	The university offers a working environment that encourages the sharing of information.	Akpotu and Lebari (2014)
	The university conducts specialized training programmes and conferences.	Akpotu and Lebari (2014)
	The university arranges exchange programme for faculties and students for networking.	Akpotu and Lebari (2014)
Knowledge integration	The university stores information that can be converted into data that helps faculty members perform their tasks.	Akpotu and Lebari (2014)
	Communities of practice are used for knowledge integration.	Akpotu and Lebari (2014)
	Projects, tasks, and activities are encouraged to integrate knowledge gained.	Al-Qarioti (2015)
Knowledge sharing	The university motivates faculty members and students to engage in processes like seminars, and learning courses.	Akpotu and Lebari (2014)
	Formal meetings and informal gatherings help in exchanging knowledge at the university.	Akpotu and Lebari (2014)
	Peer reading is an effective way of sharing knowledge in the university.	Akpotu and Lebari (2014)
Performance of universities	Knowledge management in universities increases	Elrehail et al. (2018)

Construct	Items	Source
	innovation and creativity.	
	It has increased the number of admissions.	Gatuyu and Kinyua (2020)
	The satisfaction rate among the students and faculties related to teaching methods is favorable.	
	The university was able to achieve its objectives.	Al-Qarioti (2015)
Artificial intelligence in knowledge management	It helps in embracing continuous learning and Shared Experiences.	Akpotu and Lebari (2014)
	AI is used for accessing students' performance prediction in online courses and exams to enhance knowledge integration.	Qazi et al. (2024)
	AI-based recommender systems are used to select questions for assignments.	Qazi et al. (2024)
	AI-based tools used for e-learning facilitate knowledge management.	Natek and Zwilling (2016)
	Machine learning provides real-time feedback to students and enhances the learning environment.	Qazi et al. (2024)

Table 1 presents the measurement scales used in the study. This includes constructs for knowledge creation, acquisition, sharing, and integration, the performance of universities, and artificial intelligence in knowledge management. These are used as survey items to support the research and data collection.

4. RESULT

The current study examines the impact of knowledge management practices on the performance of universities, with a particular emphasis on the moderating role of artificial intelligence. Although knowledge management has been studied in a number of corporate settings, its use in private universities has not received much attention. A survey of 110 faculty members from private Chinese institutions was carried out to address the gap. Information integration has little and direct impact on results. Research shows that efficient knowledge production, acquisition, and sharing greatly improve performance. Significantly, artificial intelligence enhances the advantages of existing techniques and offers fresh opportunities for institutional development.

Table 2. Descriptive statistics.

Category	N	%
Age		
25-34	41	37%
35-44	26	24%
45-54	29	26%
55 and above	14	13%
Gender		
Female	75	68%
Male	26	24%
Other	5	5%
Prefer not to say	4	4%
Education		
Bachelor's degree	51	46%
Doctorate (PhD)	19	17%
Master's degree	38	35%
Other	2	2%
Working years		
1-3 years	31	28%
4-6 years	37	34%
7-10 years	22	20%
More than 10 years	20	18%

4.1. Descriptive Statistics

Table 2 presents a variety of the sample's attributes where it can be seen that ages 25–34 account for the majority of responders (37%) followed by 45–54 (26%), 35–44 (24%), and 55 and older (13%). In terms of gender distribution, women make up 68% of the population followed by men (24%) with 5% choosing "Other" and 4% choosing not to disclose. Sixty-six percent have a bachelor's degree followed by master's (35%) and doctoral degrees (17%). 4–6 years of work experience (34%), 1–3 years (28%), 7–10 years (20%) and more than 10 years (18%) are the ranges. Regardless of age, gender, experience, or degree of education, this varied group provides insightful opinions.

Table 3. Reliability.

	Cronbach's alpha	
Performance of universities	0.996	
Knowledge acquisition	0.997	
Knowledge creation	0.997	
Knowledge integration	0.991	
Knowledge sharing	0.993	
AI in knowledge management	0.993	
KMO and Bartlett's test		
Kaiser-Meyer-Olkin measure of sampling adequacy		0.919
Bartlett's test of sphericity	Approx. chi-square	7052.324
	Df	231
	Sig.	0.000

4.2. Construct Reliability and Validity

Table 3 presents the reliability and validity outputs which show strong reliability and validity for the constructs because of their very high internal consistency with Cronbach's alpha values ranging from 0.991 to 0.997 across variables. The data's eligibility for structure detection is confirmed by the substantial ($p < 0.001$) Bartlett's test of sphericity and the excellent sampling adequacy for factor analysis indicated by the KMO value of 0.919. These findings support the validity and consistency of the metrics employed in the study to evaluate performance and knowledge management.

