



Integrating AI Knowledge and KIBS Resilience Through Ambidextrous Innovation: Moderating Culture of Knowledge Sharing

Rochmad Wahyudi^{1*}, Ardian Adhiatama¹, Morteza Saberi²

¹Sultan Agung Islamic University, Indonesia

²University of Technology Sydney, Australia

*Corresponding Author: rezayd.227@gmail.com

ABSTRACT

This conceptual study aims to examine how companies in the Knowledge-Intensive Business Services (KIBS) sector can transform their artificial intelligence-based knowledge integration capabilities (AI-Enabled Knowledge Integration Capability / AI-KIC) into organizational resilience through the mediation of ambidextrous innovation under the moderating condition of a knowledge-sharing culture. This paper adopts a conceptual-theoretical approach by expanding upon the classical Knowledge-Based Theory (KBT). The proposed theoretical model positions AI-KIC as a dynamic socio-technical capability that integrates AI's cognitive data processing with human intuitive capacities to simultaneously facilitate exploratory and exploitative innovation. The conceptual framework indicates that AI-KIC significantly enhances ambidextrous innovation by providing a real-time data foundation for exploration while automating processes for exploitation. This synergy strengthens a company's capacity for anticipation, coping, and adaptation, the key pillars of organizational resilience. Furthermore, a culture of knowledge sharing was identified as a socio-cultural contextual factor that moderates and enhances the effectiveness of AI-KIC's impact on innovation. This paper offers originality by formulating the concept of "Human-AI Symbiotic Knowledge Integration" within the KBT framework, bridging the theoretical gap between advancements in cognitive technology (AI) and organizational strategic resilience in the era of digital disruption.

Keyword: AI-Enabled Knowledge Integration Capability, Ambidextrous Innovation, Organizational Resilience, Knowledge-Sharing Culture, Knowledge-Based Theory, KIBS.

Article history

Received:
July 28, 2026

Revised:
August 5, 2026

Accepted:
August 19, 2026

Published:
November 30, 2026

Citation (APA Style):

Wahyudi, R., Adhiatama, A., & Saberi, M. (2026). Integrating AI knowledge and KIBS resilience through ambidextrous innovation: Moderating culture of knowledge sharing. *Journal of Human Resource and Organizational Intelligence*, 1(1), 46-53. <https://journal.nalayascience.com/index.php/jhrmoi/article/view/7>

INTRODUCTION

The acceleration of digital disruption driven by the adoption of generative Artificial Intelligence (AI) has fundamentally transformed the knowledge management landscape across global organizations (Report, 2024). However, on-the-ground observations reveal a significant gap ("phenomenon gap"); many organizations are investing heavily in AI infrastructure but fail to align it with their employees' cognitive capabilities, ultimately leading to the loss of tacit knowledge and a decline in operational resilience when facing crises (Dwivedi et al., 2023). The inability to synergize machine analytical capabilities with human strategic intuition often gives rise to new algorithmic knowledge silos, which actually weaken organizational resilience amid extreme market uncertainty.

In the literature on knowledge management, particularly that rooted in Knowledge-Based Theory (KBT), knowledge is positioned as the most crucial strategic asset for

creating sustainable competitive advantage (Grant, 1996). Nevertheless, there remains an unresolved academic debate (research gap) regarding the role of digital technology in knowledge integration. On the one hand, some researchers argue that digital technology democratizes, accelerates the codification of, and efficiently integrates knowledge across all levels of an organization (Davenport et al., 2022). On the other hand, skeptical scholars warn that overreliance on AI can degrade deep learning capabilities, diminish human agency, and erode the transfer of tacit knowledge, which is at the core of an organization's originality (Cabrita et al., 2022).

Beyond these functional debates, the classical theory of knowledge integration in CBT, pioneered by Grant (1996), remains heavily focused on analog and static human-to-human interaction mechanisms. There are clear theoretical limitations in explaining how companies integrate knowledge sourced from non-human entities (AI) that possess dynamic cognitive capacities. Most previous research has treated AI merely as a passive data storage tool, rather than as a cognitive collaborator. Uniting AI's analytical capabilities and human adaptive capacities into a single integrated model, which we term "Human-AI Symbiotic Knowledge Integration," represents a crucial theoretical gap that must be bridged to build organizational resilience.

