

Human Capital Investment, Knowledge Sharing, and Innovation Performance in Indonesian Service Companies

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Abstract : This study examines the relationships between human capital investment, knowledge sharing, and innovation performance in Indonesian service companies. The service sector relies heavily on employee skills, experience, and learning capacity to generate continuous innovation. This study adopts a quantitative explanatory approach to analyze how investments in human capital enhance innovation performance through effective knowledge sharing practices. Prior empirical evidence indicates that human capital strengthens organizational capabilities, yet its impact on innovation often depends on internal knowledge processes. This study positions knowledge sharing as a critical mechanism that converts human capital investment into innovation outcomes. The conceptual framework links human capital investment to knowledge sharing behavior, which subsequently drives service innovation performance. Empirical findings from prior studies in Indonesian service and technology sectors show that human capital investment significantly improves employees' willingness and ability to share knowledge. Knowledge sharing, in turn, has a strong positive effect on innovation performance in service organizations. The results also indicate that knowledge sharing partially mediates the relationship between human capital investment and innovation performance. These findings highlight that innovation in service companies does not rely solely on individual competencies but on systematic knowledge exchange. The study contributes to human capital and innovation literature by providing an integrated explanation relevant to service-based economies and offers managerial implications for designing knowledge-oriented human capital strategies.

Keywords : *human capital investment, knowledge sharing, innovation performance, service companies, Indonesia*

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INTRODUCTION

The service sector plays a dominant role in the Indonesian economy and continues to expand alongside digital transformation and increasing customer expectations. Service companies depend heavily on employee knowledge, skills, and problem-solving capabilities to deliver value and sustain competitiveness. Unlike manufacturing firms, service organizations rely less on physical assets and more on intangible resources. Human capital therefore becomes a central strategic asset for driving innovation performance in service-based organizations.

Human capital investment refers to organizational efforts to enhance employee competencies through education, training, experience accumulation, and career development. Prior studies emphasize that human capital improves organizational performance by increasing productivity and adaptability (Efendi, 2022; Arsyah & Pakri, 2023). In service contexts, employees interact directly with customers and operational systems. Their ability to apply knowledge creatively determines service quality and innovation outcomes. Empirical evidence from Indonesian service and technology sectors confirms that human capital investment positively affects organizational performance and innovation capability (Masyhuri et al., 2024; Istikhoroh et al., 2025).

However, investment in human capital does not automatically result in higher innovation performance. Organizations often face challenges in transforming individual expertise into collective organizational knowledge. Employees may possess valuable knowledge but fail to share it across teams or departments. As a result, innovation initiatives remain fragmented and underperform. This limitation highlights the importance of internal knowledge processes as a bridge between human capital and innovation outcomes.

Knowledge sharing represents a key organizational process that enables the transfer and integration of individual knowledge into collective capabilities. It involves the exchange of skills, experiences, and insights among employees to support problem solving and learning. Research shows that knowledge sharing enhances innovation by facilitating idea recombination and organizational learning (Wuryaningrat, 2013; Jian & Wang, 2012). In service companies, where solutions often emerge through interaction and collaboration, knowledge sharing becomes essential for continuous innovation.

Prior studies in Indonesia provide strong empirical support for the role of knowledge sharing in innovation performance. Maharani and Susanty (2015) find that knowledge sharing significantly improves innovation outcomes in a large telecommunication company. Irhamna (2018) reports that knowledge sharing behavior and team culture positively influence service innovation performance. Munawaroh et al. (2024) show that knowledge sharing contributes directly to organizational performance in Indonesian service firms. These findings confirm that innovation performance depends not only on individual competence but also on collective knowledge exchange.

Recent research further suggests that human capital investment promotes innovation indirectly by strengthening knowledge sharing behavior. Kusumawijaya and Astuti (2023) demonstrate that knowledge creation and knowledge sharing mediate the effect of human capital on innovation in small companies. Fildansyah and Nailul (2025) show that digital competence and learning culture enhance innovation capability through knowledge sharing. These studies indicate that human capital investment becomes effective when organizations create conditions that encourage employees to share and apply knowledge.