Table 4. Regression analysis.

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	0.284	0.191		1.487	0.140
	Knowledge acquisition	0.236	0.054	0.264	4.365	0.000
	Knowledge creation	0.469	0.108	0.566	4.337	0.000
	Knowledge integration	-0.257	0.125	-0.320	-2.061	0.042
	Knowledge sharing	0.381	0.116	0.448	3.287	0.001

Note: Dependent variable: Performance.
R-squared: 0.701.
F: 61.756.
Sig: <0.001.

4.3. Multiple Linear Regression

Table 4 looks at how private institutions' performance is affected by the many aspects of knowledge management, including the creation, integration, sharing, and acquisition of knowledge. The findings show that performance is significantly improved by knowledge creation ($B=0.469$ and $p < 0.001$) and acquisition ($B=0.236$, and $p < 0.001$). Knowledge sharing also has a positive impact on performance ($B=0.381$ and $p=0.001$) indicating its important function in encouraging cooperation and creativity. On the other hand, Knowledge integration has a significant and negative effect ($B=-0.257$ and $p=0.042$) indicating that inefficient integration procedures may

impair performance. Our findings emphasize the significance of efficiently gaining, producing, and disseminating knowledge while carefully regulating integration to prevent possible conflicts or inefficiencies. Therefore, hypotheses 1, 2, 3 and 4 can be accepted.

Table 5. Moderation effect I.

AI (Moderator value)	Effect of knowledge acquisition on PU	p-value	Confidence interval (95%)
1.0000 (Low AI)	0.049	0.6115	[-0.1416, 0.2395] (Not significant)
3.5000 (Moderate AI)	0.3796	0	[0.2462, 0.5130] (Significant)
5.0000 (High AI)	0.578	0	[0.3703, 0.7856] (Significant)

4.4. Moderation Analysis

Table 5 reveals that at low levels of AI, the effect of knowledge acquisition on performance is not significant ($p = 0.6115$). However, at moderate AI levels, the effect becomes highly significant ($p = 0.000$). In the case of high AI levels, the effect becomes stronger ($p = 0.000$ and $E = 0.5780$). This highlights that AI tools significantly enhance knowledge acquisition by improving the data acquisition and utilization process. Therefore, hypothesis 5 is supported.

Table 6. Moderation effect II

AI (Moderator value)	Effect of knowledge creation on PU	P-value	Confidence interval (95%)
1.0000 (Low AI)	0.2693	0.0002	[0.1335, 0.4051] (Significant)
3.5000 (Moderate AI)	0.519	0	[0.4453, 0.5926] (Significant)
5.0000 (High AI)	0.6687	0	[0.5668, 0.7707] (Significant)

Table 6 reveals that at low levels of AI, the effect of knowledge creation on performance is moderately significant ($p = 0.0002$ and $E = 0.2693$). However, at moderate AI levels the effect becomes highly significant ($p = 0.000$ and $E = 0.5190$), and in the case of high AI levels, the effect becomes stronger ($p = 0.000$ and $E = 0.6687$). Therefore, hypothesis 6 is supported.

Table 7. Moderation effect III.

AI (Moderator value)	Effect of knowledge integration on PU	p-value	Confidence interval (95%)
1.0000 (Low AI)	0.2460	0.0002	[-0.1416, 0.2395] (Not significant)
3.5000 (Moderate AI)	0.4817	0	[0.2462, 0.5130] (Significant)
5.0000 (High AI)	0.6232	0	[0.3703, 0.7856] (Significant)

Table 7 reveals that at low levels of AI, the effect of knowledge integration has a significant and positive impact on performance ($p = 0.0002$ and $E = 0.2640$). At moderate AI levels, the effect grows and is highly significant ($p = 0.000$ and $E = 0.4817$), and in the case of high AI levels, the effect peaks ($p = 0.000$ and $E = 0.6232$). Therefore, hypothesis 7 is supported.

