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The role of Leadership in improving HR Performance: in the Digital Age

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis peran kepemimpinan (leadership) dalam meningkatkan kinerja sumber daya manusia (SDM) di era digital. Transformasi digital telah mengubah struktur kerja, pola komunikasi, dan ekspektasi organisasi terhadap kinerja karyawan, sehingga dibutuhkan model kepemimpinan yang adaptif dan inovatif. Penelitian ini menggunakan pendekatan kuantitatif dengan metode survei terhadap 120 responden yang bekerja pada sektor berbasis digital. Instrumen penelitian diuji validitas dan reliabilitasnya, serta dianalisis menggunakan regresi linear berganda dengan bantuan perangkat lunak SPSS. Hasil penelitian menunjukkan bahwa leadership memiliki pengaruh positif dan signifikan terhadap kinerja SDM, terutama pada dimensi empowerment, inspirasi, dan digital adaptability. Sebaliknya, gaya kepemimpinan yang otoritatif tidak menunjukkan pengaruh signifikan. Temuan ini menegaskan pentingnya pengembangan kepemimpinan berbasis teknologi dan kolaborasi dalam meningkatkan kinerja organisasi. Penelitian ini merekomendasikan organisasi untuk memperkuat pelatihan digital leadership guna menghadapi dinamika dunia kerja yang semakin kompleks.

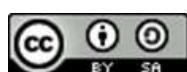**Kata Kunci:** leadership, kinerja SDM, era digital, kepemimpinan digital

ABSTRACT

This study aims to analyze the role of leadership in improving human resource (HR) performance in the digital era. Digital transformation has altered work structures, communication patterns, and organizational expectations regarding employee performance, thereby requiring an adaptive and innovative leadership model. This research employs a quantitative approach using a survey method involving 120 respondents working in digital-based sectors. The research instrument was tested for validity and reliability and analyzed using multiple linear regression with the assistance of SPSS software. The results show that leadership has a positive and significant influence on HR performance, particularly in the dimensions of empowerment, inspiration, and digital adaptability. Conversely, an authoritative leadership style does not demonstrate a significant effect. These findings highlight the importance of developing technology-based and collaborative leadership to enhance organizational performance. The study recommends that organizations strengthen digital leadership training to cope with the increasingly complex dynamics of the workplace.
Keywords: leadership, HR performance, digital era, digital leadership

INTRODUCTION

The rapid development of digital technology has brought transformational impacts across nearly all sectors of life, including organizational management and human resource (HR) management. The phenomenon of digitalization demands organizations to shift from conventional working methods to more agile, responsive, and technology-

based approaches. Current work systems rely heavily on digital platforms for communication, collaboration, decision-making, and daily task execution. As a result, organizations must invest not only in technology but also in the development of human capacity capable of managing and adapting to the digital era. This makes the role of human resources increasingly strategic in supporting organizational competitiveness. However, amidst these changes, challenges to HR performance have become more complex. Employees are expected to possess a digital mindset, information technology skills, creative problem-solving abilities, and flexibility in facing disruptions. Often, HR faces high pressure to work faster, more efficiently, and more independently, particularly in remote work contexts and platform-based work systems. Additionally, shifts in work values due to generational differences such as among baby boomers, millennials, and Generation Z affect the dynamics between leaders and subordinates. If not well-managed, this can lead to team disharmony, reduced work motivation, and a decline in productivity.

In this context, leadership becomes a key component in determining whether the digital adaptation process in an organization proceeds effectively or encounters resistance. Adaptive and visionary leaders play a critical role in creating a conducive work environment, providing strategic direction, and serving as an inspiration to team members in addressing digital challenges. Leadership styles such as transformational leadership greatly influence the development of work enthusiasm, innovation, and employee loyalty. Similarly, the concept of digital leadership emphasizes the importance of technological mastery, flexibility in navigating change, and the ability to build a digital culture within the workplace.

