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Digital Talent and Innovation Culture as Predictors of Employee Retention in Manufacturing Companies

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Abstract
This research aims to analyze the influence of digital talent and innovation culture on employee retention in Indonesian manufacturing companies undergoing digital transformation in the post-pandemic context and Great Resignation phenomenon. Employing a quantitative approach with a causal cross-sectional design, data were collected via Likert-scale questionnaires from manufacturing employees involved in digital technology usage, and analyzed using PLS-SEM to test direct and indirect relationships among variables. Digital talent is operationalized through technical capabilities, technology adaptation skills, and involvement in digital transformation initiatives; innovation culture is measured by organizational support for creativity, measured risk-taking, openness to change, and collaboration with continuous learning; while employee retention is reflected through intention to stay, organizational commitment, and perceptions of career development opportunities. The research model examines the direct effects of digital talent on employee retention, digital talent on innovation culture, innovation culture on employee retention, and the mediating role of innovation culture in the digital talent-employee retention relationship. These findings enrich the strategic human resource management literature in the manufacturing sector and provide practical recommendations for companies in designing holistic and sustainable digital talent retention strategies in the Industry 4.0 era.

Keywords: Digital Talent, Innovation Culture, Employee Retention, Manufacturing, Industry 4.0

Introduction

The exponential changes in digital technology and the dynamics of Industry 4.0 transformation have required manufacturing companies to have human resources with digital talent who are not only technically competent but also adaptive to disruptions such as AI, IoT, big data analytics, and intelligent automation. Employee retention is a crucial determinant of organizational success in maintaining the continuity of digitalization, because digital talent turnover not only increases recruitment and training costs by up to 200% of annual salaries but also hinders knowledge transfer and organizational innovation momentum. Several contemporary studies show that digital talent contributes positively to retention through psychological empowerment mechanisms and increased employee engagement , where employees with high digital capabilities perceive stronger career added value (Ekhsan et al., 2023) .

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The contemporary manufacturing industry faces fundamental pressure to develop competent digital talent amidst the dynamic transformation of Industry 4.0. The demands of implementing digital technology require human resources who not only master technical expertise but also possess the capability to adapt to accelerating technological change. According to Bag et al. (2021) , the adoption of digital technology in manufacturing requires a workforce with a combination of technical expertise and cognitive flexibility for continuous technological innovation. The phenomenon of elevated turnover among digital manufacturing talent creates significant operational barriers, increases recruitment and training costs, and reduces the momentum of organizational digitalization implementation. Disparities in compensation and work environments between the traditional manufacturing sector and the technology and startup ecosystem create increasingly intense competition for talent acquisition.

Innovation culture is also a strategic issue in efforts to strengthen retention in the manufacturing environment. An imbalance between traditional hierarchical structures and employee aspirations for creativity can reduce organizational commitment and encourage talent migration to the technology sector. Research shows that an innovation culture that supports risk-taking and collaboration not only increases innovative behavior but also strengthens employee retention intentions (Ghani et al., 2023) . Understanding the relationship between digital talent , innovation culture , and employee retention in the manufacturing sector is expected to provide a foundation for companies in designing HR strategies oriented towards sustainability and long-term competitiveness.

Organizational innovation culture has emerged as a crucial variable in shaping employee retention decisions in the manufacturing context. Organizations with an institutionalized innovative culture create a work ecosystem that stimulates creative expression, measured experimentation, and continuous learning—values that resonate with the preferences of millennials and Gen Z, who dominate the contemporary workforce. Soto-Acosta et al. (2018) confirmed the crucial role of innovation culture in enhancing employee engagement and sustained organizational commitment. Conversely, many manufacturing organizations remain trapped in rigid hierarchical structures with a risk-averse orientation, creating a mismatch between digital talent's aspirations for creative exploration and the realities of conventional organizational cultures, driving talent migration to more progressive entities.

