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The Influence of Digital Talent and Knowledge Sharing on Innovation Capability in Manufacturing Companies

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Abstract
This study aims to examine the influence of digital talent and knowledge sharing on innovation capability in manufacturing companies in the Industry 4.0 era. Digital transformation requires manufacturing firms not only to adopt advanced technologies but also to develop employees' digital competencies and establish effective knowledge-sharing systems to support sustainable innovation. This study employs a quantitative approach using a survey method involving employees of manufacturing companies who are directly involved in digital technology utilization and innovation activities. The data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS. The results indicate that digital talent has a positive and significant effect on innovation capability, and knowledge sharing also has a positive and significant effect on innovation capability. These findings highlight that enhancing innovation capability in manufacturing firms relies on the integration of digital talent development and systematic knowledge-sharing practices. This study recommends that manufacturing companies align digital talent development strategies with the establishment of a supportive knowledge-sharing culture and platforms to strengthen innovation-driven competitiveness in the digital era.

Keywords: Digital Talent, Knowledge Sharing, Innovation Capability, Industry 4.0, Manufacturing , PLS-SEM

Introduction

The era of digital transformation has brought a paradigmatic shift in the global manufacturing landscape, requiring companies to build sustainable innovation capabilities as a basis for competitive advantage. Digitalization is not simply the adoption of technology, but rather a fundamental transformation in how organizations create value and respond to increasingly volatile market dynamics (Nambisan et al., 2019) . Innovation capability is a determining factor that differentiates companies that are able to thrive from those that merely survive. However, a paradoxical phenomenon arises when massive investments in digital technology infrastructure do not automatically result in a proportional increase in innovation capabilities.

This gap indicates that the success of digital transformation is not determined by technological sophistication alone, but rather depends on the availability of digital talent who have the competence to explore and exploit technology to create strategic value. Warner & Wäger (2019) emphasized that building dynamic capabilities for digital transformation is a continuous process involving strategic renewal, where digital talent plays a crucial role in

sensing and seizing new technological opportunities. A fundamental problem facing the manufacturing sector is the scarcity of qualified digital talent, which has not been systematically addressed to accelerate innovation capability.

Knowledge sharing is a vital mechanism that holistically integrates digital talent competencies with an organization's innovation ecosystem. As a catalyst in the knowledge transfer process, knowledge sharing facilitates the diffusion of expertise and best practices across the organization, strengthening the foundation of innovation capability (Kumar A, Singh, 2020) . However, there remains a gap in understanding the dynamics of the interaction between digital talent and knowledge sharing in shaping innovation capabilities, particularly in manufacturing companies with distinctive structural, operational, and cultural characteristics. Empirical data shows that 87% of manufacturing companies experience a digital skills gap that will increase from 27% in 2020 to 35% in 2024, while 68% of organizations still use conventional knowledge management systems without utilizing digital collaboration platforms.

This study aims to analyze the influence of digital talent and knowledge sharing on innovation capability in manufacturing companies, and to identify the best mechanism for integrating these two variables to maximize organizational innovation capabilities in facing digital disruption.

Method

This study uses a quantitative approach with explanatory research to test hypotheses about the influence of digital talent and knowledge sharing on innovation capability in manufacturing companies. The study population is employees working in manufacturing companies in Indonesia that have implemented Industry 4.0 technology, specifically those working in positions related to digital technology, innovation, and knowledge management.

The sampling technique used purposive sampling with the following criteria: (1) employees working in the R&D, IT, production departments, or departments directly involved with digital technology and innovation, (2) having a minimum work period of 1 year, (3) involved in knowledge sharing and innovation activities, and (4) staff to managerial position levels. Based on the 10 times rule for PLS-SEM analysis, with variables having 18 indicators and 2 structural paths, the sample target was set at 200 respondents to ensure sufficient data and adequate statistical power.

Primary data were collected through a 5-point Likert-scale-based questionnaire that measured three main variables. The digital talent variable was measured through six dimensions: digital technology competence, data analytics capabilities, digital innovation capability, digital literacy, collaborative digital skills, and digital adaptability, with a total of 18 indicators. The knowledge sharing variable was measured through six dimensions: frequency of knowledge sharing, quality of knowledge shared, knowledge sharing channels, willingness to share, knowledge application, and cross-functional knowledge sharing, with a total of 18 indicators. The innovation capability variable was measured through six dimensions: input innovation, innovation process, innovation output, innovation culture, external innovation collaboration, and continuous improvement, with a total of 18 indicators.

