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Knowledge-sharing behaviour as a pathway to competitive advantage: The nexus of artificial intelligence adoption and human resource competence

Authors:
Sri Wahyu Lelly Hana Setyanti[1]
Khanifatul Khusna[1]
Ni Ketut Seminari[2]
Kamillaeni Jamillah[1]

Affiliations:
[1]Department of Management, Faculty of Economics and Business, University of Jember, Jember, Indonesia

[2]Department of Management, Faculty of Economics and Business, University of Udayana, Denpasar, Indonesia

Corresponding author:
Sri Wahyu Lelly Hana Setyanti,
lelyhana.feb@unej.ac.id

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Orientation: The impact of artificial intelligence (AI) adoption and skills on organisational competitive advantage (CA) is examined through knowledge-sharing behaviour (KSB) in Indonesia's creative industry.

Research purpose: This study investigates the impact of AI adoption and competence on organisational CA through KSB in the creative industry in Indonesia.

Motivation for the study: Indonesia's creative industry is facing technological disruption that demands the use of AI. However, little research has demonstrated the role of a culture of knowledge sharing and individual competency in optimising CA.

Research approach/design and method: The study employed quantitative methods by distributing a survey to 225 individuals working in the creative industry. Structural equation modelling (SEM) was used for analysis.

Main findings: The results show that all independent variables, including AI adoption, competence, and KSB, significantly influence organisational CA. Furthermore, KSB was found to mediate the relationship between AI adoption and competence on CA.

Practical/managerial implications: These findings not only add to the literature on knowledge management but also provide practical guidance for managing organisations in the digital age. A culture of knowledge sharing must be fostered to maximise the benefits of AI adoption and competence in enhancing CA.

Contribution/value-add: This study demonstrates that to achieve CA, AI adoption, competencies and KSB are needed. These results demonstrate that technology alone is insufficient without structured teamwork behaviours.

Keywords: knowledge-sharing behaviour; competitive advantage; AI adoption; human resource competence; creative industry; structural equation modelling.

Introduction

Businesses nowadays must adapt to survive and expand because of environmental instability and heightened competition (Siahaan & Tan, 2022). The creative industry, particularly Indonesia's batik and weaving sector, is under pressure to transform to remain relevant, become more competitive, and address the challenges of the evolving digital market. Conversely, strengthening human resource capabilities is crucial, as technology will only have a significant impact if industry players can utilise it effectively. Increasing competitive advantage (CA) does not always mean introducing more technology, especially for micro, small, and medium enterprises (MSME) that rely on cultural heritage such as weaving and batik.

Businesses cannot endure over time without a durable CA (Tong et al., 2022). Competitive advantage refers to a condition that places a business in a better or more profitable position (Wening et al., 2023). Competitive advantage in the batik and weaving creative industry depends on individual and organisational capabilities in production, management, and marketing. Further studies related to CA have been conducted by previous researchers across various fields, such as education (Zhang et al., 2022). Then, research by Tong et al. (2022) encourage advancement from the standpoint of bolstering company technologies and infrastructure to obtain a competitive edge.

In this study, one thing that researchers consider to have an influence on CA is knowledge-sharing behaviour (KSB). Knowledge-sharing behaviour is a crucial activity for businesses, as it enhances processes, employees, products, and overall performance (Alshebami et al., 2023). Knowledge sharing between partners can foster intercultural attitudes, competencies, and awareness, while also contributing to intercultural knowledge development (Shadiev et al., 2021). The purpose of knowledge sharing is to enable agents to balance the costs of sharing knowledge in different circumstances with the techniques they choose to use (Sarkadi et al., 2022). According to previous research (Wening et al., 2023), KSB has a significant effect on CA.

One of the factors that influences CA is artificial intelligence (AI) adoption (Penglong et al., 2024). Determining the use of AI technology is crucial because it has become a part of everyday life (Wang et al., 2023). By increasing productivity, accuracy, and decision-making, AI technologies seek to improve operations and radically alter how businesses handle their human resources (Ncube et al., 2025). Powerful AI systems are being developed that can communicate in natural language, understand user intent, and provide scalable, personalised, and interactive support (Ilieva et al., 2025). The AI-powered chatbots and virtual assistants can now respond to consumer requests 24/7 and much faster than humans (Khan et al., 2024). According to previous research (Gazi et al., 2024; Khan et al., 2024; Sarkadi et al., 2022), AI adoption has a significant effect on KSB. Similarly, AI adoption significantly affects CA (Abdelfattah et al., 2024; Climent et al., 2024; Kemp, 2023; Penglong et al., 2024; Wetering et al., 2023; Yoo et al., 2024).

To encourage more value-adding and business-centred services and processes, competency is one of the factors being prioritised (Coetzee et al., 2025). Competence frameworks outline the fundamental skills and abilities needed within organisations (Yang & Shen, 2025). These capabilities allow staff to align operational processes and evaluate project effectiveness, informing decisions about emerging trends (Joseph et al., 2021). According to previous studies (Smirnov et al., 2023), competence has a significant effect on KSB, and research by Sukoroto et al. (2023), Tong et al. (2022) and Zhang et al. (2022) confirms that competence has a significant effect on CA.

Based on the given explanation, the research questions we aim to address are: how do AI adoption and competence partially influence KSB and CA in the creative industry? And does KSB mediate the effect of AI adoption and competence on CA?

Accordingly, the research objectives are: to examine the partial influence of AI adoption and competence on KSB and CA in the creative industry and to analyse the mediating role of KSB in the relationship between AI adoption and competence on CA.

Literature review and hypothesis development

Artificial intelligence adoption

Organisations around the world are witnessing revolutionary shifts in the business landscape because of technological breakthroughs (Assounga & Sibassaha, 2024). Sustainable entrepreneurship strategies are increasingly incorporating AI (Ojong, 2025). An increasingly important technique is the application of AI, which facilitates the improvement of employee performance across a variety of tasks (Olan et al., 2024). Artificial intelligence can also help businesses to increase support and better allocate resources without requiring new licences, as automation reduces the workload on IT staff and minimises the rising costs of systems (Ganesan et al., 2025). Artificial intelligence is drastically transforming the commercial landscape and has become a crucial tool for improving global creativity, decision-making, and operational efficiency in the digital era (Herath & Mittal, 2022; Menzies et al., 2024). Further studies related to AI adoption have been conducted across fields: entrepreneurship (Ojong, 2025), education (Arya et al., 2025; Ilieva et al., 2025; Ma et al., 2025), development and services (Ahmad et al., 2025; Soleimani et al., 2022), and healthcare (Spatscheck et al., 2024; Yang et al., 2025).