Based on this gap, the research question formulated is: How can organizations, particularly those in the Knowledge-Intensive Business Services (KIBS) sector, synergistically integrate AI-Enabled Knowledge Integration Capability (AI-KIC) to drive ambidextrous innovation that leads to increased organizational resilience under the moderating influence of a knowledge-sharing culture?

The objective of this conceptual study is to develop a theoretical model that examines the mediating role of ambidextrous innovation in linking AI-KIC with organizational resilience, as well as to examine the moderating role of knowledge-sharing culture as a socio-technical conditioning factor. Through this theoretical integration, the study is expected to resolve the debate over the role of AI in knowledge management while enriching the body of knowledge management theory with insights on human-machine cognitive collaboration.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Foundational Theory: Knowledge-Based Theory (KBT) in the Digital Cognitive Era Knowledge-Based Theory (KBT) views organizations as social institutions whose primary function is to integrate the specialized knowledge possessed by the individuals within them (Grant, 1996). According to Grant (1996), the efficiency of knowledge integration is determined by three main factors: transfer capacity, a common language, and organizational structure.

In the context of modern digitalization, we expand upon the assumptions of KBT by arguing that the process of knowledge integration is no longer limited to human-to-human interactions. AI has evolved into an active cognitive agent capable of assimilating, synthesizing, and disseminating large-scale explicit knowledge in real time. Therefore, AI-Enabled Knowledge Integration Capability (AI-KIC) is defined as an organization's dynamic capability to integrate analytical knowledge generated by AI processing with human tacit expertise and intuition to produce business solutions of strategic value (Papa et al., 2023).

AI-KIC and Its Relationship to Ambidextrous Innovation Ambidextrous innovation refers to an organization's ability to manage exploitative innovation (efficiency, improvement of existing products) and exploratory innovation (creation of radically new products/services) in a balanced manner (Gibson & Birkinshaw, 2004).

AI-KIC provides a strong cognitive data foundation for both types of innovation. In the exploration dimension, AI-KIC makes it easier for companies to identify unmet market trends and predict future scenarios through predictive data analysis. On the exploitation dimension, the integration of AI systems into work routines automates operational processes and minimizes errors, thereby optimizing resource efficiency. Through human-AI cognitive alignment, companies can overcome the barriers posed by human cognitive limitations (bounded rationality) in processing complex information to create new innovations (Vrontis et al., 2022).

H1: AI-Enabled Knowledge Integration Capability (AI-KIC) has a positive effect on ambidextrous innovation.

Ambidextrous Innovation and Its Relationship to Organizational Resilience
Organizational resilience is defined as a company's dynamic capacity to anticipate disruptions, weather the turbulence of a crisis, and adapt nimbly to turn challenges into opportunities for growth (Duchek, 2020).

Ambidextrous innovation acts as a driver of strategic elasticity. Through exploitative innovation, companies maintain the stability of their operating cash flow and internal cost efficiency during times of crisis. Meanwhile, through exploratory innovation, companies are able to quickly shift to new business models or launch alternative products relevant to changing post-crisis market needs (Katiyar et al., 2024). It is this dualistic balance that prevents organizations from immediate bankruptcy when facing massive market disruption.

H2: Ambidextrous innovation has a positive effect on organizational resilience.

AI-KIC and Its Relationship to Organizational Resilience Directly, AI-based knowledge integration capabilities reduce an organization's response latency to external threats. With AI's ability to continuously process "weak signals" from global market volatility, senior management can gain more precise situational awareness (Santoro et al., 2024). This instant data integration enables strategic decisions to be made quickly and accurately before a crisis escalates into systemic collapse.

H3: AI-Enabled Knowledge Integration Capability (AI-KIC) has a positive effect on organizational resilience.

The Role of a Knowledge-Sharing Culture Although AI infrastructure is capable of producing sophisticated knowledge analysis, the effectiveness of its application depends heavily on employees' sociopsychological factors. A strong knowledge-sharing culture fosters a sense of psychological safety and reduces employees' anxiety regarding the threat of AI (AI anxiety) (Inkinen et al., 2022).

