A Study of Knowledge Management Capability Impact onthe Innovation Performance of human Library in ChineseUniversities

Fei Gao[1], Kuncharee Kakhai [2, *]

[9]Fei Gao, doctoral student, innovation management college, Suan SunandhaRajabhat University
[2] Kuncharee Kakhai, Doctor,Assistant Professor, innovation managementcollege, Suan Sunandha Rajabhat University

Abstract：

As key organizers and managers of China's university human libraries, library librarians' knowledge management capabilities play a crucial and indispensable role in the establishment and promotion of these libraries. By fully harnessing the "knowledge flow" between "human books" and readers, librarians not only provide significant opportunities for the development of human libraries but also assist readers in discovering and activating latent knowledge, thereby fostering continuous improvement and innovative development within the human library context. Through theoretical research, it is found that China's university human libraries have recently entered a development downturn, and there is a significant research gap in the area of knowledge management. It is urgent for researchers to apply knowledge management concepts and tools to facilitate the design and implementation of activities in university human libraries. This paper presents a literature review on knowledge management capabilities, including relevant definitions, background theories, and dimensional components, in order to better explore ways to improve the innovation performance of human libraries in Chinese universities. The study also reveals that knowledge management capabilities have a direct impact on the innovative performance of China's university human libraries, and the researchers will use a combination of quantitative and qualitative methods to verify their positive correlation in the next phase of research.

Keywords: human library; knowledge management capability; innovation performance

1. Introduction

1.1 Research background

"Human Library" typically refers to a special cultural event. The primary goal of the Human Library is to promote understanding, respect, and diversity through "human books" – real people with unique backgrounds, experiences, and stories. In this activity, participants can "borrow" these "human books" and engage in face-to-face conversations and interactions with them. Each "book" represents a specific social group, such as members of ethnic minorities, religious believers, individuals with diverse gender identities, or people with disabilities. Through these interactions, participants gain a better understanding of the life experiences, challenges, and successes of different groups. This form of activity helps break down prejudices and stereotypes, fosters cross-cultural and cross-social dialogue and understanding, and promotes inclusivity and diversity. The Human Library has received widespread recognition and support worldwide, becoming an important tool for advancing social and cultural exchange.

In 2008, Chinese-American Librarian Professor Zeng Lei introduced the human Library to China through the "Advanced Seminar on Preface of Digital Library" (X. Xu, 2021). University libraries, public libraries, public welfare institutions, and individuals organize human libraries in China (Wu, 2020). University libraries use their knowledge, environment, and culture to drive Human Library activities (Tan & Hu, 2018). In 2017, China's universities included Shanghai Jiao Tong University, Zhe Jiang University, Nanjing Normal University, Dalian University for Nationalities, Yang Zhou University, Suzhou University, Shanghai University, Sichuan University, Southern Medical University, Southwest Petroleum University, University of Electronic Science and Technology, and Chong Qing University. In addition, over 30 universities, including the China University of Geosciences, have live library activities (X. Liu & Chen, 2015).

The Human Library at universities encourages college students to think from different perspectives and stimulates innovative thinking. During interactions with "living books," participants are exposed to novel ideas and viewpoints, sparking their creativity and imagination. Moreover, engaging with "living books" fosters experiential learning, allowing participants to face real-life problems and challenges and collaboratively explore solutions. This practical learning helps cultivate students' problem-solving and practical skills, making them better prepared for future career development.Overall, the university Human Library promotes students' comprehensive development through innovative means, not only expanding their knowledge and skills but also nurturing their social awareness, cross-cultural communication abilities, and innovative thinking. It positively impacts the cultivation of globally-oriented and creative students,which traditional libraries cannot achieve. Hence, effectively enhancing theinnovative performance of the university Human Library becomes crucial.

However, recent trends in the development of Human Libraries in China indicate that it has reached a bottleneck stage.

The researcher searched the papers included in the National Library of Chinese Academic Journals from 2009 to 2022 by using the retrieval method (subject=living library) OR (subject=human library) OR (subject=human book) OR (subject=living book). The retrieval time was 2023.02.10(as shown in Figure 1). In recent years, research works on Chinese human libraries have gradually decreased. As some scholars have pointed out(Wu, 2019), the development of human libraries in China has entered a stage of self reflection and finding a way out.