AI-powered knowledge management is essential for promoting a culture of ongoing learning and collaboration within organisations by facilitating the exchange of knowledge and skills (Olan et al., 2024). According to previous research (Gazi et al., 2024; Khan et al., 2024; Sarkadi et al., 2022), AI adoption has a significant effect on KSB. Therefore, based on prior theories and research, the research hypothesis is:

H1a: AI adoption has a positive and significant effect on knowledge-sharing behaviour.

The adoption of AI contributes significantly to a company's CA by fostering innovation, increasing operational efficiency, and facilitating the creation of dynamic capabilities (Abdelfattah et al., 2024). Artificial intelligence-powered business strategies play a critical role in achieving CA (Climent et al., 2024). According to previous research (Abdelfattah et al., 2024; Climent et al., 2024; Kemp, 2023; Penglong et al., 2024; Wetering et al., 2023; Yoo et al., 2024), AI adoption has a significant effect on CA. Therefore, the research hypothesis is:

H2a: AI adoption has a positive and significant effect on competitive advantage.

Human resource competence

Competence frameworks, which outline the fundamental skills, knowledge, and abilities required for job success, are used in competency forecasting (Yang & Shen, 2025). The ability to link staff operations to organisational processes allows employees to report on project effectiveness and make informed decisions based on emerging trends (Joseph et al., 2021). Competence is the

ability to create, modify, or enhance outcomes in order to make one's work more valuable (Kenedi et al., 2024). According to Braßler and Sprenger (2021), five important competencies were identified: (1) systems thinking, (2) anticipation or forward-thinking, (3) normative or value-based thinking, (4) strategic or action-oriented thinking, and (5) the ability to collaborate and interact with others. Studies on competence have also been carried out in SMEs (Chen et al., 2023), education (Arya et al., 2025; Ma et al., 2025; Rienda-Gómez et al., 2025; Xu & Liu, 2023), and the service sector (Assounga & Sibassaha, 2024; Lindawati & Wulani, 2021; Lubis et al., 2022).

An organisation's most valuable resource is considered to be knowledge (Zhang, 2022). According to previous research (Smirnov et al., 2023), competence has a significant effect on KSB. Therefore, the research hypothesis is:

H1b: Competence has a positive and significant effect on knowledge-sharing behaviour.

Competence is the ability to apply logic, ideas, and imagination to accomplish, adapt, and improve outputs in order to perform meaningful work (Kenedi et al., 2024). According to previous research (Sukoroto et al., 2023; Tong et al., 2022; Zhang et al., 2022), competence has a significant effect on CA. Therefore, the research hypothesis is:

H2b: Competence has a positive and significant effect on competitive advantage.

Knowledge-sharing behaviour

Knowledge is a valuable resource for organisations, and encouraging knowledge sharing supports both organisational goals and employees' interpersonal development (Zhang, 2022). Knowledge is generally divided into two types: explicit and tacit (Wening et al., 2023). Acquired knowledge can address a wide range of organisational challenges and concerns (Nayebpour & Sehhat, 2024). Further studies related to KSB have been conducted in various fields: in online platforms (Sun et al., 2024), education (Gebreyohans et al., 2022), and organisational settings (Thomas, 2025).

Knowledge is a crucial source of CA, and knowledge transfer is necessary to obtain a competitive edge. Individual human capital is an asset that is naturally transferable (Stadler et al., 2022). Knowledge sharing has become more efficient as a result of people's increased ability to acquire and disseminate information more quickly and easily (Huang et al., 2023). Knowledge sharing is a critical activity for businesses, as it enhances four key areas: processes, employees, products, and overall enterprise performance (Alshebami et al., 2023).

Knowledge sharing between partners can foster intercultural attitudes, skills, and awareness while also contributing to intercultural knowledge development (Shadiev et al., 2021). The purpose of knowledge sharing is to enable agents to balance the costs of sharing knowledge in various contexts with the methods they choose to employ (Sarkadi et al., 2022). According to previous research by Wening et al. (2023), KSB has a significant effect on CA. Therefore, based on previous theories, the research hypothesis is:

H3: Knowledge-sharing behaviour has a positive and significant effect on competitive advantage.

Competitive advantage

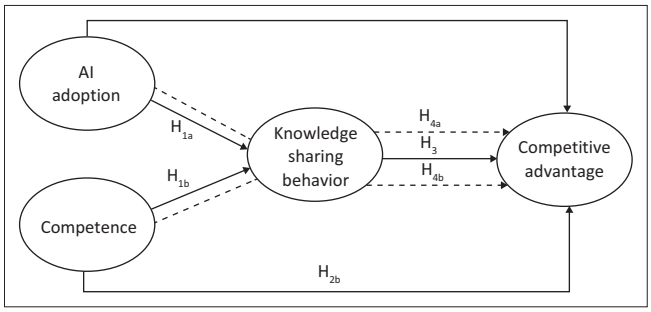
Competitive advantage is a condition that places a business in a better or more profitable position (Wening et al., 2023). Artificial intelligence-powered solutions can further enhance inclusivity by utilising multimodal distribution, alternative formats (including audio), and simplified language to tailor content for users with varying needs. These features improve the accuracy of assessments and support the development of simulations, scenario-based tasks, and problem-solving environments that reflect professional contexts (Ilieva et al., 2025). By integrating AI into information systems, businesses can enhance customer engagement, optimise marketing strategies, and gain a competitive edge (Ganesan et al., 2025). Therefore, based on previous theories and research, the research hypothesis is:

H4a: AI adoption has a positive and significant effect on competitive advantage through knowledge-sharing behaviour.

Applying knowledge and practical skills to achieve optimal performance is the core of competency. Competency refers to the sum of a person's skills, abilities, and other personal attributes that enable them to complete tasks successfully (Kenedi et al., 2024). It becomes easier to acquire complementary skills and knowledge when members of a company's network collaborate and share information (Shen et al., 2025). Competitive advantage is a condition that places a business in a superior or more profitable position (Wening et al., 2023). Therefore, based on previous theories and research, the research hypothesis is:

H4b: Competence has a positive and significant effect on competitive advantage through knowledge-sharing behaviour.