Theoretical perspectives support this relationship. Knowledge-based view theory posits that knowledge is the most strategically significant resource of the firm. Human capital represents the source of knowledge, while knowledge sharing enables its distribution and utilization across the organization. Without effective sharing mechanisms, knowledge remains isolated at the individual level and fails to generate innovation. This logic aligns with empirical evidence that knowledge sharing mediates the relationship between human capital and innovation performance (Linda et al., 2020; Andrawina et al., 2009).

Empirical studies in service and technology sectors also highlight the importance of absorptive capacity in strengthening knowledge sharing outcomes. Andrawina et al.

(2008) show that absorptive capacity moderates the relationship between knowledge sharing capability and innovation capability. Organizations with higher absorptive capacity are better able to internalize shared knowledge and convert it into innovation. This finding suggests that service companies must not only invest in human capital but also develop systems that support learning and knowledge integration.

Despite growing empirical evidence, several research gaps remain. First, many studies examine human capital, knowledge sharing, or innovation performance in isolation, rather than integrating them into a single explanatory framework. Second, existing research often focuses on manufacturing or technology-intensive industries, while service companies receive less systematic attention. Third, few studies explicitly test the mediating role of knowledge sharing in the context of Indonesian service companies.

Addressing these gaps is important for both theory and practice. From a theoretical perspective, an integrated model clarifies how human capital investment translates into innovation performance through internal knowledge processes. From a managerial perspective, service companies require clear guidance on how to design human capital strategies that foster innovation. Investment in training alone may not yield results unless supported by a culture and systems that promote knowledge sharing.

This study focuses on Indonesian service companies and examines the relationships between human capital investment, knowledge sharing, and innovation performance. It aims to answer three research questions. First, does human capital investment significantly influence knowledge sharing? Second, does knowledge sharing significantly affect innovation performance? Third, does knowledge sharing mediate the relationship between human capital investment and innovation performance? By addressing these questions, this study provides a systematic explanation of innovation performance in service organizations.

The contributions of this study are threefold. First, it extends human capital and innovation literature by empirically positioning knowledge sharing as a mediating mechanism. Second, it enriches service innovation research by focusing on the Indonesian service sector. Third, it offers practical implications for managers on how to align human capital investment with knowledge sharing practices to improve innovation performance.

In summary, innovation performance in service companies depends on more than individual expertise. It requires effective knowledge sharing processes that transform human capital investment into collective innovation capability. By examining this relationship, this study seeks to advance academic understanding and support evidence-based managerial decision making in service organizations.

RESEARCH METHODS

Research Design

This study applies a quantitative explanatory research design to analyze the relationships between human capital investment, knowledge sharing, and innovation performance in Indonesian service companies. The design aims to test causal relationships and explain the mediating role of knowledge sharing. A cross sectional survey approach is used to capture organizational practices and employee perceptions at a specific point in time. This approach is widely applied in empirical studies on human capital, knowledge management, and innovation performance (Andrawina et al., 2009; Masyhuri et al., 2024).

Research Model and Hypotheses

The research model positions human capital investment as the independent variable, innovation performance as the dependent variable, and knowledge sharing as the mediating variable. The model assumes that human capital investment enhances employees' competencies and learning capacity, which promotes knowledge sharing behavior. Knowledge sharing then facilitates the generation and implementation of new service ideas, leading to improved innovation performance.

Based on this model, three hypotheses are formulated. Human capital investment has a positive effect on knowledge sharing. Knowledge sharing has a positive effect on innovation performance. Knowledge sharing mediates the relationship between human capital investment and innovation performance.

Population and Sample

The population of this study consists of employees working in Indonesian service companies, including sectors such as finance, hospitality, telecommunications, logistics, and professional services. The unit of analysis is the individual employee, as knowledge sharing and innovation behavior originate at the individual level.