Figure 1: The annual number of documents issued by China human Library
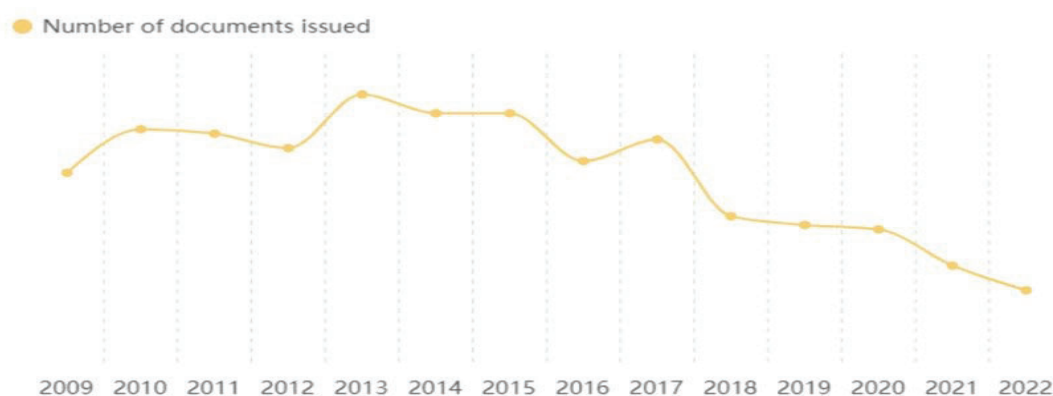
Source:All the above data are from：*http://www.cnki.net*

Some studies indicate that there is a research gap in the field of knowledge management regarding human libraries. Few Chinese university libraries focus on deeply integrating explicit and implicit knowledge resources. The quantity and quality of tacit knowledge are among university libraries' most significant differences in knowledge management performance(Wang, 2022). Integrating various types of knowledge, skills, and experience in the process of organizational innovation is especially important to accelerate organizational innovation and strengthen its impact (Parjanen et al., 2011). In order to improve the output of innovation performance, this study will explore the relevant definitions, background theories, and dimensional composition of knowledge management capabilities from the perspective of knowledge organizers and managers, by applying the concepts and tools of knowledge management, in order to explore effective ways to improve the innovation performance of human libraries in Chinese universities through knowledge management capabilities.

1.2 Research Questions and Research Objectives

Based on some existing practical activities, it can be seen that knowledge management capability has a profound impact on organizational innovation performance. It not only facilitates knowledge acquisition and sharing but also fosters an innovative culture, assists in evaluating and improving innovative activities, and supports sustained innovation development. Therefore, it is necessary to review and summarize these literature. The research question of this paper is how knowledge management capability influences the innovation performance of Chinese university Human Libraries, and the research objective is to examine the role of knowledge management capability in the innovation performance of Chinese university Human Libraries.

2. Knowledge Management Capability

Knowledge management capability plays a crucial role in organizations. Through excellent knowledge management, organizations can better respond to changes and challenges, improve decision quality, and enhance efficiency. Moreover, knowledge management capability helps to avoid knowledge isolation and redundant efforts, promoting knowledge sharing and learning, thus enhancing internal collaboration and innovation within the organization. Therefore, knowledge management capability is a key factor for organizational success. "Knowledge Management Capability" can be abbreviated as "KMC."

2.1 Definition and Benefit of Knowledge Management Capability

KMC is an organization's ability to create new knowledge from existing data (Tseng, 2014). KMC is an organization's ability to acquire, convert, and apply new knowledge (Xu et al., 2014). Liu & Deng (2015) describe KMC as creating, transferring, applying, and retaining knowledge. (Zhang et al., 2018)classified knowledge management capabilities as technical, structural, and cultural. The technical level involves using technical architecture to enable enterprises to share knowledge internally. Enterprises transform interpersonal relationships and capital into new knowledge at the structural level; The cultural level is an organization's capacity to manage knowledge effectively. Xie et al. (2019) define KMC as the ability of an enterprise to integrate and coordinate knowledge resources around knowledge activities and business processes. Naqshbandi & Jasimuddin (2018) defined KMC as knowledge processing and infrastructure. Technology, structure, and culture support knowledge acquisition, transformation, application, and protection.