Figure 1 depicts the conceptual model.



AI, artificial intelligence.

FIGURE 1: Conceptual model.

Research design

The quantitative process in this study used the partial least squares path modelling (SEM-PLS) method and SmartPLS 3.0 software to analyse the hypotheses and determine the outcomes of the human resource management strategy on organisational performance through innovation capability, with the research object being the creative industry. SmartPLS was used as the analysis tool, which is helpful in predicting correlations between components and validating hypotheses – to clarify whether or not there is a relationship between the factors (Hair et al., 2019).

Independent variables are elements that influence the dependent object or variable. Artificial intelligence adoption (X1) and competence (X2) are the independent variables in this research. In this study, CA (Y) is the dependent variable. Intervening variables are those that influence the relationship between the independent and dependent variables; in this research, KSB (Z) serves as the intervening variable

Researchers conducted a direct field survey in several batik and weaving industry centres in East Java. The survey included MSMEs, creative designers, community managers, and cooperatives associated with the industry. Researchers used quantitative methods by distributing questionnaires to determine the extent to which industry players have adopted AI technology, their level of capability, the intensity of their KSB, and their perceptions of business competitiveness. The initial results of this survey served as the basis for developing seven additional hypotheses to be tested to create relevant and applicable competitive strategies.

To collect data, 225 creative industry practitioners were given a questionnaire. The technique of purposive sampling was employed. Artificial intelligence adoption, competence, KSB and CA were measured using a five-point Likert scale that went from strongly disagree (1) to strongly agree (5). The development of the instrument was based on these well-established measuring scales. The SEM-PLS is an effective tool for analysing research data. The participants' characteristics were as follows.

Based on Table 1, the majority of participants were female (56.9%), and most business owners were between 41 years and 50 years old (33.8%). The majority of respondents had a senior high school education and had been operating their businesses for 5–10 years. Most businesses (52.9%) employed between 1 and 4 people, indicating the micro-scale nature of the surveyed business units. In terms of revenue, 37.8% of respondents reported monthly sales between 10 million rupiah and 25 million rupiah. The variable measurements are presented in Table 2 below.

TABLE 1: Respondents' characteristics.

Characteristics	Quantity	Frequency (%)
Gender		
Male	97	43.1
Female	128	56.9
Age of owner (years)		
< 30	40	17.8
31–40	45	20.0
41–50	76	33.8
> 51	64	28.4
Level of education		
Senior high school	126	56.0
Undergraduate	99	44.0
Years of operation		
< 5	45	20.0
5–10	101	44.9
11–20	58	25.8
> 20	21	9.3
Number of employees		
1–4	119	52.9
5–19	74	32.9
20–99	32	14.2
Sales per month (million IDR)		
< 10	85	37.8
10–25	99	44.0
> 25	41	18.2

Ethical considerations

Ethical clearance to conduct this study was obtained from Jember University Ethics Committee of the Faculty of Dentistry (Reference number 3363/UN25.8/KEPK/DL/2025). All procedures performed in studies involving human participants were in accordance with the ethical standards.

Results

Measurement model

Partial least squares path modelling is a statistical method used in this study to simulate complex relationships between variables or elements that are not directly observable (Hair et al., 2019). While the structural model explains the relationships between variables, the measurement model explains how each construct is measured. The model measurement is presented in Figure 2.

To ensure the validity and reliability of the constructs, a comprehensive measurement technique was employed. A set of indicators was used to measure each construct. The primary statistical measures for these constructs are shown in the following Table 3. Partial Least Squares Structural Equation Modeling offers comprehensive hypothesis testing using methods such as bootstrapping, construct validity, and path analysis. The results are presented in Table 3.

PLS analysis is particularly important for SEM because of its practicality (Hair et al., 2019). The impact size and predictive relevance are as follows (see Table 4).

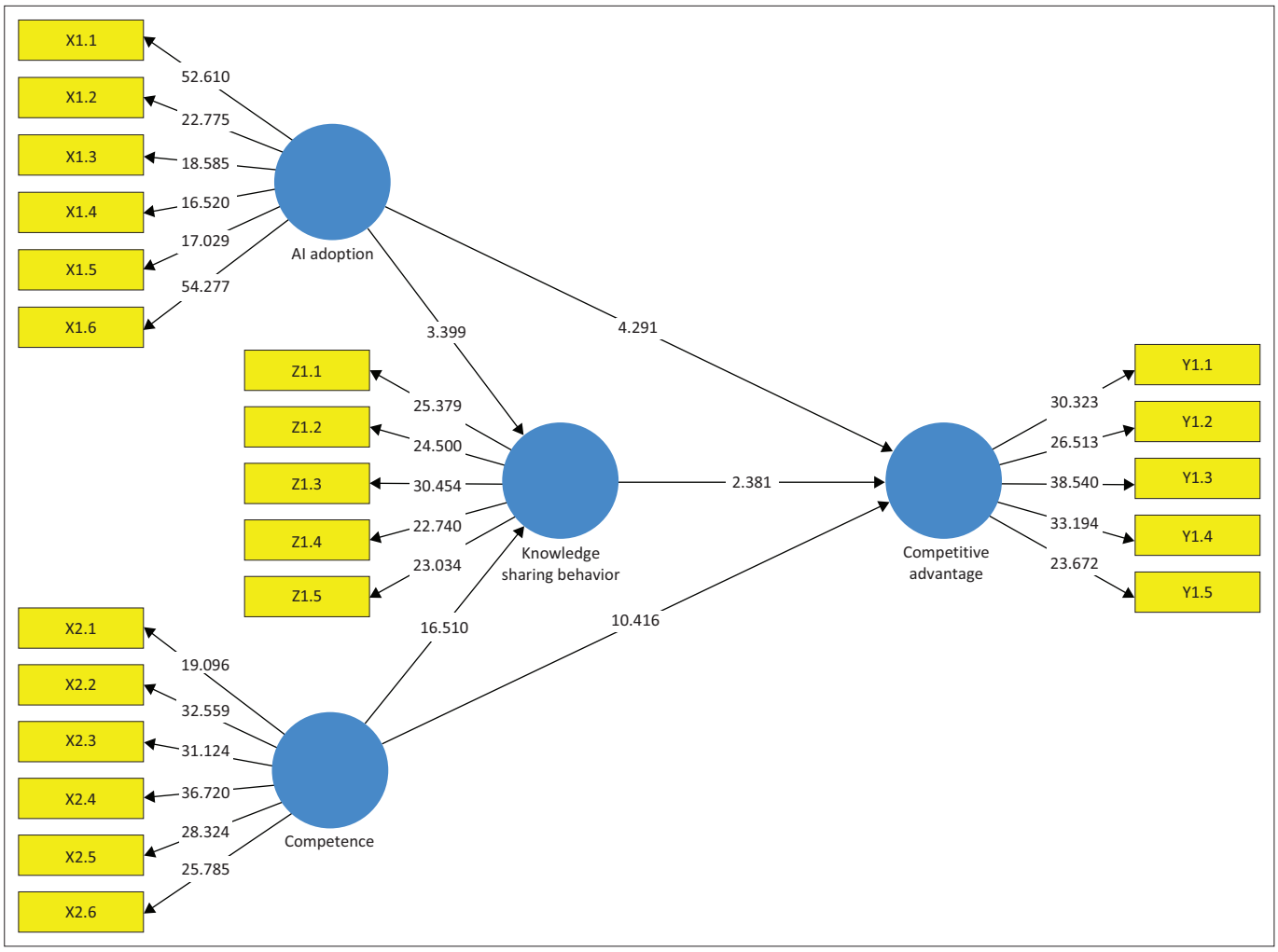
The *R* square (R^2) values in Table 4 show that KSB has a value of 0.784 and CA has a value of 0.727, indicating that the variables AI adoption and competence are able to