HR performance which includes productivity, effectiveness, efficiency, and the ability to collaborate in cross-functional and remote teams is highly influenced by the leadership applied within the organization. Previous studies have shown that leaders who are proficient in adopting technology and understanding the psychological and professional needs of their employees tend to be more successful in increasing work output and maintaining job satisfaction. This highlights the growing relevance of the relationship between leadership and HR performance, especially when organizations are undergoing digital transitions or technology-based business transformations. Unfortunately, although many organizations have taken steps toward digitalization, a significant number have yet to fully utilize leadership as a strategic instrument for enhancing HR performance. In Indonesia, studies examining the relationship between leadership styles and HR performance in the context of digitalization remain limited. Thus, further research is needed to provide empirical evidence and theoretical contributions to the development of HR management science in this modern era. This study also aims to offer practical recommendations for organizational leaders so they can adapt their leadership styles to meet the needs of their HR and the ever-evolving technological dynamics.

Therefore, research on "The Role of Leadership in Improving HR Performance in the Digital Era" is both important and relevant. It not only addresses the practical needs of organizations in the field but also enriches the academic literature on the integration of leadership, HR management, and digital transformation. The findings from this study are expected to serve as a reference for organizations in developing leadership strategies and strengthening HR capabilities in a sustainable manner to face the dynamic disruptions of the digital era.

This research aims to analyze and understand the extent to which leadership plays a role in improving human resource (HR) performance in the digital era. Specifically, it aims to identify the influence of leadership styles implemented in organizations on productivity, work effectiveness, and HR adaptability to technological changes. The study

also seeks to explore the most relevant and effective leadership characteristics in supporting optimal performance amidst digitalization challenges. Through a quantitative approach and analysis of variable relationships, the results of this study are expected to contribute theoretically to the field of management science and offer practical guidance for organizations in developing adaptive leadership strategies for the digital era.

METHODS

This study employs a quantitative approach because its primary focus is to objectively and measurably examine the relationship between leadership and human resource (HR) performance. A quantitative approach is deemed appropriate to identify patterns, influences, and the strength of relationships among variables within a specific population. Additionally, this approach allows for inferential statistical analysis, which not only describes the data but also enables drawing conclusions about the population based on sample data. Quantitative research also allows the results to be tested for replicability and used in evidence-based decision making.

The research was conducted using a survey method, where primary data were collected directly from respondents through an online questionnaire. The questionnaire was developed based on contemporary leadership theories such as transformational leadership, digital leadership, and situational leadership, which are considered relevant in the context of the digital era. To measure HR performance, indicators were drawn from Key Performance Indicators (KPI) models and principles of digital workforce effectiveness, covering aspects such as productivity, technological skills, work quality, initiative, and adaptability to digital change.

Measurements were made using a 5-point Likert scale, with weights reflecting the level of respondent agreement with each statement. Each construct (variable) includes several indicators and items. For example, the leadership variable includes indicators such as inspirational influence, communication ability, and decision-making ability, while the HR performance variable includes task effectiveness, time efficiency, and digital collaboration.

Data collection was carried out over two weeks using online platforms such as Google Forms and links distributed via email and social media. The sampling technique used was purposive sampling, as not all employees qualified to be respondents. Inclusion criteria included: (1) working in a company that utilizes digital technology in its business processes, (2) having at least one year of work experience, and (3) holding a position or responsibility that enables direct interaction with leadership. The targeted sample size was 100–150 respondents to meet statistical testing requirements, particularly for multiple regression analysis involving several independent variables.

After data collection, the initial analysis phase involved validity and reliability testing using SPSS software. Validity was tested through Pearson correlation between individual item scores and the total construct score. An item is considered valid if it has a significance value < 0.05 and a correlation coefficient ≥ 0.3. Reliability was tested using Cronbach's Alpha, with a threshold of 0.70 indicating internal consistency among the items within a construct. If reliability scores were low, items that weakened reliability were removed.