Table 8. Moderation effect IV.

AI (Moderator value)	Effect of KS on PU	P-value	Confidence interval (95%)
1.0000 (Low AI)	0.3027	0	[0.1670, 0.4384] (Significant)
3.5000 (Moderate AI)	0.5214	0	[0.4486, 0.5942] (Significant)
5.0000 (High AI)	0.6526	0	[0.5479, 0.7572] (Significant)

Table 8 reveals that at low levels of AI, the effect of knowledge sharing has a significant and positive impact on performance ($p = 0.000$ and $E = 0.3027$). At moderate AI levels, the effect grows and is highly significant ($p = 0.000$

and $E = 0.5214$), and in the case of high AI levels, the effect is the maximum ($p=0.000$ and $E = 0.6526$). Therefore, hypothesis 8 is supported.

Table 9. Final summary.

Hypotheses	Decision
H1: Knowledge acquisition positively impacts the performance of private universities.	Accept
H2: Knowledge creation positively impacts the performance of private universities.	Accept
H3: Knowledge integration positively impacts the performance of private universities.	Reject
H4: Knowledge sharing positively impacts the performance of private universities.	Accept
H5: Artificial intelligence moderates knowledge acquisition towards enhancing performance in private universities.	Accept
H6: Artificial intelligence moderates knowledge creation towards enhancing performance in private universities.	Accept
H7: Artificial intelligence moderates knowledge integration towards enhancing performance in private universities.	Accept
H8: Artificial intelligence moderates knowledge sharing towards enhancing performance in private universities.	Accept

Table 9 presents the final summary of hypothesis testing regarding the impact of knowledge management and the moderating role of artificial intelligence (AI) on the performance of private universities. The findings of the study indicate that the variables knowledge acquisition, knowledge creation, and knowledge sharing has a significant as well as positive influence on university performance and H1, H2 and H4 are accepted. However, H3 is rejected because knowledge integration does not show a significant impact. Moreover, the findings also show that artificial intelligence positively moderates the relationship between all four knowledge processes and institutional performance and H5, H6 and H7 are accepted.

5. DISCUSSION

The findings of the study highlight a critical dimension of knowledge management and artificial intelligence towards enhancing performance in private universities. The first four hypotheses (H1-H4) were involved in examining the impact of knowledge management on private universities by examining areas like knowledge acquisition, creation, integration, and sharing. The hypotheses related to knowledge acquisition, creation, and sharing were found to be accepted and consistent with the empirical findings of [Matar and Raudeliūnienė \(2021\)](#) that mentioned with knowledge acquisition, private universities seek to improve their quality and gain excellence. These findings suggest that universities that actively engage in acquiring and adapting to external knowledge and information can outperform with knowledge acquisition (H1) emerging as a significant factor. Furthermore, [Li and Zhu \(2021\)](#) conducted a study on Chinese universities and found that educational modernization is possible with the knowledge management process. The study also revealed that technology can enhance learning willingness and knowledge transfer performance inside universities. Hence, the findings from the statistical results and literature review reinforce that knowledge management enhances the performance of universities.

Similarly, knowledge creation (H2) plays a vigorous role in improving the performance of private universities which can be validated by the findings of [Su et al. \(2023\)](#) who argued that collaborative learning, inter-departmental communication, and innovation place help in achieving efficiency and excellence of organizations. The acceptance of H4 mentions that knowledge sharing is a vital factor in enhancing the performance of private universities. This supports the findings of [Nassuora \(2011\)](#) which emphasized that knowledge sharing is beneficial for breaking down barriers, increasing competitiveness, and assisting in gaining commercial opportunities. Apart from this, the literature further revealed that when knowledge is effectively shared inside the university premises, it is likely to reduce research time and enhance the efficiency of faculties and scholars. This can be further validated with the findings of [Weiyinge and Segumpan \(2024\)](#) mentioning that digital tools and platforms used in private universities

in China is effective in enhancing knowledge creation and improving the academic performance of students, faculties, and universities. Hence, this validates that knowledge creation positively impacts performance in private universities. This can be linked with the theoretical perspective of the SECI model used in the study which signifies that faculty members and other individuals inside the university apply Externalization to convert tacit knowledge to new explicit knowledge in the form of dialogues, team confrontations, and metaphors which is then shared with other intra- or inter-organizational knowledge in the form of education learning, training, and other resources. This finding can be aligned with the study of [Abker et al. \(2019\)](#) and [Elrehail et al. \(2018\)](#) who mentioned that knowledge sharing and its proper implementation increase innovation and creativity in universities.