KMC is a company's adaptability and success in developing, using, and preserving technical, structural, and cultural knowledge. KMC controls business and knowledge. technology, culture, and infrastructure gather, transform, apply, and protect knowledge.

The American Library Association (2003) defined KMC as "knowing when and in what situations, what information and knowledge are needed, and how to use

them to solve problems or make decisions" for library benefits. The Australian Library and Information Association (ALIA) (2009) defines KMC as "the ability to effectively collect, analyze, and apply information and knowledge to support organizational goals." KMC helps university libraries acquire, convert, disseminate, apply, and create knowledge(Peng, 2012). In addition, Mao et al. (2015) also claimed that KMC uses knowledge resources for competitive advantage.

Based on the analysis of the above research viewpoints, knowledge management capabilities mainly include knowledge production capabilities, knowledge dissemination capabilities and knowledge application capabilities. These capabilities mainly come from the knowledge reproduction, intellectual reproduction and material reproduction activities of the organizational knowledge activity system, and these activities are reflected in each stage and each link of the business process (Liu & Deng, 2015; Tseng, 2014; Xie et al., 2019).

2.2 The Background Theory

2.2.1 Knowledge Innovation Theory

Knowledge innovation theory explains corporate growth. Nonaka & Takeuchi(1995), two prominent academics, argue that knowledge innovation based on librarian expertise is possible if the enterprise uses this information to increase its competitiveness. Tacit and explicit knowledge build knowledge. His SECI "knowledge creation" model was complete. Innovation entails recognizing, collecting, developing, sharing, implementing, and safeguarding knowledge. For socialization, externalization, combination, and internalization, the SECI paradigm demands strong communication and collaboration. These enable knowledge management. SECI models must innovate knowledge using knowledge management capabilities(Cun & Yang, 2017; Gong & Guo, 2016; Li, 2016).

2. 2.2 Tacit Knowledge Theory

Polanyi (1958) pioneered knowledge studies. He classified knowledge as "explicit" or "implicit" based on expressibility and transferability in 1958. Polanyi divided explicit and implicit knowledge. Humans can convey explicit knowledge through code (Typically, language, including mathematical formulas, charts, Braille, gesture language, semaphores, and other symbolic forms). Tacit knowledge is unspoken. Explaining tacit knowledge is hard. Nonverbal intellectual activities make language, text, charts, and symbols inexpressible. Irrational, situational, cultural, and accidental (Grant, 2017). Botkin & Seeley's declaration and review on knowledge management says that 20% of human knowledge is explicit and 80% tacit. Sharing tacit knowledge—80% of human knowledge—is hard (Evers et al., 2010). Theoretical researchers enriched tacit knowledge. Organizations employ tacit knowledge more; study shows—that innovation and competitiveness increase. Innovation grows knowledge

economies. Exchanges of tacit and explicit knowledge are the foundation of the knowledge economy.

Tacit knowledge drives knowledge management and improves HR management and core competitiveness. However, its mutual progress cannot continue with traditional ideas. To change tacit knowledge, enterprises should establish a new organizational structure model with a dynamic team structure in addition to salary and prizes. Touch improves tacit learning. In order to successfully finish a project, they need to for an interdisciplinary group as soon as possible.

2. 3 Components of Knowledge Management Capability

Lichtenthaler & Lichtenthaler (2009) claim that knowledge management capacity architecture lets open innovation organizations dynamically manage their knowledge base. Researchers believe knowledge management includes acquisition, retention, utilization, exploration, and use. Peng & Li (2009)defined library knowledge management competence, examined its components and influences, and created an evaluation method. Knowledge management includes intellectual capital generation, transformation, distribution, application, innovation, preservation, and self-testing. Carayannis et al. (2011) examined the region's new enterprise heterogeneity using entrepreneurial knowledge and action literature. Competitive entrepreneurs face knowledge spillovers and network risk. Researchers divide knowledge management into transfer, reconstruction, and application. Both domestic and abroad knowledge management studies based on Tian et al. (2015) rely heavily on three overarching frameworks. The essay promotes organizational knowledge management by establishing a multi-level and dynamic knowledge management research framework on current frameworks. The resource perspective study framework categorizes knowledge management into acquisition, absorption, transfer, and dissemination.