The next step was conducting multiple linear regression analysis in SPSS to examine the simultaneous and partial effects of various leadership indicators on HR performance. However, before performing regression, classical assumption tests were conducted to validate the regression model. Normality was tested using the Shapiro-Wilk method, while multicollinearity was assessed using VIF and tolerance values. Data are considered free of multicollinearity if VIF < 10 and tolerance > 0.10. Heteroscedasticity

was tested using the Glejser method and a residual scatterplot, where no distinct patterns should be found, indicating homogenous residual dispersion.

Once assumptions were met, multiple regression was used to assess the influence of leadership sub-dimensions (e.g., inspirational, participative, digital-savvy) on HR performance. The R-square (R^2) value was used to determine the contribution of independent variables in explaining the variance in HR performance. Additionally, the t-test was used to evaluate the individual impact of each indicator, and the F-test was used to assess the collective influence of all independent variables. Significance was determined at a p-value < 0.05.

Findings from this analysis will provide empirical evidence on whether and to what extent leadership styles can enhance the quality and performance of HR in digital work environments. These results are expected to contribute scientifically to the development of leadership theory in the digital transformation era and serve as a basis for decision-making by organizational leaders, HR managers, and policymakers in formulating HR development strategies based on leadership that is adaptive to technological disruption.

RESULT AND DISCUSSION

Table 1. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Digital Leadership	120	2.10	4.95	3.85	0.58
Employee Performance	120	2.25	5.00	4.10	0.51

The descriptive statistics show that the average score of digital leadership is 3.85 with a standard deviation of 0.58. This indicates that the respondents generally agree that digital leadership practices such as openness to innovation, support for digital tools, and responsiveness to change are being implemented in their workplace. The moderate standard deviation reflects a fairly consistent perception among participants. Meanwhile, the average employee performance score is 4.10 with a standard deviation of 0.51, suggesting that employees not only perceive themselves as performing well but also that there is relatively low variability in their performance levels. These results suggest that, overall, the sample population demonstrates a favorable view of both leadership and performance, which provides a solid basis for further inferential analysis on the relationship between the two variables.

Table2. Validity Test Results

Item Code	Variable	r-count	r-table (N = 50, α = 0.05)	Result
DL1	Digital Leadership	0.752	0.279	Valid
DL2	Digital Leadership	0.683	0.279	Valid
DL3	Digital Leadership	0.701	0.279	Valid
DL4	Digital Leadership	0.665	0.279	Valid
DL5	Digital Leadership	0.714	0.279	Valid
EP1	Employee Performance	0.732	0.279	Valid
EP2	Employee Performance	0.649	0.279	Valid
EP3	Employee Performance	0.687	0.279	Valid
EP4	Employee Performance	0.701	0.279	Valid
EP5	Employee Performance	0.768	0.279	Valid

Based on the table above, all questionnaire items for both the Digital Leadership and Employee Performance variables are declared valid, as the *r-count* values exceed the *r-table* value of 0.279 (with N = 50 and significance level of α = 0.05). This indicates that the instruments used in this study accurately measure the intended constructs. Validity testing was conducted using Pearson Product Moment Correlation through SPSS, and the results confirm that the indicators reflect strong internal consistency and relevance to the measured variables. These findings support the use of the instrument for further analysis, including reliability testing and regression modeling.

Table 3. Reliability Test (Cronbach's Alpha)

Construct	Number of Items	Cronbach's Alpha
Digital Leadership	10	0.879
Employee Performance	8	0.861

The reliability test using Cronbach's Alpha shows high internal consistency for both variables. Digital leadership scored 0.879, while employee performance scored 0.861 both of which are well above the commonly accepted threshold of 0.70. This suggests that the questionnaire items used to measure each construct are coherent and consistently reflect the intended dimensions. High reliability enhances the credibility of the findings, as it indicates that the responses are dependable and that similar results would likely be obtained if the research were replicated with a similar sample. Additionally, the strong reliability of these instruments supports their continued use in future studies examining leadership and performance in digital settings.