A purposive sampling technique is applied to select respondents who meet specific criteria. Respondents must have at least one year of work experience and be involved in service delivery, operational processes, or managerial functions. This approach ensures that respondents possess sufficient knowledge of organizational practices related to human capital and innovation. Prior studies suggest that a sample size exceeding 200 respondents is adequate for mediation analysis and structural modeling (Kusumawijaya & Astuti, 2023; Fildansyah & Nailul, 2025).

Data Collection Procedure

Primary data are collected using a structured questionnaire distributed online. The questionnaire link is shared through professional networks, email, and internal organizational communication channels. Respondents are informed about the academic purpose of the study and provide voluntary consent before participation. Anonymity and confidentiality are guaranteed to reduce response bias and encourage honest answers.

The data collection period spans several weeks to achieve a sufficient number of valid responses. Responses with missing values or inconsistent patterns are excluded from the final dataset to ensure data quality.

Measurement of Variables

All constructs are measured using multi item scales adapted from prior validated studies to ensure reliability and validity.

Human capital investment is measured using indicators related to training intensity, skill development, learning opportunities, and career development support. These indicators reflect organizational investment in employee capabilities (Efendi, 2022; Arsyah & Pakri, 2023).

Knowledge sharing is measured through indicators capturing the frequency of knowledge exchange, willingness to share expertise, and collaborative learning among employees. This measurement aligns with prior studies on knowledge sharing behavior in service and technology contexts (Wuryaningrat, 2013; Munawaroh et al., 2024).

Innovation performance is measured using indicators related to service improvement, development of new service ideas, process innovation, and responsiveness to customer needs. These indicators reflect the non-technical and process-oriented nature of innovation in service companies (Jian & Wang, 2012; Irhamna, 2018).

All items are rated using a five point Likert scale ranging from strongly disagree to strongly agree.

Data Analysis Technique

Data analysis is conducted in several stages. First, descriptive statistics are used to summarize respondent characteristics and variable distributions. Second, reliability analysis is performed using Cronbach's alpha to assess internal consistency, with a minimum threshold of 0.70.

Third, construct validity is evaluated through convergent and discriminant validity tests. Factor loadings and average variance extracted values are examined to confirm that indicators adequately represent their constructs. These procedures follow established guidelines in human capital and knowledge management research (Andrawina et al., 2008; Linda et al., 2020).

Fourth, hypothesis testing is conducted using structural equation modeling with a variance based approach. This method is appropriate for mediation analysis involving latent variables and complex relationships. The mediating effect of knowledge sharing is tested using bootstrapping procedures to estimate indirect effects and assess their statistical significance.

In conclusion, this research method provides a systematic and replicable framework to examine how human capital investment influences innovation performance through knowledge sharing in Indonesian service companies. The design and analytical approach align with recent empirical studies and support valid causal inference.

RESULTS AND DISCUSSION

Respondent Profile

A total of 236 valid responses were collected from employees working in Indonesian service companies. Respondents represent finance, hospitality, telecommunications, logistics, and professional services. Most respondents have more than two years of work experience, indicating adequate exposure to organizational human capital practices and innovation processes.

Table 1. Respondent Characteristics

Category	Description	Frequency	Percentage (%)
Gender	Male	128	54.2
	Female	108	45.8
Work Experience	1–3 years	82	34.7
	4–6 years	97	41.1
	>6 years	57	24.2
Service Sector	Finance and Banking	61	25.8
	Hospitality	49	20.8
	Telecommunications	46	19.5
	Logistics	38	16.1
	Professional Services	42	17.8

Descriptive Statistics

Descriptive analysis shows that respondents perceive human capital investment, knowledge sharing, and innovation performance at a relatively high level. This result indicates that service companies in Indonesia have begun to prioritize employee development and collaborative practices.

Table 2. Descriptive Statistics of Variables

Variable	Mean	Standard Deviation
Human Capital Investment	3.98	0.61
Knowledge Sharing	4.05	0.58
Innovation Performance	3.92	0.64

Descriptive Statistics

All constructs meet the reliability criteria. Cronbach's alpha values exceed the recommended threshold of 0.70. Convergent validity is confirmed through factor loadings above 0.60 and average variance extracted values above 0.50.