Indonesia's digital talent retention rate remains low compared to neighboring countries, with manufacturing employee engagement and loyalty scores far below the global average. Data shows that by February 2025, the US manufacturing industry experienced 184,000 worker losses, with a projected need for 3.8 million new workers by 2033. In Indonesia, competition for talent acquisition with the technology and startup sectors is further exacerbating this gap, with professionals with expertise in data analytics, automation, the Internet of Things, and artificial intelligence preferring environments that offer flexible work, advanced technological infrastructure, and a progressive organizational culture. Khalid and Nawab (2018) identified that employee participation in decision-making processes contributes substantially to organizational loyalty, although traditional hierarchical manufacturing structures still limit the scope for employees' innovative contributions.

Digital talent turnover is a crucial phenomenon experienced by global manufacturing companies. Survey data from 2025 shows that 60% of companies struggle to retain digital

talent due to the demands of high competency and technological adaptation, with innovation culture contributing 21% to retention. Innovative companies demonstrate superior resilience to turnover (Sarkar & Authors, 2022) . In Indonesia, shift and production manufacturing employees report frustration due to cultural resistance to innovative ideas, with turnover reaching 18% in organizations with low culture and intention to leave reaching 26% due to minimal flexibility and managerial support. Millennials and Gen Z prioritize work environments that facilitate creativity and adaptability, while many manufacturing companies are stuck in a risk-averse and change-resistant paradigm. Aldabbas et al. (2024) revealed that employee innovative behavior is largely determined by the level of employee engagement and organizational cultural support for innovation. When manufacturing companies invest in digital transformation but fail to realign their organizational culture to complement it, digital talent experiences frustration when their innovative initiatives are hampered by cultural resistance, triggering migration to organizations with superior innovation absorption capabilities. Soomro and Shah (2020) asserted that development training, work environment quality, and transformational leadership are key predictors of retention, with failure to create a conducive innovation ecosystem resulting in high turnover in a competitive job market.

Percentage distribution of factors influencing digital talent retention in the manufacturing industry. Data shows that 60% of companies face significant barriers to retaining digital talent, driven by escalating competency demands and the complexity of technology adaptation, which demands operational flexibility. Nadeem (2024) reinforces that digitalization is accelerating the restructuring of manufacturing jobs while widening the skills and expectations gap, triggering increased turnover. A culture of innovation contributes 21% to employee retention, indicating that companies that prioritize creativity, open-mindedness, and continuous learning demonstrate superior resilience to turnover. Sarkar and Shah (2022) quantified that organizations with a culture of innovation have a retention probability twice as high as entities with a conventional work culture.

The 18% turnover rate in organizations with a low innovation culture and 26% intention to leave reflect the volatility resulting from minimal work flexibility and managerial support. Afiani Indah (2022) confirmed that non-material factors such as psychological well-being, work flexibility, managerial support, and opportunities for innovative contributions are key drivers of retention decisions. Implementing a digital talent management system has been shown to increase tenure by up to 36%, as confirmed by Panday (2025) , with investments in ongoing training, mentoring, and well-being programs aligned with Gen Z and millennial values.

The fundamental problem lies in the inertia of digital talent retention amidst the acceleration of Industry 4.0. Deloitte and The Manufacturing Institute (2024) projected that 1.9 million manufacturing positions could potentially become vacant in the next decade if talent management challenges are not addressed immediately. Cross-industry competition is forcing manufacturing companies to comprehensively reassess their employment value proposition. Soomro and Shah (2020) identified professional training, compensation structures, and leadership styles as fundamental pillars of retention, although the holistic integration of retention strategies still requires significant strengthening in many manufacturing organizations.

The second dimension of the retention problem involves a crisis of innovation culture that challenges the traditional management paradigm of manufacturing. Aldabbas et al.

(2024) emphasize the dependence of innovative behavior on levels of employee engagement and organizational support, while Khalid and Nawab (2018) identify participation in decision-making as a catalyst for organizational loyalty. Hendriati (2024) recommends integrative empirical investigations to generate evidence-based and contextually relevant retention strategies for Indonesian manufacturing.

Contemporary literature reveals heterogeneity in findings regarding the influence of digital talent on retention. Ekhsan et al. (2023) and Taopik (2020) confirmed a significant positive correlation between digital capabilities and retention intentions through the mechanism of psychological empowerment, while Shahzad et al. (2024) identified psychological mediators such as job satisfaction and work engagement as substantial mediators, indicating that the direct relationship between digital talent and retention is not always linear. Similarly, Ghani et al. (2023) and Hasanuddin (2025) support a causal pathway from innovation culture to retention through increased engagement, whereas Lee (2025) identifies potential negative contextual effects in organizations with radical innovation cultures without adequate structural support, creating a substantial theoretical lacuna requiring empirical resolution.