Li & Jin (2014) assessed elementary teachers' knowledge management and professionalism. Awareness, capability, transformation, sharing, and creativity help teachers manage knowledge. Mao (2015) tested knowledge management-driven organizational agility frameworks and submodels. Knowledge management requires foundation, integration, and administration. Li& Xia (2015)say university trust and knowledge management affect enterprise innovation. Liu (2017) examined corporate dynamic knowledge management and innovation. The study divided dynamic knowledge management into acquisition, transformation, and application. Cognitive theory-based Wei & Li(2017) examined college students' personal knowledge management. The author's college KMC model includes knowledge acquisition, storage, application, sharing, and creation.

Sang & Wang(2021) studied Chinese construction project managers and produced a theory of how knowledge management improves project quality. Researchers think technical, regulatory, and cultural knowledge management improves

engineering quality. Knowledge capabilities are a key success factor in achieving competitive advantage in organizations requiring various knowledge capabilities for innovation ((Garcia-Perez et al., 2020)), this study describes KMC's capabilities and impact on product and service development. Literature shows a multi-factor theoretical model—KM race. The study defines KM as an organization's stockholders' intrinsic and extrinsic production and acquisition of information to disseminate, integrate, and store in three phases to produce effective knowledge resources and advantages for higher profit(Nonaka et al., 1996)). Based on many research investigations, this study classifies KM approaches into "knowledge creation and acquisition," "diffusion and Integration," and "storage and application." Industry research factors study KMC mechanisms using the three dynamic processes.

This review found that all studies used survey research and the study population. Project managers, public organizations, teachers, and students follow. One involved librarian. Researchers disagreed on classifying KMC structures.

The researcher has selected the dimension of interest based on the first broadest value of the cumulative frequency based on the examined studies. According to the knowledge management capability, there are three dimensions; knowledge acquisition capability, knowledge application capability, and knowledge transformation capability (Carayannis et al., 2011; Garcia-Perez et al., 2020; Li & Xia, 2015; Li & Jin, 2014; Lichtenthaler & Lichtenthaler, 2009; Liu, 2017; Peng & Li, 2009; Wei & Li, 2017) .

2. 4 Measure of Knowledge Management Capability

In this study，knowledge acquisition capability is university libraries' ability to appropriately introduce external knowledge to improve their knowledge reserves. Internal and external library access make up the dimension measurement. knowledge transformation capability as university libraries' ability to absorb and integrate knowledge. Zheng & Chen(2021) research will inform this dimension's socialization, externalization, combination, and implicit questions. This study defines knowledge application capacity as university libraries' ability to rearrange and use new and old knowledge to work difficulties. Innovative solutions will consider measurement. the knowledge acquisition capacity and knowledge application capacity in this study mainly refer to the scale of Liu (2017), and the knowledge transformation capacity refers to the scale of Zheng & Chen (2021). Their scale validity and reliability have been verified.As shown in Table 1.

Table 1   Knowledge Management Capability, Operational Definition, Dimensions, Indicators, and Items

Variable and operational definition	Dimensions /construct	Indicators	Item	Researcher/ Year
Knowledge Management Capability operational definition: the level of perception on effectiveness of capabilities such as knowledge acquisition capacity, knowledge transformation capacity, and knowledge application capacity.	Knowledge Acquisition capacity Knowledge Acquisition Capacity	Acquisition of innovative ideas	1. Has a knowledge management system, which can grasp and collect relevant information	Liu (2017)
			2. Frequently carry out staff training on knowledge acquisition	Liu (2017);
			3. Frequently track and survey service object to obtain suggestions that can improve or improve the service	Liu (2017);
			4. Regular training on knowledge acquisition	Liu (2017);
			5.Has an internal mechanism for knowledge dissemination and sharing	Liu (2017)
	Knowledge Transformation Capacity	Integration of innovative resources	6. Experienced old employee will be organized to guide new employee or excellent employee to help lagging employee	Zheng & Chen (2021);
			7. Corresponding policies to encourage employee to displaytheir work skills, in the form of text, images, etc	Zheng & Chen (2021);
			8. Collects and analyzes data and information generated from business processes	Zheng & Chen (2021);
			9. Employee can learn and digest advanced work experience or skills shared by others	Zheng & Chen (2021);