When this collaborative culture is strong, employees will not withhold their tacit knowledge but will actively share it to complement the explicit data outputs generated by the AI system. Conversely, if the knowledge-sharing culture is weak, AI-KIC technology investments will face internal resistance and fail to be converted into high-value ambidextrous innovation (Muhammad et al., 2025).

H4: The knowledge-sharing culture moderates the effect of AI-KIC on ambidextrous innovation, such that this relationship becomes stronger when the knowledge-sharing culture is strong.

METHOD

The paper adopts a conceptual-theoretical approach. Drawing on the literature review and the hypotheses developed in the previous section, the conceptual model of this study is presented in Figure 1:

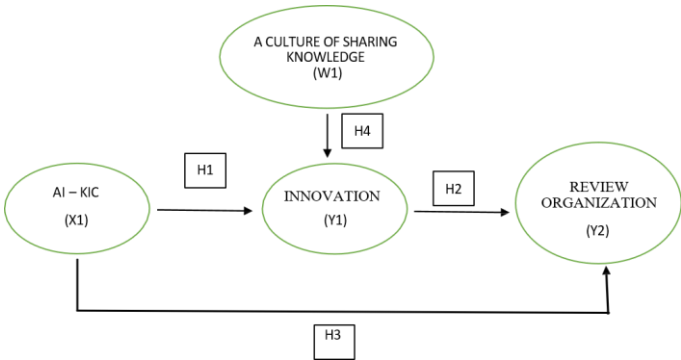


Figure 1. Research Design

Data Collection and Sampling Future empirical studies that adopt this model are advised to use a causal-associative quantitative approach involving a questionnaire survey.

Population & Sample: The target population consists of companies operating in the Knowledge-Intensive Business Services (KIBS) sector in Indonesia (such as IT consulting firms, digital marketing agencies, edtech startups, and modern financial services) that have adopted AI technology in their business operations for at least the past year.

Sampling Technique: The sample was selected using purposive sampling. The criteria for key informants are members of the board of directors, Chief Information Officers (CIOs), IT managers, or operations managers who possess the authority and a comprehensive understanding of technology integration and the company’s strategic policy direction.

Sample Size: Following the principles of partial least squares structural equation modeling (PLS-SEM), the ideal minimum sample size ranges from 150 to 250 companies to ensure the statistical power of parameter estimates.

FINDINGS AND DISCUSSION

This section presents a proposed statistical modeling framework to empirically test the reliability of this conceptual model using a Variance-Based Structural Equation Modeling (PLS-SEM) approach.

Control Variables

To control for estimation bias and ensure that variations in organizational resilience are truly influenced by the main variables, this model includes two control variables:

1. Firm Size: Measured by the natural logarithm of the total number of permanent employees. Organizational scale has a significant impact on the availability of budgets for AI investment and innovation capacity.
2. Firm Age: Measured by the number of years since the firm was legally established. This variable controls for the effects of the experience curve in managing economic crises.

Reliability and Correlation Analysis (Measurement Expectations)

Before conducting structural equation modeling, the quality of the measurement instruments (outer model) must be verified to ensure they meet standard validity and reliability criteria:

- **Internal Consistency Reliability:** Considered acceptable if Cronbach’s Alpha ($\alpha \geq 0.70$) and Composite Reliability (CR ≥ 0.70) meet the criteria.
- **Convergent Validity:** Considered valid if the factor loadings (outer loadings) are > 0.70 and the Average Variance Extracted (AVE) is ≥ 0.50 .
- **Discriminant Validity:** Verified using the Heterotrait-Monotrait Ratio (HTMT < 0.85 or < 0.90).