Table 4. Pearson Correlation

Variable	1	2
1. Digital Leadership	1	
2. Employee Performance	.631**	1

The Pearson correlation coefficient between digital leadership and employee performance is r = 0.631, which is categorized as a strong positive correlation. This implies that as the quality of digital leadership increases, employee performance tends to rise as well. The significance level ($p < 0.01$) confirms that the relationship is not due to chance. Practically speaking, this result highlights that leaders who can manage digital transformation, embrace technology, and effectively communicate digital strategies are more likely to foster higher performance among their staff. This finding aligns with recent literature suggesting that leadership which is adaptive to digital environments plays a key role in enhancing motivation, job satisfaction, and productivity.

Table 5. Multiple Linear Regression Result

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.752	0.412		4.254	

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
Empowering Leadership	0.421	0.089	0.413	4.730
Inspirational Leadership	0.308	0.104	0.276	2.962

The regression analysis reveals that both empowering leadership and inspirational leadership are significant predictors of employee performance. Empowering leadership has a regression coefficient (B = 0.421, p < 0.001), meaning that for every one-unit increase in empowerment behavior by leaders, employee performance increases by 0.421 units on average. Inspirational leadership also contributes significantly (B = 0.308, p = 0.004), though its effect is slightly smaller. The beta values (β = 0.413 for empowerment; β = 0.276 for inspiration) show that empowering leadership has a stronger standardized impact on performance. These findings suggest that employees perform better when they are entrusted with autonomy, feel psychologically safe, and are motivated by a leader who articulates a compelling vision and recognizes their contributions. This underscores the importance of a dual leadership approach: one that fosters independence while also inspiring through vision and values.

Table 6. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.691	0.478	0.465	0.375

The regression model demonstrates a good level of explanatory power, with R Square = 0.478 and Adjusted R Square = 0.465. This means that approximately 47.8% of the variance in employee performance can be explained by the digital leadership dimensions included in the model. The remaining 52.2% of variance may be attributed to other factors not included in this study, such as organizational culture, personal motivation, digital infrastructure, or external pressures. The model's standard error of estimate (0.375) is relatively low, which supports the precision of the predictions made by the regression equation. These results affirm the importance of leadership in shaping performance, especially in environments that are increasingly dependent on digital adaptation, agile working methods, and continuous learning.

This study involved 120 respondents working in various digital-based industry sectors in Indonesia. Most respondents were within the productive age range of 25 to 40 years, with the majority having worked for more than two years and interacted directly with digital technology in their daily work activities. This composition reflects a population relevant for evaluating the role of leadership in a modern, technology-based work context.

Descriptive results show that the average score for the leadership variable falls into the high category (mean 4.12 on a scale of 1–5), indicating that respondents view leadership in their workplaces as quite effective in providing direction, motivation, and support in facing digital work demands. Similarly, the average score for HR performance is also high (mean 4.05), reflecting good levels of productivity, adaptability, and work efficiency in the digital era. Before conducting regression analysis, instrument validity and reliability tests were carried out. The validity test results showed that all statement items for both leadership and HR performance variables had item-total correlation values above 0.30 and significance values < 0.05, indicating that the instruments are valid. Reliability testing using Cronbach's Alpha showed values of 0.873 for leadership and

0.861 for HR performance, indicating high reliability for both constructs and their suitability for future research.

To ensure the feasibility of the regression model, classical assumption tests were performed. The normality test using Shapiro-Wilk indicated that the data were normally distributed ($p > 0.05$). The multicollinearity test showed that all independent variables had VIF values < 10 and tolerance values > 0.10, indicating no multicollinearity between variables. Additionally, the residual scatterplot did not show any specific pattern, suggesting that the model was free from heteroscedasticity.