TABLE 2: Variable measurement.

Variable	Reference	Questionnaire statement
AI adoption	Pan et al. (2022)	1. I have utilised AI-based technology for business improvement. 2. AI-based digital technology can help improve marketing and sales. 3. All employees have been introduced to AI-based digital technology to ensure smooth business processes. 4. Adopting AI technology can help speed up product design. 5. Adopting AI technology can help accelerate the marketing process. 6. I enjoy leveraging AI as a strategic tool to improve business efficiency and productivity.
Competence	Braßler and Sprenger (2021), Puerta et al. (2022)	1. I have the ability to complete work according to established standards. 2. I have a good understanding of task procedures. 3. I have relevant work experience that supports my job. 4. I possess good adaptability and creativity skills. 5. I have sound managerial skills and can work independently. 6. I have the ability to direct and solve problems effectively.
KSB (knowledge-sharing behaviour)	Braßler and Sprenger (2021)	1. I always share my knowledge with coworkers. 2. I consistently share my knowledge with the team. 3. I regularly share new insights or understandings with others in the workplace. 4. I am willing to share my skills with coworkers. 5. I am open to sharing my abilities to help the team.
CA (competitive advantage)	Singh et al. (2019)	1. Competitive advantage over competitors. 2. Possession of rare and irreplaceable resources. 3. Capabilities that are difficult to imitate. 4. Products with unique features or innovations. 5. Ability to analyse market data, understand consumer behaviour, and make strategic decisions.

Note: Please see the full reference list of this article: Setyanti, S.W.L.H., Khusna, K., Seminari, N.K. & Jamillah, K. (2025). Knowledge-sharing behaviour as a pathway to competitive advantage: The nexus of artificial intelligence adoption and human resource competence. *SA Journal of Human Resource Management/SA Tydskrif vir Menslikehulpbronbestuur, 23*(0), a3315. https://doi.org/10.4102/sajhrm.v23i0.3315 for more information.

AI, artificial intelligence.



AI, artificial intelligence.

FIGURE 2: Structural model research.

TABLE 3: Convergent validity, AVE, Cronbach's alpha, and composite reliability test.

Variable	Item	Loading factor (> 0.60)	AVE (> 0.50)	Cronbach's alpha (> 0.60)	CR (> 0.60)
AI adoption	X1.1	0.88	0.60	0.87	0.90
	X1.2	0.70	-	-	-
	X1.3	0.74	-	-	-
	X1.4	0.68	-	-	-
	X1.5	0.73	-	-	-
	X1.6	0.79	-	-	-
Competence	X2.1	0.73	0.63	0.88	0.91
	X2.2	0.84	-	-	-
	X2.3	0.80	-	-	-
	X2.4	0.84	-	-	-
	X2.5	0.78	-	-	-
	X2.6	0.77	-	-	-
KSB	Z1.1	0.77	0.59	0.83	0.88
	Z1.2	0.75	-	-	-
	Z1.3	0.80	-	-	-
	Z1.4	0.75	-	-	-
	Z1.5	0.77	-	-	-
CA	Y1.1	0.82	0.64	0.86	0.90
	Y1.2	0.77	-	-	-
	Y1.3	0.82	-	-	-
	Y1.4	0.80	-	-	-
	Y1.5	0.81	-	-	-

AI, artificial intelligence; KSB, knowledge-sharing behaviour; CA, competitive advantage; AVE, average variance extracted; CR, composite reliability.

TABLE 4: R-square and f-square test.

Analysis type	Path or variable	Value	Interpretation
R square	KSB	0.78	78.4% explained
	CA	0.73	72.7% explained
F square	AI adoption → KSB	0.06	Medium
	Competence → KSB	1.14	Strong
	AI adoption → CA	0.07	Medium
	Competence → CA	0.58	Strong
	KSB → CA	0.05	Medium

KSB, knowledge-sharing behaviour; CA, competitive advantage; AI, artificial intelligence.

influence KSB by 78.4% and CA by 72.7%, while the remaining variance is affected by factors outside the model. The F square (f^2) test is a measure of effect size in regression analysis that helps assess how much the independent variable contributes to explaining the model. This study identifies two strong relationships and three medium relationships.

Direct and indirect effects

Hypothesis testing is used to evaluate the significance of the impact of exogenous variables on endogenous variables using the bootstrap resampling approach. The significance threshold in this study is a p-value less than 5% or 0.05. The results are presented in Table 5.