The following table outlines the operationalization of the indicators and the parameters for testing the quality of the proposed model:

Table 1. Operationalization of constructs and evaluation parameters

Latent Constructs	Operational Indicators	Source References	Evaluation Parameters
AI-KIC (X1)	1. Automated cross-departmental data integration. 2. Human-AI decision-making collaboration. 3. Flexibility in accessing the AI knowledge base. 4. Periodic updates to the cognitive system.	Grant (1996); Papa dkk. (2023)	$\alpha \geq 0.70$ CR ≥ 0.70 AVE ≥ 0.50
Ambidex Innovation (Y1)	1. Exploration: Creation of radically new services/products. 2. Exploitation: Improving the efficiency of business processes.	Gibson & Birkinshaw (2004)	$\alpha \geq 0.70$ CR ≥ 0.70 AVE ≥ 0.50
A Culture of Knowledge Sharing (W1)	1. Open communication among employees. 2. Tolerance for innovative mistakes. 3. Incentives for team collaboration.	Inkinen dkk. (2022)	$\alpha \geq 0.70$ CR ≥ 0.70 AVE ≥ 0.50

Hypothesis Testing (Structural Model)

The structural model was empirically tested using the following system of simultaneous regression equations:

$$Y1 = \beta1 X1 + \beta2 W1 + \beta3 (X1 \times W1) + \gamma1 C1 + \gamma2 C2 + e1$$
$$Y2 = \beta4 X1 + \beta5 Y1 + \gamma3 C1 + \gamma4 C2 + e2$$

- Where:
- X1 : AI-Enabled Knowledge Integration Capability (AI-KIC)
 - W1 : Knowledge-Sharing Culture
 - Y1 : Ambodextrous Innovation
 - Y2 : Organizational Resilience
 - C1 : Firm Size
 - C2 : Firm Age

$\beta_1 \dots \beta_2$: Path Coefficients
 $\gamma_1 \dots \gamma_2$: Control Coefficients
 e_1, e_2 : Residual error

Predictive power is assessed based on the Coefficient of Determination (R^2) for the endogenous variable, while the significance of direct and mediating effects is recommended to be tested using nonparametric bootstrapping with a 95% bias-corrected confidence interval (t-statistics > 1.96 and p-value < 0.05).

Theoretical Contributions

This conceptual study makes a highly valuable theoretical contribution to the development of knowledge management and strategic management.

First, this model revitalizes the classical Knowledge-Based Theory (KBT) (Grant, 1996) by expanding the boundaries of knowledge agents. While conventional KBT models assume that only humans possess the capacity to integrate specialized knowledge, this new model conceptually demonstrates that AI can act as a dynamic cognitive partner. This lays the foundation for the development of the “Human-AI Symbiotic Knowledge Integration” literature, which is urgently needed in the post-2025 digital era.

Second, this model offers a conceptual resolution to the inconsistencies in the literature regarding the impact of artificial intelligence investments on organizational performance. The simultaneous integration of AI-KIC and a knowledge-sharing culture reveals a close complementary relationship: technological capabilities (AI-KIC) provide the computational engine for data analysis, while the cultural aspect (knowledge-sharing culture) minimizes employees’ sociopsychological barriers. This socio-technical combination demonstrates that advanced technology will only foster resilience when supported by a collaborative human ecosystem.

Practical Implications for KIBS industry practitioners and CIOs/CEOs

This study provides strategic guidance that AI adoption should not be treated merely as an isolated IT department digitization project. For AI investments to deliver high value, companies must design work routines that integrate AI-driven, data-based recommendations with the tacit judgment (intuition) of human experts.

Furthermore, organizational leaders must actively address employees’ anxiety about technology by fostering a culture of knowledge sharing. This can be achieved by establishing incentive structures that encourage team collaboration, organizing cross-departmental discussion forums to analyze insights from AI systems, and promoting a work environment that tolerates innovative mistakes resulting from employees’ digital experiments.

CONCLUSION

This conceptual study successfully formulated a comprehensive theoretical model linking AI-Enabled Knowledge Integration Capability (AI-KIC) to organizational resilience through the mediation of ambidextrous innovation and under the moderation of a knowledge-sharing culture. The fundamental conclusion of this study indicates that organizational resilience cannot be built instantly through the massive adoption of AI technology alone. A company’s resilience in the face of a crisis is the result of socio-technical alignment, in which artificial intelligence analytical capabilities are absorbed and operationalized in a balanced manner into exploitative and exploratory innovation thanks to the support of a collaborative organizational culture.