On the contrary, hypothesis H3 states that knowledge integration positively impacts performance in universities was rejected. This further contradicts the findings of [Linn et al. \(2018\)](#) and [Al-Qarioti \(2015\)](#) who emphasize the integration of knowledge in various forms like simulations, random assignments, virtual experiments, virtual examinations, and other methods to make the students and faculty members apply theoretical perspective in real-world contexts enabling both universities and students to elicit novel idea and form intelligible frameworks. However, the rejection of the hypothesis indicates that limited resources and resistance to change could be potential barriers to the proper integration of knowledge in universities, where proper infrastructure support and leadership are vital for managing the gap.

On the other hand, artificial intelligence has a significant moderator that enhances the performance of private universities. The acceptance of H5-H8 suggests that technology has the potential to positively impact performance in universities. This signifies that technology has transformed the process of knowledge acquisition, creation, integration, and sharing and enhanced decision-making capability and operational efficiencies. For example, the use of machine learning and analytics has automated the knowledge management process with AI-driven tutoring systems and AI tools assisting in advancing research faster and acquiring specific knowledge. These findings align with the work of [Chen et al. \(2016\)](#) mentioned that the use of machine learning, data mining, psychometrics of statistics and other technological tools enables faculty members and students to use data for enhancing their research in emerging topics. This can be attributed to these tools acting as moderators towards strengthening knowledge management initiatives in universities making the students and faculty members stay ahead with the trends and developments in the academic setting. Furthermore, [Dodgson and Gann \(2017\)](#) have talked about how AI breakthroughs like “Deep Mind AI” have improved the research capabilities in several universities by making them conduct effective and faster research. This study has mentioned other AI breakthroughs like Magic Pony, Improbable and Wolfram Alpha have their origins in universities signifying that AI is used as a new scientific infrastructure by the private universities for increasing their daily operations and performance and building a strong knowledge base. Furthermore, [Qazi et al. \(2024\)](#) and [Wang and Xue \(2024\)](#) claimed that universities are extensively making use of AI in generating an interactive learning atmosphere enhancing academic growth and development of universities.

Similarly, AI can be used as a moderator to reduce the challenges highlighted due to the rejection of H3 where automation can be used as a new infrastructure for the integration of knowledge inside the universities. Overall, the implications of these major findings are highly relevant for effective knowledge management in universities where technology can be used as a strategic enabler that can assist the universities in managing knowledge and learning with a contemporary approach while mitigating the challenges of traditional learning. The research findings stress the importance of investment in this area where the management of private universities can leverage big data, analytics, and AI tools towards redefining teaching practices and learning methods. However, proper ethical considerations need to be in place for effective knowledge management with transparency, accountability, and ethical use of machines. Overall, knowledge management and AI are critical factors in enhancing performance in private universities in Jiangxi, China.

6. CONCLUSION

This study was conducted to understand how knowledge management practices impact the performance of private universities in Jiangxi, China and taking artificial intelligence as the moderating variable. Knowledge management practices like acquisition, creation, and sharing have significant variables that positively impact the performance of private universities. The findings confirmed that the acquisition of effective knowledge, using methods to create them into learning and sharing inside the universities enables the organization to be innovative and attain competitiveness. Multiple regression analysis and moderating analysis were carried out to measure these statistical tests like descriptive analysis. H1 and H2 were found to be accepted indicating that knowledge acquisition and creation positively impacts the performance of private universities in Jiangxi, China.

However, the study also revealed knowledge integration (H3) does not always positively impact performance in universities which indicates that it does not have a direct impact on knowledge management. This finding has contradicted verdicts from previous studies in the literature review that hold strong evidence of the positive impact of knowledge integration in universities. This can be attributed that a lack of proper resources including technical and human and poor infrastructure could be a challenge for universities in effectively integrating knowledge management.

Finally, artificial intelligence has a significant moderator that has been widely used in universities for learning and knowledge management purposes. This study demonstrates that AI plays an equally critical role as a mediator in managing knowledge in private universities enabling them to become competitive and efficient in the face of adverse competition with the acceptance of hypotheses H5-H8.