The lack of integrative empirical studies in Indonesian manufacturing settings, as highlighted by Xuecheng et al. (2022) and Sukajie et al. (2025), demonstrates the urgency of contextual research exploring the independent and interactive influence of digital talent and innovation culture on manufacturing employee retention. This study aims to address this gap in the literature by examining the direct influence of both constructs on employee retention, focusing on path coefficients without mediation, using robust PLS-SEM methodology to generalize findings to the broader Indonesian manufacturing population.

The novelty of this research lies in its context-specific integrative approach to post-pandemic Indonesian manufacturing, going beyond the partial approach of previous studies (Ekhsan et al., 2023; Ghani et al., 2023) through validation of direct influence mechanisms (Shahzad et al., 2024; Xuecheng et al., 2022) and contextually-relevant practical recommendations for HR management practitioners.

The academic urgency of this research arises from the need to fill an integrative gap regarding the mechanisms of digital talent and innovation culture in shaping retention (Bag et al., 2021) , while the practical urgency supports optimizing the ROI of digital transformation (Martins & Shahzad, 2024; Nadeem et al., 2024) in the context of Indonesia's talent crisis. The theoretical contribution validates the causal model and measurement instrument of digital talent in a manufacturing setting (Ekhsan et al., 2023) , while the practical implications provide a comprehensive strategy for talent upskilling, redesigning an innovative organizational culture (Ghani et al., 2023) , and formulating talent management policies that are responsive to the expectations of the younger generation, thereby creating a sustainable talent ecosystem to support Indonesia's Industry 4.0 transformation (Hukum & Indonesia, 2023) .

Method

This study uses a quantitative approach to analyze the influence of digital talent and innovation culture on employee retention in manufacturing companies in the Bekasi industrial area. The study sample consisted of 133 employees selected using a purposive sampling technique. Primary data were collected through a Likert-scale questionnaire, while

secondary data were obtained from literature review. Data analysis was performed using PLS-SEM using SmartPLS 3.0, including validity and reliability tests, outer and inner model evaluations, and hypothesis testing. PLS-SEM was selected based on its suitability for models involving multiple latent constructs and a moderate sample size.

Results and Discussion

R test Square

Table 1. R Square Test Results

	R Square	Adjusted R Square
ER	**0.886**	**0.885**

Table 1 presents the results of the R-Square test used to assess the predictive ability of the research model. The R-Square value for the Employee Retention variable indicates that the research model is able to explain the proportion of employee retention variation very well, because this value is categorized as strong according to Chin's (1998) criteria above 0.67. Meanwhile, the Adjusted R-Square value of 0.885 confirms the model's predictive power after adjustment for the number of independent variables, indicating that the digital talent and innovation culture variables have a substantive contribution in explaining employee retention. Thus, the research model can be categorized as having very adequate predictive power in the context of the influence of digital talent and innovation culture on employee retention in companies.

Path Coefficient Test

Table 2. Path Coefficient Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
IC -> ER	0.481	0.479	0.052	9,220	**0,000**
TD -> ER	0.506	0.508	0.051	10,014	**0,000**

Table 2 presents the results of the path coefficient estimation applied to explore the direction and significance of the relationship between variables within the research framework. The analysis results indicate that innovation culture has a positive and significant influence on employee retention in manufacturing companies, as indicated by the path coefficient, t-statistic, and p-value confirming the strength of the relationship, implying that strengthening an innovation culture substantially encourages employee commitment to stay. Similarly, digital talent shows a positive and significant effect on employee retention, with the path coefficient, t-statistic, and p-value confirming the crucial role of employee digital capabilities in retaining talent amidst the dynamics of the manufacturing industry that relies on technological transformation. These findings collectively underscore that both innovation culture and digital talent are essential predictors of employee retention, with strategic

implications for human resource management in the manufacturing context to integrate development initiatives for both factors to minimize turnover and maximize workforce continuity.