Theoretical Novelty: The primary novelty of this conceptual article lies in the formulation of the concept of “Human-AI Symbiotic Knowledge Integration” within the framework of Knowledge-Based Theory (KBT). Unlike previous research that viewed the adoption of AI technology and human knowledge management separately, this model originally unites these two dimensions as a “dual-engine” driving ambidextrous innovation. This research challenges the skeptical view that positions AI as a threat to humans and, instead, offers a new, integrative perspective on how human-AI symbiotic collaboration can strengthen an organization’s resilience in an era of extreme uncertainty.

REFERENCES

- Cabrita, M. do R., Silva, R., & Duarte, S. (2022). Intellectual capital, artificial intelligence and knowledge management: A systematic literature review. *Journal of Knowledge Management*, 26(11), 125–148. <https://doi.org/10.1108/JKM-01-2022-0012>
- Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2022). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*, 50(2), 221–242. <https://doi.org/10.1007/s11747-021-00818-y>
- Duchek, S. (2020). Organizational resilience: a capability-based conceptualization. *Business Research*, 13(1), 215–246. <https://doi.org/10.1007/s40685-019-00101-9>
- Dwivedi, Y. K., Kshetri, N., Hughes, L., & Ribeiro-Navarrete, S. (2023). "So what if AI is smart?" Understanding the human-AI integration challenge in knowledge-intensive firms. *International Journal of Information Management*, 71, 102641. <https://doi.org/10.1016/j.ijinfomgt.2023.102641>
- Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal*, 47(2), 209–226. <https://doi.org/10.5465/30003450>
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(S2), 109–122. <https://doi.org/10.1002/smj.4250171110>
- Inkinen, H., Kianto, A., Vanhala, M., & Ritala, P. (2022). Knowledge management practices and organic organizational structure as drivers of organizational resilience. *Journal of Knowledge Management*, 26(7), 1801–1821. <https://doi.org/10.1108/JKM-04-2021-0311>
- Katihar, S., Khan, F., & Saufi, R. A. (2024). Building resilient organizations through knowledge capabilities and strategic ambidexterity: A post-pandemic analysis. *Journal of Business Research*, 172, 114412. <https://doi.org/10.1016/j.jbusres.2023.114412>
- Muhammad, S., Adhiatma, A., & Hartono, S. (2025). Digital knowledge management, collaborative culture, and innovation capabilities: Evidence from Indonesian higher education. *International Journal of Educational Management*, 39(1), 45–62.
- Papa, A., Mital, M., Pisano, V., & Del Giudice, M. (2023). E-knowledge integration and open innovation: The role of artificial intelligence capabilities in modern high-tech SMEs. *Technological Forecasting and Social Change*, 188, 122284. <https://doi.org/10.1016/j.techfore.2022.122284>
- Report, I. (2024). Leveraging Generative AI for Job Augmentation and Workforce Productivity : Scenarios , Case Studies and a Framework for Action. November.

- Santoro, G., Messeni Petruzzelli, A., & Del Giudice, M. (2024). Fostering business model resilience through artificial intelligence and knowledge management. *Journal of Business Research*, 170, 114309. <https://doi.org/10.1016/j.jbusres.2023.114309>
- Schiuma, G., Carlucci, D., & Sole, F. (2024). Rethinking knowledge management in the era of generative AI: Human-AI collaborative knowledge creation. *Journal of Knowledge Management*, 28(2), 312–335. <https://doi.org/10.1108/JKM-07-2023-0599>
- Secundo, G., Toma, A., & De Beer, C. (2023). Harnessing the power of AI for intellectual capital and knowledge creation. *Journal of Intellectual Capital*, 24(4), 981–1005. <https://doi.org/10.1108/JIC-10-2022-0210>
- Vrontis, D., Christofi, M., Pereira, V., & Tarba, S. (2022). Artificial intelligence, smart devices and organizational knowledge: An integrative review and future research agenda. *Journal of Business Research*, 141, 140–162. <https://doi.org/10.1016/j.jbusres.2021.11.092>
- Zhang, Y., Wang, Y., & Zhang, X. (2023). Digital knowledge integration, ambidextrous innovation and organizational resilience: A dynamic capabilities perspective. *Technovation*, 124, 102754. <https://doi.org/10.1016/j.technovation.2023.102754>