Based on Table 5, both direct and indirect effects are presented in relation to the research hypotheses. Directly, AI adoption has a significant effect on both KSB and CA. Similarly, competence significantly affects both KSB and CA. In addition, KSB has a significant direct effect on CA. For the indirect effects, AI adoption and competence are shown to significantly impact CA through the mediation of KSB.

TABLE 5: Hypothesis testing.

Path or variable	H	T statistic	p-value	Interpretation
AI adoption → KSB	H1a	3.40	0.001	Supported
Competence → KSB	H1b	16.51	0.000	Supported
AI adoption → CA	H2a	4.29	0.000	Supported
Competence → CA	H2b	10.42	0.000	Supported
KSB → CA	H3	2.38	0.018	Supported
AI adoption → KSB → CA	H4a	1.99	0.048	Supported
Competence → KSB → CA	H4b	2.35	0.019	Supported

KSB, knowledge-sharing behaviour; CA, competitive advantage; AI, artificial intelligence.

Discussion

The first hypothesis is that AI adoption has a significant effect on KSB in the creative industry. In addition to creating a unique database that enables it to apply AI and provide distinctive services, the company's use of AI prevents clients, suppliers, and other stakeholders from switching to a rival's business model (Climent et al., 2024). The batik and weaving creative industries will become more active in sharing knowledge through the use of AI technology. For example, artisans who use AI applications to create design patterns or digitally process fabrics are likely to share their benefits and methods with the community through online forums, local workshops, or social media. Businesses are becoming more open to discussions, sharing experiences, and providing technical solutions, thanks to the adoption of AI. This creates a collaborative work environment that was previously difficult to build when work was performed manually. Thus, AI is not just a tool for innovation; it is also changing the way the creative industry operates. This result is in accordance with Gazi et al. (2024), Khan et al. (2024) and Sarkadi et al. (2022), who found that AI adoption has a significant effect on KSB.

The second hypothesis is that competence has a significant effect on KSB in the creative industry. The competence level of entrepreneurs, particularly in management and technology, is crucial for encouraging knowledge sharing. Craftsmen or entrepreneurs in the batik and weaving industries who deeply understand the manufacturing process, digital marketing, or creative financial management tend to be more active participants in various discussion forums and community training sessions. Individuals with strong competencies have the confidence to share their knowledge and also understand the strategic value of information exchange. Therefore, knowledge sharing becomes more than just a social activity; it becomes a means of collaboration within the creative industry. This result is in accordance with Smirnov et al. (2023), who found that competence has a significant effect on KSB.

The third hypothesis is that AI adoption has a significant effect on CA in the creative industry. Artificial intelligence-enabled organisational capabilities provide a CA. For these capabilities to yield a competitive edge and facilitate value generation and use, they must have the proper level of specificity, development

cost, and environmental fit (Climent et al., 2024). In the batik and weaving industry, the use of AI enhances CA through process automation, increased efficiency, and the creation of unique products. Businesses that use AI have a better chance of competing in a highly innovative and fast-paced market. The use of algorithms to reach specific audiences on social media is one example of how AI can optimise digital marketing. Therefore, AI-based facilitation programmes should encourage AI adoption, as it is a crucial part of long-term growth plans. This result is in accordance with Abdelfattah et al. (2024), Climent et al. (2024), Kemp (2023), Penglong et al. (2024), Wetering et al. (2023) and Yoo et al. (2024), who found that AI adoption has a significant effect on CA.

The fourth hypothesis is that competence has a significant effect on CA in the creative industry. Competitive advantage in the batik and weaving creative industry depends on individual and organisational capabilities in production, management, and marketing. To face the dynamics of competition, entrepreneurs with advanced technical skills, an understanding of design principles, the ability to read market trends, and the ability to manage resources efficiently will be better prepared. In fact, competency enhancement can be achieved through training programmes, certifications, and business incubation programmes specifically designed for the creative sector, which relies on cultural heritage. Batik and weaving artisans with superior skills can survive and become pioneers in markets. This result is in accordance with Sukoroto et al. (2023), Tong et al. (2022) and Zhang et al. (2022), who found that competence has a significant effect on CA.

The fifth hypothesis is that KSB has a significant effect on CA in the creative industry. The KS is essential to any organisation's success and CA. Meanwhile, knowledge networks have emerged as a means of improving individual information sharing and as a useful instrument for promoting knowledge exchange in the domains of medicine, education, and business (Oskouei et al., 2024). Collective CA can be achieved through knowledge sharing within the batik and weaving community. When industry players share ideas about effective production strategies, environmentally friendly dyeing methods, or digital marketing techniques, this information spreads and results in equitable progress throughout the community. Creative collaboration centres, online community platforms, or peer-learning-based events are some ways to implement these activities. Therefore, a culture of sharing can be used to increase competitiveness among individuals and business groups in the batik and weaving creative industries. This result is in accordance with Wening et al. (2023), who found that KSB has a significant effect on CA.

The sixth hypothesis is that AI adoption has a significant effect on CA through KSB in the creative industry. The CA is a circumstance that puts the business in a better or more lucrative position (Wening et al., 2023). Therefore, to enhance AI's CA, efforts must be focused directly on improving access to tools, technical training, and real-life project-based mentoring. This is because sharing behaviour cannot replace the fundamental need for technological skills and tools to gain CA. By integrating AI, businesses may increase customer engagement, optimise marketing strategies, and gain a competitive edge (Ganesan et al., 2025).

The seventh hypothesis is that competence has a significant effect on CA through KSB in the creative industry. Skilled entrepreneurs in the batik and weaving industry will have a greater CA if they engage in knowledge-sharing practices. This means that their skills not only benefit the individual but can also provide value to others when shared within the creative community. It is easier to acquire the complementary skills and knowledge that members of a company's network possess when they collaborate and share information (Shen et al., 2025). Knowledge sharing facilitates the transition from competence to tangible market advantage. Therefore, in the batik and weaving creative industries, strengthening a culture of sharing should be a key strategy in human resource development policies. This will translate individual expertise into collective impact in industry competition. CA is a circumstance that puts the business in a better or more lucrative position (Wening et al., 2023).