Discussion

Talent Influence Digital (X1) on Employee Retention (Y)

Hypothesis testing results using PLS-SEM analysis confirm that digital talent has a positive and significant impact on employee retention in manufacturing companies in the Bekasi industrial area. This finding demonstrates that employees' digital capabilities are substantially correlated with their intention to stay in the organization, reflecting the strategic contribution of digital competencies to the talent retention architecture in the Industry 4.0 transformation era.

The empirical findings of this study align with those of Kumar (2021) , who explored the impact of talent management practices on employee turnover and retention intentions in an industry undergoing digital transformation. The study identified that employees with competencies developed through talent management programs exhibited higher retention rates because they perceived clear career development and professional growth opportunities. Research by Leesakul et al. (2022) further validated the findings by identifying how the adoption of digital manufacturing technologies changes the nature of work and influences employee retention decisions. Their study revealed that employees with high digital competencies tended to experience reduced levels of stress, burnout, and anxiety in the face of technological transformation because they were able to adapt to workflow changes more efficiently. The influence of digital talent on employee retention was also revealed in research by Shahzad et al. (2024) , who explored the role of strategic HR practices in talent retention through the mediation of job satisfaction and work engagement. Their research identified that employee digital talent development not only improves technical proficiency but also contributes to increased job satisfaction and work engagement, which in turn strengthens retention intentions.

In this competitive environment, manufacturing employees with superior digital skills have strong bargaining power and numerous career options, both in manufacturing and the technology sector. Research shows that companies that successfully integrate digital talent into their HR strategies are able to retain key employees, despite strong external pressures. For HR managers in manufacturing, the strategic lesson is to quickly establish a comprehensive talent management system. Focus not only on recruiting and selecting digital talent, but also on developing and retaining them through clear career paths, responsive reward systems, and an organizational culture that supports innovation and continuous learning. Investments in digital capability development must be accompanied by changes in job design, enabling employees to apply their skills meaningfully. This will create a virtuous cycle of skills development, job enrichment, and commitment to the organization, ultimately strengthening long-term employee retention.

The Influence of Innovation Culture (X2) on Employee Retention (Y)

Hypothesis testing through PLS-SEM analysis validates that innovation culture has a positive and significant contribution to employee retention in manufacturing companies in the Bekasi industrial area. This empirical evidence indicates that an organizational atmosphere

that prioritizes innovation, encourages creative experimentation, and facilitates continuous learning is strongly associated with employees' tendency to maintain their affiliation with the company, underscoring the crucial role of innovation culture as a foundation for organizational loyalty in the context of digital industrialization.

The validity of these findings is supported by research by Almerri (2023), who revealed that companies with a progressive organizational culture successfully cultivate an environment where employees experience elevated levels of engagement, which further amplifies their long-term commitment to the organization. A study by Urme (2023) identified that organizations that deliberately design a work environment characterized by welcoming, supportive, and appreciation-oriented characteristics create a magnetic effect that encourages employees to maintain their tenure and channel their discretionary efforts toward organizational success. The influence of innovation culture on employee retention was unraveled in an investigation by Jones et al. (2024). Their findings confirmed that organizations whose cultural fabric is congruent with employees' value systems demonstrate superior retention metrics. Employees who work in environments with an established culture of innovation experience two main benefits. First, they have a real opportunity to express their creative ideas and actively participate in innovation programs. Second, the organization recognizes their innovative contributions, which makes employees feel valued and a vital part of the team.

The "Great Resignation" wave that has rocked the global workforce has intensified competition to attract and retain high-performing employees. This is especially true for millennials and Gen Z, who prioritize company culture fit when choosing a career. Amid this fierce competition, manufacturing employees who work for companies with a strong culture of innovation tend to be more satisfied with their jobs and more loyal to their organizations.

Research shows that companies that successfully instill a culture of innovation as a core part of their identity are able to retain key talent. However , they still face aggressive competition from the technology sector and startups offering more attractive salaries. For HR managers in the manufacturing industry, the key lesson is to immediately implement comprehensive cultural change. Focus not only on technological innovation, but also on cultural innovation that supports employee voice, encourages open discussion, celebrates creative experimentation, and embraces intelligent risk. This innovation culture development program must be supported by changes in organizational practices, such as empowering employees to actively participate in the innovation process and strategic decision-making. Ultimately, this will create a virtuous cycle of cultural participation, job enrichment, and employee loyalty, strengthening long-term retention.