			10. The technical department has the ability to improve knowledge integration	Liu (2017)
Knowledge Application Capacity	Implementation of innovative solutions		11. Practice of applying knowledge to solve problems in work	Liu (2017);
			12. Apply new knowledge to develop new services	Liu (2017);
			13. Improve the technical level or management level of employee through knowledge dissemination and sharing	Liu (2017);
			14.apply new knowledge to cope with dynamic external environments	Liu (2017);
			15. have fixed practices or procedures that combine acquired new knowledge with existing knowledge to generate innovative knowledge	Liu (2017)

3. Conclusion

（1） Knowledge management capability is of great importance for organizational innovation. By enhancing knowledge management capability and actively applying knowledge, organizations continuously improve their services, processes, and technologies, achieving substantial innovative outcomes. Therefore, a high level of knowledge management capability serves as a crucial guarantee for organizational innovation, providing a solid foundation for sustained development and competitive advantage. For university libraries, the knowledge management proficiency of librarians also directly influences the innovation performance of human libraries.

（2） Knowledge management capability is a concept that includes a multi-dimensional structure, but currently, scholars and researchers lack consensus on its specific components. This study proposes that the knowledge management capability of librarians mainly consists of knowledge acquisition capability, knowledge integration capability, and knowledge application capability. Knowledge acquisition capability is primarily dependent on librarians' ability to access internal and external knowledge sources within the organization.

Knowledge integration capability is reflected in librarians' utilization of various technological methods to integrate knowledge resources. Knowledge application capability is demonstrated when librarians apply new knowledge to propose innovative solutions and address new problems.

(4) As a result of a review of the pertinent body of literature, several publications concluded that KMC indirectly affected organizational performance when using knowledge management to improve organizational capacity. Therefore, it is theoretically confirmed that the level of knowledge application capacity will directly affect the innovation performance of human libraries in Chinese universities. The next step will be to use a mixed research method combining quantitative and qualitative research to further verify the positive correlation between the two.

References

Carayannis, E. G., Provance, M., & Givens, N. (2011). Knowledge arbitrage, ser endipity, and acquisition formality: Their effects on sustainable entrepreneurial activity in regions. IEEE Transactions on Engineering Management, 58(3), 56 4–577.

Cun, S., & Yang, H. (2017). International talent cultivation of enterprises under t he theory of knowledge innovation—Based on the strategic vision of 《the Bel t and Road》. Technical Economy and Management Research, 01, 43–47.

Evers, H.-D., Gerke, S., & Menkhoff, T. (2010). Knowledge clusters and knowle dge hubs: Designing epistemic landscapes for development. Journal of knowle dge management, 14(5), 678–689.

Garcia-Perez, A., Ghio, A., Occhipinti, Z., & Verona, R. (2020). Knowledge man agement and intellectual capital in knowledge-based organisations: A review a nd theoretical perspectives. Journal of Knowledge Management, 24(7), 1719–1 754.

Gong, F., & Guo, Y. (2016). Discussion on Enterprise Innovation Audit Method Based on Knowledge Innovation Theory. Research on Science and Technology Management, 36(15), 8–12.

Grant, A. (2017). Originals: How non-conformists move the world. Penguin.

Li, X., & Xia, W. (2015). Research on the Impact of School-Enterprise Cooperat ive Trust on Enterprise Innovation Performance (CNKI) [Doctor]. Northwest U niversity of Technology.

Li, Y. (2016). Review and Prospect of Knowledge Innovation Theory Research i n China. Knowledge Management Forum (CNKI; VOL. 1, (01), PP. 39–46).

Li, Y., & Jin, Z. (2014). Research on the Relationship between Primary School T eachers' Knowledge Management Ability and Teachers' Professional Ability [Master]. Yanbian University.

Lichtenthaler, U., & Lichtenthaler, E. (2009). A capability-based framework for open innovation: Complementing absorptive capacity. Journal of management

studies, 46(8), 1315–1338.

Liu, J. (2017). Analysis of the Coupling Model of Knowledge Management, Talent Management, and Technological Innovation. Soft science (CNKI; VOL. 31, (09), PP. 97–100).

Liu, L. (2017). Research on the Impact of Enterprise Dynamic Knowledge Management Capability on Management Innovation (CNKI) [Doctor]. LiaoNing Technical University.

Liu, S., & Deng, Z. (2015). Understanding knowledge management capability in business process outsourcing: A cluster analysis. Management Decision.