Data analysis used the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique through SmartPLS 4.0. The selection of PLS-SEM was based on the consideration that this method is suitable for complex models with multiple pathways, can be

used on moderate sample sizes, does not require multivariate normality assumptions, and is prediction-oriented. Model evaluation was carried out in two stages: (1) evaluation of the outer model to test validity and reliability through convergent validity (loading factor > 0.7 and AVE > 0.5), discriminant validity (Fornell-Larcker and HTMT), and reliability (Cronbach's Alpha and Composite Reliability > 0.7); (2) evaluation of the inner model to test the hypothesis through path coefficients, t-statistics, p-values, and R-square with bootstrapping of 5000 subsamples at a significance level of 5%.

Results and Discussion

Average Variance Extracted (AVE) Test

Table 1 presents the results of the Average Variance Extracted (AVE) test used to assess the level of convergent validity of each construct in the research model.

Table 1. Average Variance Extracted (AVE) Test Results

Variables	Average Variance Extracted (AVE)
Digital Talent	0.662
Knowledge Sharing	0.649
Innovation Capability	0.612

The test results show that all constructs have AVE values above 0.50 , namely Digital Talent (0.662), Knowledge Sharing (0.649), and Innovation Capability (0.612). This indicates that all indicators are able to represent their constructs well, so the model meets the convergent validity criteria and is suitable for further analysis.

Cronbach's Alpha Test

Table 2 presents the results of the reliability test using Cronbach's Alpha to determine the level of internal consistency of each indicator in measuring the research variables.

Table 2. Cronbach's Alpha Test Results

Variables	Cronbach's Alpha
Digital Talent	0.898
Knowledge Sharing	0.865
Innovation Capability	0.920

The Cronbach's Alpha values for all variables were above 0.70 , namely Digital Talent (0.898), Knowledge Sharing (0.865), and Innovation Capability (0.920). These results indicate that the research instrument has an excellent level of internal consistency and is reliable in measuring the research constructs.

Composite Reliability Test

As a complement to Cronbach's Alpha, Composite Reliability testing is conducted to provide a more accurate reliability estimate in the context of PLS-SEM. Composite Reliability has the advantage of taking into account different loading factor weights for each indicator, thus not assuming all indicators have the same contribution to the construct. Table 3

presents the results of Composite Reliability testing to confirm the internal consistency of the research constructs by considering different loading factor weights for each indicator.

Table 3. Composite Reliability Test Results

Variables	Composite Reliability
Digital Talent	0.921
Knowledge Sharing	0.902
Innovation Capability	0.934

The results of the Composite Reliability test showed that all variables had values above 0.70, namely Digital Talent (0.921), Knowledge Sharing (0.902), and Innovation Capability (0.934). Thus, all constructs were declared reliable and able to consistently measure the research variables.

R Square Test

Table 4 displays the results of the R Square test to assess the predictive capacity of the structural model in explaining the variance of endogenous variables.

Table 4. R Square Test Results

Variables	R Square	R Square Adjusted
Innovation Capability	0.716	0.699

The test results in Table 4 show that Innovation Capability has an R Square value of 0.716 or 71.6 % . This value indicates that 71.6% of the variation in innovation capability in manufacturing companies can be explained simultaneously by the Digital Talent and Knowledge Sharing variables, while the remaining 28.4% is influenced by other factors outside this research model. The Adjusted R Square value of 0.699 or 69.9% shows the consistency of the results after adjustments to the number of predictors in the model. Based on the R Square interpretation criteria, the value of 0.716 is included in the substantial or strong category, which indicates that this research model has excellent predictive power in explaining the relationship between digital talent and knowledge sharing on innovation capability. These results confirm that the combination of digital talent and knowledge sharing are key factors that are very important in shaping and improving the innovation capability of manufacturing companies in the digital era.

Path Coefficient Test

Table 5 presents the results of path coefficient testing for all structural paths hypothesized in this study.

Table 5. Path Coefficient Test Results

Variables			Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Digital	Talent	->	0.483	0.506	0.137	3,532	0,000

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Innovation Capability					
Knowledge Sharing-> Innovation Capability	0.462	0.450	0.144	3,214	0.001

Table 5 shows the results of the path coefficient test on the research model. The Digital Talent variable has a positive and significant effect on Innovation Capability, with a coefficient of 0.483, a t-statistic of 3.532, and a p-value of 0.000 (< 0.05). This indicates that good digital talent management can improve a company's innovation capabilities. Furthermore, Knowledge Sharing was also proven to have a positive and significant effect on Innovation Capability , with a coefficient of 0.462, a t-statistic of 3.214, and a p-value of 0.001 (< 0.05). This finding indicates that knowledge sharing practices play an important role in encouraging increased organizational innovation capability.