Conclusion

The results of the study indicate that digital talent and innovation culture can significantly contribute to increasing employee retention in manufacturing companies. This finding confirms that organizational efforts to develop employee digital capabilities, including technical expertise, technology adaptation, and transformation engagement, as well as building an innovation culture that supports creativity, measured risk-taking, and continuous learning, can encourage organizational commitment, retention intentions, and stronger perceptions of career opportunities. PLS-SEM analysis confirmed a direct positive

effect with a path coefficient of 0.506 for digital talent and 0.481 for innovation culture , and an R Square of 0.886 explaining 88.6% of the variation in employee retention.

The practical implications of this research suggest that manufacturing companies need to focus not only on recruiting digital talent but also on strengthening a strategic and integrated innovation culture . Providing technology upskilling programs, an agile work environment, and organizational support for employee creative participation are key factors in fostering sustainable retention. By enhancing digital talent and an innovation culture , companies can create a resilient and loyal workforce for the Industry 4.0 transformation, thus positively impacting operational continuity, reducing turnover, and enhancing organizational competitiveness amidst the Great Resignation phenomenon .

Based on the results of this study, suggestions for further research include developing the model by adding other variables that could potentially influence employee retention , such as transformational leadership , work engagement , psychological empowerment , or job satisfaction . Future research is also recommended to expand the scope of the object to different manufacturing subsectors or national regions for a better level of generalizability. Furthermore, the use of longitudinal or mixed-methods approaches can be considered to gain a deeper understanding of the dynamics of digital talent retention and innovation culture in the long term.

References

Afiani Indah, S., & Mulyana Erna, A. (2022). Analisis Faktor Dominan yang Mempengaruhi Retensi Karyawan pada Perusahaan Manufaktur. *Jurnal Akuntansi, Ekonomi Dan Manajemen Bisnis*, *10*(1), 15.

Ajay Chandel (Lovely Professional University, India), Ashutosh Pandey (FORE School of Management, India), Mohit Yadav (O.P. Jindal Global University, India), and Narayanage Jayantha Dewasiri (Sabaragamuwa University of Sri Lanka, S. L. (2025). Innovation Culture and Employee Engagement. *Relationship Between an Organization's Innovation Culture and Employee Engagement and Retention*, 16. https://doi.org/10.4018/979-8-3693-9486-1.ch013

Aldabbas, H., Zain, A., Ahmed, E., & Abdullah, A. N. (2024). *administrative sciences Employee Engagement and Innovative Work Behavior : The Mediating Role of Knowledge-Sharing Behavior in the United Arab Emirates (UAE) Service Context*.

Automated, E. (2024). *ENGINEERING TECHNOLOGY*. *41*(2).

Bag, S., Gupta, S., & Kumar, S. (2021). Industry 4.0 adoption and 10R advance manufacturing capabilities for sustainable development. *International Journal of Production Economics*, *231*. https://doi.org/10.1016/j.ijpe.2020.107844

Chin, W. W. (1998). *The Partial Least Squares Approach to Structural Equation Modeling*.

Ekhsan, M., Badrianto, Y., & Suwandi, S. (2023). Digital Talent on Employee Retention: the Role of Employee Engagement as Mediation. *Journal of Law and Sustainable Development*, *11*(10), e1121. https://doi.org/10.55908/sdgs.v11i10.1121

Ekhsan, M., & Taopik, M. (2020). The Role of Employee Engagement in Mediating the Influence of Talent Management on Employee Retention. *Jurnal Pengembangan Wiraswasta*, *22*(3), 163-176.