Conclusion

The results show that all independent variables, including AI adoption, AI competency, and KSB, significantly influence organisational CA. Furthermore, KSB is proven to mediate the relationship between AI adoption and competence on CA. The current globalisation period makes rivalry fierce in the economic and industrial sectors. Every organisation wants every worker to be able to accomplish the organisation's goals (Sasmita et al., 2023). These results suggest that, in the current era of digital transformation, synergy between technology and human resource capabilities is essential for enhancing a company's long-term competitiveness, particularly in the creative industry. Therefore, to achieve sustainable excellence, the creative sector must pay close attention to the use of AI technology and the development of a knowledge-based collaborative culture.

To achieve real CA, the creative industry must recognise that the adoption of AI should be combined with employee competency development. Therefore, HR development strategies are a crucial part of digital transformation, not merely a complement. Instilling a culture of knowledge sharing is also essential. Overall, organisations must create a work environment that encourages both technology adoption and cross-functional collaboration; however, research shows that KSB can bridge the gap between competency and CA.

Practically, these findings show that businesses cannot just embrace AI; in order to fully capitalise on the advantages of this technology to boost competitiveness, they also need to establish a culture of information sharing. Organisations may turn the use of AI into real benefits through cooperation, creativity, and ongoing learning in the workplace by enhancing human resource competencies.

Limitations of the study and suggestions for further studies

While this research helps in understanding how knowledge and technology behaviour shape competitiveness, it has several limitations. Firstly, the data used are limited to a few creative industries and may not reflect the overall characteristics of the sector at the national level. Secondly, the quantitative approach does not examine the qualitative aspects of human-technology interactions as a whole, including cultural values regarding knowledge sharing or resistance to change. Thirdly, because this research is cross-sectional, it cannot reveal how organisational behaviour and technology adoption evolve over time.

Long-term research is recommended to examine how AI adoption and KSB change over time. To better align the findings with the diverse creative industries in Indonesia, the research should be expanded both sectorally and geographically. From a practical perspective, local governments and industry stakeholders should support AI skills training and develop digital-based knowledge collaboration platforms to accelerate innovation. To enhance the competitiveness of the creative industry at the regional and national levels, the combination of technological and human cognitive skills must serve as a strategic foundation.

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Competing interests

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CRediT authorship contribution

Sri Wahyu Lelly Hana Setyanti: Conceptualisation, Methodology, Formal analysis, Investigation. Khanifatul Khusna: Software, Validation, Data curation, Resources. Ni Ketut Seminari: Software, Validation, Data curation, Resources, Writing – review & editing. Kamillaeni Jamillah: Resources, Writing – review-& editing, Supervision, Funding acquisition. All authors reviewed the article, contributed to the discussion of results, approved the final version for submission and publication, and take responsibility for the integrity of its findings.

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Data availability

The data supporting the findings of this study are available from the corresponding author, Sri Wahyu Lelly Hana Setyanti, upon reasonable request.

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References

Abdelfattah, F., Salah, M., Dahleez, K., Darwazeh, R., & Al Halbusi, H. (2024). The future of competitive advantage in Oman: Integrating green product innovation, AI, and intellectual capital in business strategies. *International Journal of Innovation Studies, 8*(2), 154–171. https://doi.org/10.1016/j.ijis.2024.02.001

Ahmad, M.O., Ahmed, I., Al-Baik, O., Hussein, A.H., Abu Alhaija, M.A., & Albizri, A. (2025). Unlocking citizen confidence: Examining trust and continuance intentions in digital services. *Journal of Asia Business Studies, 19*(4), 1104–1128. https://doi.org/10.1108/JABS-08-2024-0424

Alshebami, A.S., Seraj, A.H.A., Elshaer, I.A., Al Shammre, A.S., Al Marri, S.H., Lutfi, A., Salem, M.A., & Zaher, A.M.N. (2023). Improving social performance through innovative small green businesses: Knowledge sharing and green entrepreneurial intention as antecedents. *Sustainability (Switzerland), 15*(10), 8232. https://doi.org/10.3390/su15108232

Arya, V., Saraf, A., Chichkanov, N., Papa, A., & Romano, M. (2025). AI-enhanced competency transfer hubs: A conceptual framework for university-industry engagement and knowledge sharing. *Journal of Technology Transfer*. https://doi.org/10.1007/s10961-025-10233-7

Assounga, J.B.B.P., & Sibassaha, J.L.B. (2024). Impact of technological change, employee competency, and law compliance on digital human resource practices: Evidence from congo telecom. *Sustainable Futures, 7*, 100195. https://doi.org/10.1016/j.sftr.2024.100195

Braßler, M., & Sprenger, S. (2021). Fostering sustainability knowledge, attitudes, and behaviours through a tutor-supported interdisciplinary course in education for sustainable development. *Sustainability (Switzerland), 13*(6), 3494. https://doi.org/10.3390/su13063494

Chen, Y., Maidin, S.S., Tsegyu, S., Tiamiyu, K.A., Ogbonne, I.P., Yare, D.M., Ogiri, H.K., & Gever, V.C. (2023). Developing and evaluating the impact of a small group communication programme in improving the entrepreneurial competence and economic self-efficacy of smallholder farmers with art skills. *PLoS One, 18*, 1–14. https://doi.org/10.1371/journal.pone.0292640

Climent, R.C., Haftor, D.M., & Staniewski, M.W. (2024). AI-enabled business models for competitive advantage. *Journal of Innovation and Knowledge, 9*(3), 100532. https://doi.org/10.1016/j.jik.2024.100532

Coetzee, M., Veldsman, D., Potgieter, I.L., & Ferreira, N. (2025). Future-proof human resource competencies as synergetic boosters of workplace stewardship capability. *SA Journal of Human Resource Management, 23*, 9. https://doi.org/10.4102/sajhrm.v23i0.2862

Ganesan, A., Velanganni, R., Rajapriya, M., Murugan, P.S.B., & Paranthaman, P. (2025). The role of artificial intelligence in personalized marketing: Integrating AI with information systems for competitive advantage. *Indian Journal of Information Sources and Services, 15*(1), 220–229. https://doi.org/10.51983/ijiss-2025.IJISS.15.1.28

Gazi, M.A.I., Rahman, M.K.H., & Masud, A.A. (2024). AI-capability and sustainable performance mediating effects of organizational creativity and green innovation. *Sustainability, 16*(17), 1–19. https://doi.org/10.3390/su16177466

Gebreyohans, G., Croasdell, D.T., & Meshesha, M. (2022). A systematic literature review on digital knowledge sharing in higher education. In *Proceedings of the Annual Hawaii International Conference on System Sciences*, *(HICSS)*, 3–7 January 2002 (pp. 5483–5492).