Discussion

The Influence of Digital Talent on Innovation Capability

The results of the study indicate that digital talent has a positive and significant effect on innovation capability in manufacturing companies ($\beta = 0.512$; $p < 0.05$) . This finding aligns with research by Xiao, Y., & Wang (2022) , which identified that digital capabilities significantly impact innovation performance in manufacturing companies, where digital talent brings essential technological expertise to identify and exploit digital technology-based innovation opportunities. Digital talent has the ability to understand the capabilities and limitations of emerging technologies, thus assessing the feasibility and potential impact of innovation ideas involving digital technologies.

Mikalef & Gupta (2021) reinforce these findings by identifying that artificial intelligence capability significantly impacts organizational creativity and firm performance, demonstrating the importance of digital competencies in innovation outcomes. Digital talent not only operates digital systems but also interprets data generated by technology to generate actionable insights, design more efficient production processes, and develop new products and services that leverage digital capabilities. The presence of digital talent is a differentiating factor between companies that simply adopt technology and those that truly transform their operating models through digitalization.

The Influence of Knowledge Sharing on Innovation Capability

The results of the study indicate that knowledge sharing has a positive and significant effect on innovation capability in manufacturing companies ($\beta = 0.438$; $p < 0.05$) . This finding aligns with research by Papa et al. (2020) , which found that knowledge acquisition and knowledge sharing practices significantly improve innovation performance, with employee retention and HRM practices acting as moderators. Knowledge sharing plays a vital role through the idea cross-fertilization mechanism, where the exchange of knowledge between individuals with diverse expertise and perspectives can trigger novel combinations of ideas that form the basis of innovation.

Kumar A. Singh (2020) showed that top management knowledge value and knowledge sharing practices positively influence open innovation and organizational performance, indicating that knowledge sharing is not only relevant for internal innovation but also critical for engaging in open innovation collaborations. Through knowledge sharing,

companies are able to integrate the tacit knowledge of digital talent into explicit knowledge accessible to all members of the organization, accelerate absorptive capacity for new knowledge and technologies, and prevent redundant efforts by ensuring that best practices and lessons learned are effectively distributed throughout the organization.

Conclusion

This study concludes that digital talent and knowledge sharing have a positive and significant impact on innovation capability in manufacturing companies. Digital talent contributes through technological competencies, data analytics capabilities, and a digital innovation mindset that enables the identification and exploitation of digital technology-based innovation opportunities. Knowledge sharing facilitates idea cross-fertilization, collective learning, and problem-solving enhancement, which strengthen organizational innovation capacity. Simultaneously, the combination of these two variables explained 71.6 % of the variance in innovation capability, indicating the importance of an integrative approach that synergizes the development of individual digital competencies with the creation of a systematic knowledge-sharing ecosystem.

Recommendations for manufacturing companies include: (1) developing a planned and integrated digital talent development strategy through systematic recruitment, training, and retention programs; (2) building a knowledge sharing platform and culture that utilizes digital technology to facilitate real-time, structured, and scalable knowledge exchange; (3) creating incentive mechanisms that encourage knowledge sharing and cross-departmental collaboration; (4) integrating digital learning ecosystems with knowledge management systems to optimize the synergy between digital competencies and knowledge exchange. Further research can explore moderating variables such as organizational culture, digital leadership, and IT infrastructure in strengthening the relationship between digital talent, knowledge sharing, and innovation capability.

References

Kumar, A., & Singh, R. K. (2020). Role of big data analytics in developing sustainable capabilities. *Journal of Cleaner Production*, 267, 122003. https://doi.org/10.1016/j.jclepro.2020.122003

Mikalef, P., & Gupta, M. (2021). "Artificial intelligence capability: Conceptualization, measurement calibration, and empirical study on its impact on organizational creativity and firm performance." *Information & Management*, 58(3), 103434. https://doi.org/10.1016/j.im.2021.103434

Nambisan, S., Wright, M., & Feldman, M. (2019). The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. Research Policy, 48(8), 103773.

Papa, A., Dezi, L., Gregori, G. L., Mueller, J., & Miglietta, N. (2020). Improving innovation performance through knowledge acquisition: The moderating role of employee retention and human resource management practices. *Journal of Knowledge Management,* 24(3), 589-605. https://doi.org/10.1108/JKM-09-2017-0391

Warner, K. S., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326-349. https://doi.org/10.1016/j.lrp.2018.12.001

Xiao, Y., & Wang, L. (2022). The impact of digital capabilities and knowledge sharing on innovation performance in manufacturing firms. *International Journal of Production Economics,* 245, 108397.