Ghani, B., Hyder, S. I., Yoo, S., & Han, H. (2023). Does employee engagement promote innovation? The Facilitators of innovative workplace behavior via mediation and

moderation. *Heliyon*, *9*(11), e21817. https://doi.org/10.1016/j.heliyon.2023.e21817

Hasanuddin, U. (2025). *The Role of Organizational Culture in Enhancing Talent Retention in the Hybrid Work Era*. *13*(6), 5575–5586. https://doi.org/10.37641/jimkes.v13i6.4344

Hendriati, Y., Sufa, S. A., Telaumbanua, E., & Uhai, S. (2024). Analysis of the Impact of Organizational Culture, Employee Training, and Internal Communication on Employee Retention: A Case Study in the Manufacturing Industry in Indonesia. *International Journal of Business, Law, and Education*, *5*(1), 644–656. https://doi.org/10.56442/ijble.v5i1.454

Hukum, J., & Indonesia, K. (2023). *Dalihan Na Tolu Retaining High Performing Employees Dalihan Na Tolu*. *1*(02), 74–81.

Johnson, T., & Shamroukh, S. (2024). Predictive modeling of burnout based on organizational culture perceptions among health systems employees : a comparative study using correlation , decision tree , and Bayesian analyses. *Scientific Reports*, *0123456789*, 1–26. https://doi.org/10.1038/s41598-024-56771-2

Khalid, K., & Nawab, S. (2018). Employee Participation and Employee Retention in View of Compensation. *SAGE Open*, *8*(4). https://doi.org/10.1177/2158244018810067

Kumar, S. (2021). *The impact of talent management practices on employee turnover and retention intentions*. *May*, 1–14. https://doi.org/10.1002/joe.22130

Lee, E. (2025). The Moderating role of Organizational Culture in the Relationship Between Job Autonomy and Innovative Behavior. *Review of Public Personnel Administration*. https://doi.org/10.1177/0734371X251342001

Leesakul, N., Oostveen, A., Eimontaite, I., Wilson, M. L., & Hyde, R. (2022). *Workplace 4 . 0 : Exploring the Implications of Technology Adoption in Digital Manufacturing on a Sustainable Workforce*.

Martins, M., & Shahzad, M. F. (2024). *Assessing the Impact of Strategic HR Practices on Talent Retention Through Job Satisfaction and Work Engagement : Moderating Role of Psychological Empowerment*. *September*, 1–18. https://doi.org/10.1177/21582440241281836

Nadeem, K., Wong, S. I., Za, S., & Venditti, M. (2024). Digital transformation and industry 4.0 employees: Empirical evidence from top digital nations. *Technology in Society*, *76*. https://doi.org/10.1016/j.techsoc.2023.102434

Salem, H., & Almerri, H. (2023). *Investigating The Impact of Organizational Culture on Employee Retention : Moderating Role of Employee Engagement*. *13*(4), 488–507. https://doi.org/10.33168/JSMS.2023.0429

Sarkar, S. H., & Authors, T. (2022). *Influence of Corporate Governance on Sustainability Disclosure in Bangladesh*. *9*(1).

Shahzad, M. F., Martins, J. M., Rita, J., Xu, S., & Mushtaq, H. M. (2024). Assessing the Impact of Strategic HR Practices on Talent Retention Through Job Satisfaction and Work Engagement: Moderating Role of Psychological Empowerment. *SAGE Open*, *14*(3), 1–18. https://doi.org/10.1177/21582440241281836

Soomro, B. A. (2020). *Robustness of the transformational leadership towards corporate entrepreneurship*. *September*. https://doi.org/10.1002/pa.2509

Soto-Acosta, P., Popa, S., & Martinez-Conesa, I. (2018). Information technology, knowledge management and environmental dynamism as drivers of innovation ambidexterity: a study in SMEs. *Journal of Knowledge Management*, *22*(4), 824–849.

https://doi.org/10.1108/JKM-10-2017-0448

Sukajie, B., & Andriani, R. (2025). *Work-Life Balance and Digital Competence on Employee Retention with Employee Engagement as a Mediating Variable 5759*. *13*(6), 5759–5770. https://doi.org/10.37641/jimkes.v13i6.4691

Urme, UN (2023). Dampak strategi manajemen talenta terhadap retensi karyawan. *Jurnal Internasional Sains dan Bisnis*, 28 (1), 127-146.

Xuecheng, W., Iqbal, Q., & Saina, B. (2022). Factors Affecting Employee's Retention: Integration of Situational Leadership With Social Exchange Theory. *Frontiers in Psychology*, *13*(July), 1–13. https://doi.org/10.3389/fpsyg.2022.872105