Hair, J., Risher, J.J., Sarstedt, M., & Ringle., C.M. (2019). *A primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd ed.). Sage.

Herath, H.M.K.K.M.B., & Mittal, M. (2022). Adoption of artificial intelligence in smart cities: A comprehensive review. *International Journal of Information Management Data Insights, 2*(1), 100076. https://doi.org/10.1016/j.jjimei.2022.100076

Huang, X., Li, H., Huang, L., & Jiang, T. (2023). Research on the development and innovation of online education based on digital knowledge sharing community. *BMC Psychology, 11*(1), 1–13. https://doi.org/10.1186/s40359-023-01337-6

Ilieva, G., Yankova, T., Ruseva, M., & Kabaivanov, S. (2025). A framework for generative AI-driven assessment in higher education. *Information, 16*(6), 472. https://doi.org/10.3390/info16060472

Joseph, R.M., Thomas, A., & Abbott, P. (2021). Information technology competencies for entry-level human resource strategic partners. *SA Journal of Human Resource Management, 19*, a1327. https://doi.org/10.4102/sajhrm.v19i0.1327

Kemp, A. (2023). Competitive advantages through artificial intelligence : Toward a theory of situated AI. *Academy of Management Review, 49*(3), 1–42.

Kenedi, J., Wibisono, C., Astriani, F., Noviyanti, N., & Syukur, I.B. (2024). Capabilities, knowledge and skills of superior human resources through the competency of Tanjung Balai Karimun Port Employees, Riau Islands, Indonesia. *Environment and Social Psychology, 9*(5), 1–14. https://doi.org/10.54517/esp.v9i5.1749

Khan, A.N., Soomro, M.A., & Pitafi, A.H. (2024). AI in the workplace: Driving employee performance through enhanced knowledge sharing and work engagement. *International Journal of Human-Computer Interaction,* 1–14. https://doi.org/10.1080/10447318.2024.2436611

Lindawati, T., & Wulani, F. (2021). The commitment of the employee to the supervisor and the organization: The role of employee competency and downward influence tactics. *Asian Journal of Business Research, 11*(1), 1–19. https://doi.org/10.14707/ajbr.210096

Lubis, A.S., Lumbanraja, P., Absah, Y., & Silalahi, A.S. (2022). Human resource competency 4.0 and its impact on Bank Indonesia employees' readiness for transformational change. *Journal of Organizational Change Management, 35*(4–5), 749–779. https://doi.org/10.1108/JOCM-02-2021-0045

Ma, C.M.S., Shek, D.T.L., Fan, I.Y.H., Zhu, X., & Hu, X. (2025). The impact of digital safety competence on cognitive competence, AI self-efficacy, and character. *Applied Sciences (Switzerland), 15*(10), 5440. https://doi.org/10.3390/app15105440

Menzies, J., Sabert, B., Hassan, R., & Mensah, P.K. (2024). Artificial intelligence for international business: Its use, challenges, and suggestions for future research and practice. *Thunderbird International Business Review, 66*(2), 185–200. https://doi.org/10.1002/tie.22370

Nayebpour, H., & Sehhat, S. (2024). Designing the competency model of human resource managers based on paradox theory (case study: Information and communication technology industry). *International Journal of Organizational Analysis, 32*(7), 1181–1203. https://doi.org/10.1108/IJOA-02-2023-3645

Ncube, T.R., Sishi, K.K., & Skinner, J.P. (2025). The impact of artificial intelligence on human resource management practices: An investigation. *SA Journal of Human Resource Management Journal of Human Resource Management ISSN, 23*, a2960. https://doi.org/10.4102/sajhrm.v23i0.2960

Ojong, N. (2025). Interrogating the economic, environmental, and social impact of artificial intelligence and big data in sustainable entrepreneurship. *Business Strategy and the Environment, 34*(7), 8305–8320. https://doi.org/10.1002/bse.70031

Olan, F., Nyuur, R.B., & Arakpogun, E.O. (2024). AI: A knowledge sharing tool for improving employees' performance. *Journal of Decision Systems, 33*(4), 700–720. https://doi.org/10.1080/12460125.2023.2263687

Oskouei, M.M., Anarak, L.N., Panahi, S., & Asadzandi, S. (2024). Factors influencing knowledge sharing between scientific specialists in knowledge networks and communities of practice: A systematic literature review. *Journal of Education and Health Promotion, 13*(136), 1–13. https://doi.org/10.4103/jehp.jehp_280_23

Pan, Y., Froese, F., Liu, N., Hu, Y., & Ye, M. (2022). The adoption of artificial intelligence in employee recruitment: The influence of contextual factors. *International Journal of Human Resource Management, 33*(6), 1125–1147. https://doi.org/10.1080/09585192.2021.1879206

Penglong, G., Xue, Z., Diva, M.F., & Yangyang, Z. (2024). Impact of artificial intelligence usage and technology competence on competitive advantage with mediating role of effective information management system. *Profesional de La Informacion, 33*(5), 1–11. https://doi.org/10.3145/epi.2024.ene.0501

Puerta, C.D.B., Bermúdez-González, G., & Soler García, I.P. (2022). Human systematic innovation helix: Knowledge management, emotional intelligence and entrepreneurial competency. *Sustainability (Switzerland), 14*(7), 1–21. https://doi.org/10.3390/su14074296

Rienda-Gómez, J.J., Villena-Martínez, E.I., Sutil-Martín, D.L., & García-Muiña, F.E. (2025). A mediation model for enhancing socioemotional and cognitive skills and facilitating knowledge management through serious board games: Advancing intrinsic motivation. *Journal of Knowledge Management, 29*(11), 83–116. https://doi.org/10.1108/JKM-01-2025-0038

Sarkadi, S., Tettamanzi, A.G.B., & Gandon, F. (2022). Interoperable AI: Evolutionary race toward sustainable knowledge sharing. *IEEE Internet Computing, 26*(6), 25–32. https://doi.org/10.1109/MIC.2022.3214378