Liu, X., & Chen, L. (2015). Research on the Application Status of WeChat Public Platform in Live Library Activities. Library Research, 45(05), 88–94.

Mao, H., Liu, S., & Zhang, J. (2015). How the effects of IT and knowledge capability on organizational agility are contingent on environmental uncertainty and information intensity. Information Development, 31(4), 358–382.

Naqshbandi, M. M., & Jasimuddin, S. M. (2018). Knowledge-oriented leadership and open innovation: Role of knowledge management capability in France-based multinationals. International Business Review, 27(3), 701–713.

Nonaka, lkujiro, Takeuchi, H., & Umemoto, K. (1996). A theory of organizational knowledge creation. International Journal of Technology Management, 11(7–8), 833–845.

Nonaka, I., o Nonaka, I., Ikujiro, N., Takeuchi, H., & others. (1995). The knowledge-creating company: How Japanese companies create the dynamics of innovation (VOL. 105). OUP USA.

Parjanen, S., Melkas, H., & Uotila, T. (2011). Distances, knowledge brokerage and absorptive capacity in enhancing regional innovativeness: A qualitative case study of Lahti region, Finland. European Planning Studies, 19(6), 921–948.

Peng, D., & Li, Y. (2009). Analysis and Evaluation of Library Knowledge Management Ability [Master]. Liaoning Normal University.

Peng, L. (2012). Research on Comprehensive Evaluation of Knowledge Management Ability in University Libraries—Based on Extension Theory. Border Economy and Culture, 08, 149–152.

Sang, L., & Wang, J. (2021). Research on the Mechanism and Strategy of Knowledge Management Capability for Improving Engineering Quality Performance (CNKI) [Doctor, 10.27623/d.cnki.gzkyu.2021.000137]. China University of Mining and Technology.

Tan, J., & Hu, L. (2018). Research on Innovation of Reading Promotion Services in University Libraries (CNKI) [Master]. YunNan University.

Tian, L. (2015). Knowledge sharing driven by high commitment work systems: The mediating role of trust relationships and the moderating role of gender. Manage comments (CNKI; VOL. 27, (06), PP.148–159).

Tseng, S.-M. (2014). The impact of knowledge management capabilities and sup

plier relationship management on corporate performance. International Journal of Production Economics, 154, 39–47.

Wang, Z. (2022). Building a Knowledge Management Model for University Libraries from the Perspective of Intelligence Perception. 收入 Library Theory and Practice (CNKI; (02), PP. 85–93).

Wei, Y., & Li, B. (2017a). A study on college students' personal knowledge management ability based on cognitive theory (CNKI) [Doctor]. WuHan University.

Wei, Y., & Li, B. (2017b). A study on college students' personal knowledge management ability based on cognitive theory (CNKI) [Doctor]. WuHan University.

Wu, Y. (2019). The Road to Open Access to human Books. 收入 Library industry (CNKI; (04), PP. 66–71).

Wu, Y. (2020). Several Key Issues in the Construction of Chinese Realistic Library. Library construction (CNKI; (04), PP. 112-117+130).

Xie, W., Wei, W., & Pei, B. (2019). An Empirical Study on the Relationship between Knowledge Management Capability, Business Process Capability, and Enterprise Performance. Journal of Hefei University of Technology (Social Science Edition), 33(01), 9–16.

Xu, S., Jiao, X., & Li,L (2014). Research on the Relationship between Knowledge Management Ability, Entrepreneurship Orientation, and SME Performance. Journal of Changzhou Institute of Technology, 27(04), 42–50.

Xu, X. (2021). Research on Service Innovation Strategies of University Human Library Driven by 5G Internet of Things Technology. Library Work and Research (CNKI; VOL. 08, PP. 62–68).

Zhang, Y., Liu, S., Tan, J., Jiang, G., & Zhu, Q. (2018). Effects of risks on the performance of business process outsourcing projects: The moderating roles of knowledge management capabilities. International journal of project management, 36(4), 627–639.

Zheng, W., & Chen, J. (2021). A Study on the Effect of Knowledge Transformation on Innovation Performance of Knowledge Workers (CNKI) [Master, 10.27157/d.cnki.ghzku.2021.005995]. Huazhong University of Science and Technology.