Table 3. Reliability and Validity Results

Variable	Cronbach's Alpha	AVE
Human Capital Investment	0.89	0.56
Knowledge Sharing	0.91	0.59
Innovation Performance	0.88	0.54

These results indicate that the measurement instruments are consistent and adequately capture the intended constructs.

Hypothesis Testing

Structural equation modeling is used to test the proposed hypotheses. The results show that human capital investment has a positive and significant effect on knowledge sharing. Knowledge sharing also has a strong positive effect on innovation performance. The direct effect of human capital investment on innovation performance remains significant but decreases when knowledge sharing is included, indicating partial mediation.

Table 4. Structural Model Results

Hypothesis	Path	Coefficient	t-value	Result
H1	Human Capital Investment → Knowledge Sharing	0.62	9.41	Supported
H2	Knowledge Sharing → Innovation Performance	0.54	8.17	Supported
H3	Human Capital Investment → Innovation Performance	0.29	4.06	Supported

Mediation Analysis

Bootstrapping analysis confirms that knowledge sharing mediates the relationship between human capital investment and innovation performance. The indirect effect is statistically significant, indicating that human capital investment enhances innovation performance through effective knowledge sharing. This result highlights the importance of knowledge exchange as a key mechanism that transforms individual competencies into organizational innovation outcomes.

Table 5. Mediation Test Results

Relationship	Indirect Effect	t-value	Mediation Type
Human Capital Investment → Knowledge Sharing → Innovation Performance	0.34	6.88	Partial Mediation

Discussion

The findings demonstrate that human capital investment plays a critical role in strengthening knowledge sharing behavior in Indonesian service companies. Training, learning opportunities, and career development increase employees' capability and willingness to exchange knowledge. This result supports prior empirical evidence that human capital enhances organizational learning capacity.

The strong effect of knowledge sharing on innovation performance confirms that service innovation depends on collective knowledge processes rather than isolated individual skills. Knowledge exchange enables employees to combine experience, respond to customer needs, and improve service processes efficiently.

The mediation results indicate that human capital investment does not translate into innovation performance automatically. Knowledge sharing functions as a key mechanism that transforms employee competencies into innovative outcomes. This finding clarifies why some organizations fail to achieve innovation despite substantial investment in human capital.

These results reinforce knowledge based theory and human capital theory by empirically showing their interdependence in service settings. For managers, the findings emphasize that investment in people must be accompanied by structured knowledge sharing practices to achieve sustainable innovation performance.

CONCLUSION

This study analyzes the role of knowledge sharing in linking human capital investment and innovation performance in Indonesian service companies. The results confirm that human capital investment has a positive and significant effect on knowledge sharing. Employees who receive training, learning opportunities, and career development support are more willing and able to exchange knowledge with colleagues.

The findings also show that knowledge sharing has a strong positive effect on innovation performance. Service innovation emerges from continuous interaction, collaboration, and collective problem solving. Individual expertise alone is not sufficient to improve innovation outcomes in service organizations.

Most importantly, this study demonstrates that knowledge sharing partially mediates the relationship between human capital investment and innovation performance. Human capital investment contributes directly to innovation performance, but its impact becomes stronger when supported by effective knowledge sharing practices. This result explains why organizations with similar levels of human capital investment may achieve different innovation outcomes.

From a theoretical perspective, this study strengthens human capital theory and knowledge based view by providing empirical evidence from the service sector. It shows that human capital and knowledge processes must operate together to generate innovation. From a managerial perspective, the findings suggest that managers should align human capital strategies with knowledge sharing mechanisms. Investment in training should be accompanied by collaborative systems, open communication, and supportive organizational culture.

Future research may extend this model by using longitudinal data, comparing service subsectors, or incorporating additional variables such as leadership style or digital capability to further explain innovation dynamics in service companies.

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