Sasmita, E.E., Utami, H.N., & Ruhana, I. (2023). The mediating effect of job satisfaction and knowledge sharing behaviour on job performance. *SA Journal of Human Resource Management, 21*, 1–7. https://doi.org/10.4102/sajhrm.v21i0.2128

Shadiev, R., Yu, J., & Sintawati, W. (2021). Exploring the impact of learning activities supported by 360-degree video technology on language learning, intercultural communicative competence development, and knowledge sharing. *Frontiers in Psychology, 12*, 1–18. https://doi.org/10.3389/fpsyg.2021.766924

Shen, Y., Deng, Y., Xiao, Z., Zhang, Z., & Dai, R. (2025). Driving green digital innovation in higher education: The influence of leadership and dynamic capabilities on cultivating a green digital mindset and knowledge sharing for sustainable practices. *BMC Psychology, 13*(1), 288. https://doi.org/10.1186/s40359-025-02552-z

Siahaan, D.T., & Tan, C.S.L. (2022). What drives the adaptive capability of Indonesian SMEs during the COVID-19 pandemic: The interplay between perceived institutional environment, entrepreneurial orientation, and digital capability. *Asian Journal of Business Research, 12*(2), 8–27. https://doi.org/10.14707/ajbr.220125

Singh, S.K., Chen, J., Del Giudice, M., & El-Kassar, A.N. (2019). Environmental ethics, environmental performance, and competitive advantage: Role of environmental training. *Technological Forecasting and Social Change, 146*, 203–211. https://doi.org/10.1016/j.techfore.2019.05.032

Smirnov, S., Dmitrichenkova, S., Dolzhich, E., & Murzagalina, G. (2023). Entrepreneurial competence development program: Implementing efficiency through knowledge sharing. *Administrative Sciences, 13*(6), 147. https://doi.org/10.3390/admsci13060147

Soleimani, M., Intezari, A., & Pauleen, D.J. (2022). Mitigating cognitive biases in developing AI-assisted recruitment systems: A knowledge-sharing approach. *International Journal of Knowledge Management, 18*(1), 1–18. https://doi.org/10.4018/IJKM.290022

Spatscheck, N., Schaschek, M., & Winkelmann, A. (2024). The effects of generative AI's human-like competencies on clinical decision-making. *Journal of Decision Systems,* 1–39. https://doi.org/10.1080/12460125.2024.2430731

Stadler, C., Helfat, C.E., & Verona, G. (2022). Transferring knowledge by transferring individuals: Innovative technology use and organizational performance in multiunit firms. *Organization Science, 33*(1), 253–274. https://doi.org/10.1287/orsc.2021.1446

Sukoroto, Tjahjono, H.K., & Wahyuningsih, S.H. (2023). The role of knowledge management, managerial competence, market orientation, and innovation on sustainable competitive advantage. *Journal of Distribution Science, 21*(5), 63–73. https://doi.org/10.15722/jds.21.05.202305.63

Sun, U.Y., Xu, H., Kluemper, D.H., McLarty, B.D., & Yun, S. (2024). Ethical leadership and knowledge sharing: A social cognitive approach investigating the role of self-efficacy as a key mechanism. *Journal of Business Research, 174*, 114531. https://doi.org/10.1016/j.jbusres.2024.114531

Thomas, A. (2025). The dynamics of knowledge behaviors: Exploring drivers, triggers and paradoxes in knowledge sharing, hiding, hoarding and sabotage. *Journal of Knowledge Management, 29*(11), 117–144. https://doi.org/10.1108/JKM-03-2025-0399

Tong, T., Iqbal, K., & Rahman, A.A. (2022). Core technological competence and competitive advantage: A study on Chinese high-tech SMEs. *Frontiers in Psychology, 13*, 1–12. https://doi.org/10.3389/fpsyg.2022.959448

Wang, B., Rau, P.L.P., & Yuan, T. (2023). Measuring user competence in using artificial intelligence: Validity and reliability of artificial intelligence literacy scale. *Behaviour and Information Technology, 42*(9), 1324–1337. https://doi.org/10.1080/0144929X.2022.2072768

Wening, N., Moertono, B., & Muafi. (2023). The mediating role of creativity on the effect of knowledge sharing on sustainable competitive advantage. *ABAC Journal, 43*(2), 42–61. https://doi.org/10.14456/abacj.2023.14

Wetering, R. Van de, Bons, R.W.H., & Bagheri, S. (2023). Architecting agility: Unraveling the impact of AI capability on organizational change and competitive advantage. *Lecture Notes in Business Information Processing, 483*, 203–213. https://doi.org/10.1007/978-3-031-36757-1_12

Xu, Y., & Liu, M. (2023). Relations among and predictive effects of anxiety, enjoyment and self-efficacy on Chinese interpreting majors' self-rated interpreting competence. *Education Sciences, 13*(5), 436. https://doi.org/10.3390/educsci13050436

Yang, B., & Shen, Z. (2025). Knowledge graph construction and talent competency prediction for human resource management. *Alexandria Engineering Journal, 121*, 223–235. https://doi.org/10.1016/j.aej.2025.02.043

Yang, Z., Yin, Y., Kong, C., Chi, T., Tao, W., Zhang, Y., & Xu, T. (2025). ShennongAlpha: An AI-driven sharing and collaboration platform for intelligent curation, acquisition, and translation of natural medicinal material knowledge. *Cell Discovery, 11*(1), 32. https://doi.org/10.1038/s41421-025-00776-2

Yoo, J.W., Park, J., & Park, H. (2024). The impact of AI-enabled CRM systems on organizational competitive advantage: A mixed-method approach using BERTopic and PLS-SEM. *Heliyon, 10*(16), e36392. https://doi.org/10.1016/j.heliyon.2024.e36392

Zhang, X.Y., Zhu, X.G., Tu, J.C., & Yi, M. (2022). Measurements of intercultural teamwork competence and its impact on design students' competitive advantages. *Sustainability (Switzerland), 14*(1), 1–21. https://doi.org/10.3390/su14010175

Zhang, Y. (2022). Fostering enterprise performance through employee brand engagement and knowledge sharing culture: Mediating role of innovative capability. *Frontiers in Psychology, 13*, 1–14. https://doi.org/10.3389/fpsyg.2022.921237