The result further emphasizes that universities should invest in developing technology-enabled infrastructure for better management of knowledge. This will enhance the capability of faculty members, students, and other stakeholders to better acquire, create, integrate, and share and head towards a future of creating better learning organizations that are free from traditional boundaries.

7. IMPLICATIONS OF THE STUDY

The findings of this study are highly effective for academic settings and policymakers to enhance the education system in the country. In academic settings, universities should make investments in developing their infrastructure that could support technology integration for building their knowledge base. Investments in AI-based tools and systems would enable the organization and its members to comply with the trends and developments in the industry. However, there is a need to develop strict guidelines and policies in the universities and educational forums to enable the ethical use of AI in universities and overcome its misuse and cyber threats. This study based on the literature findings adds new insights about the sustainable use of AI tools at the organizational level and confirms the role of knowledge management with AI towards ensuring a sustainable competitive edge.

Policymakers, government, designers, and service providers should develop policies and processes that enable easy acceptance of the technology by the universities. This can include funding from the government for conducting AI-based research, proper training in the area of AI usage, and legislation for its ethical use. This will attract faculty members and students even with low experience to master the arts of using technology in their work, thereby enhancing academic excellence and performance.

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APPENDIX 1. Survey questionnaire.

Section A: Demographic Questions.

1. **What is your age?**
 - 25-34
 - 35-44
 - 45-54
 - 55 and above
2. **What is your gender?**
 - Male
 - Female
 - Other
 - Prefer not to say
3. **What is your highest level of education?**
 - Bachelor's Degree
 - Master's Degree
 - Doctorate (PhD)
 - Other
4. **How many years have you been working in the education industry?**
 - 1-3 years
 - 4-6 years
 - 7-10 years
 - More than 10 years

Section B: Knowledge Management Practices in Private Universities

Knowledge Acquisition

5. Faculty members obtain a good extent of new knowledge from external sources.
 - ✓ Strongly agree
 - ✓ Agree
 - ✓ Neutral
 - ✓ Disagree
 - ✓ Strongly disagree
6. Faculty members obtain a good extent of new knowledge from contacts with their counterparts in other universities.
 - ✓ Strongly agree
 - ✓ Agree
 - ✓ Neutral
 - ✓ Disagree
 - ✓ Strongly disagree
7. Faculty members use the Internet-sourcing, libraries to obtain the information necessary to perform their duties.
 - ✓ Strongly agree
 - ✓ Agree
 - ✓ Neutral

- ✓ Disagree
- ✓ Strongly disagree

Knowledge Creation

8. University shares proper information and tools for creating knowledge.

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

9. University offers a working environment that encourages the sharing of information

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

10. University conducts specialized training programmes and conferences

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

11. The university arranges an exchange programme for faculties and students to networking

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

Knowledge Integration

12. The university stores information that can be converted into data that helps faculty members perform their tasks

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

13. Communities of practice are used for knowledge integration

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral

- ✓ Disagree
- ✓ Strongly disagree

14. Projects, tasks, and activities are encouraged to integrate knowledge gained.

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

Knowledge Sharing

15. The University motivates faculty members and students to engage in processes like seminars, and learning courses

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

16. Formal meetings and informal gatherings help in exchanging knowledge at the university

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

17. Peer reading is an effective way of sharing knowledge in the university

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

Section C: Performance of universities

18. Knowledge management in universities increases innovation and creativity

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

19. Knowledge management has increased the number of admissions

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral

- ✓ Disagree
- ✓ Strongly disagree

20. The satisfaction rate among the students and faculties related to teaching methods is favorable

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

21. The university can achieve its objectives due to effective knowledge management and the use of AI in Knowledge Management

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

22. Knowledge management helps in embracing continuous learning and shared experiences

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

Section D: Artificial intelligence in knowledge management

23. AI is used to access student performance prediction in online courses and exams to enhance knowledge integration.

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

24. An AI-based recommender system is used to select questions for assignments

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

25. AI-based tools used for e-learning facilitate knowledge management

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral

- ✓ Disagree
- ✓ Strongly disagree

26. Machine learning provides real-time feedback to students and enhances the learning environment

- ✓ Strongly agree
- ✓ Agree
- ✓ Neutral
- ✓ Disagree
- ✓ Strongly disagree

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