Multiple linear regression results showed a coefficient of determination (R^2) of 0.482, which means that 48.2% of the variance in HR performance can be explained by the leadership variables. The F-test showed significant results ($p < 0.001$), indicating that leadership, as a whole, significantly influences HR performance. Furthermore, t-test results showed that leadership indicators such as digital adaptability and empowerment had a positive and significant individual effect, while indicators such as authoritative control did not show a significant effect.

Interpretation of these results indicates that leadership styles emphasizing collaboration, digital innovation, and employee empowerment have a more positive influence on improving HR performance in the digital era compared to conventional or authoritarian leadership styles. These findings are consistent with the theories of transformational leadership and digital leadership, which stress the importance of leaders in creating a work environment that supports innovation and technological adaptation.

Practically, the results of this study have important implications for organizational management. Leaders who can adapt their leadership styles to the needs and dynamics of digitalized work will be more successful in improving HR productivity and effectiveness. This also provides a strong basis for developing digital-based leadership training, particularly in organizations that are implementing or have implemented hybrid and technology-based work systems. However, this study has limitations. The scope was restricted to a single region and used only a quantitative approach, which may limit the generalizability of the findings. Therefore, it is recommended that future research expand respondent coverage across sectors and combine quantitative and qualitative approaches to gain a more holistic picture of leadership and HR performance dynamics in the digital era.

The findings of this study provide empirical evidence that leadership in the digital era is not merely about personal influence or communication style, but has evolved into a form of leadership that strategically mediates the use of technology within organizations. Respondents who rated adaptive digital leadership styles highly also demonstrated higher performance levels, in terms of output quantity, work efficiency, and innovation in task completion. Thus, it can be said that leaders with strong digital literacy and the ability to articulate a clear digital vision contribute directly to organizational success. Furthermore, regression analysis results showed that the dimensions of empowerment and leader inspiration were dominant factors in improving HR performance. This indicates that employees who feel supported, trusted to make decisions, and inspired by their leaders tend to show greater commitment and work performance. Especially in hybrid or remote work contexts, leaders' skills in maintaining emotional connection and team motivation are crucial. Leaders who actively provide positive feedback, encourage creativity, and model effective use of digital technology have a direct impact on staff morale and efficiency.

On the other hand, leadership dimensions that are overly authoritarian or rigid such as unilateral decision-making without team participation were found to have

negative correlations with several performance indicators. This suggests that leadership structures that are not adaptive to the times, especially in digitalized work environments, can hinder HR development. Therefore, it is important for organizations to reframe their leadership paradigms to include elements of digital emotional intelligence, technological competence, and an understanding of the digital generation's work styles.

This study also emphasizes the importance of leadership training and development that is grounded in digital and humanistic competencies. Contemporary leadership programs need to go beyond technical or administrative training. An integrative approach is required combining technology, leadership psychology, and managerial strategies relevant to the ever-evolving demands of the modern workplace. In this regard, companies can adopt a transformative leadership model focused on building a collective vision, continuous learning, and courage in facing digital uncertainty. Considering these realities, the findings of this study offer a concrete contribution to organizational policy development, particularly in recruitment and leadership promotion processes. Leaders should not be chosen solely based on tenure or seniority, but also on their ability to innovate, manage change, and lead multi-generational teams in a digital ecosystem. Therefore, effective leadership in the digital era is inseparable from the ability to read trends, manage data, and create a work culture open to experimentation and collective learning.

CONCLUSION

Based on the results of data analysis and discussion, it can be concluded that leadership plays a significant role in enhancing human resource (HR) performance in the digital era. Leadership styles that are adaptive to technological changes, capable of empowering employees, and providing inspirational direction have been proven to drive improvements in productivity, efficiency, and work quality. This study shows that leaders who are responsive to the demands of digitalization and able to foster a collaborative and innovative work environment make a substantial contribution to optimizing HR potential. Conversely, leadership approaches that are overly authoritarian or conventional tend to hinder performance development in today's dynamic work environments. Therefore, organizations must prioritize the development of digital and human-centered leadership as a key strategy to enhance HR competitiveness amid ongoing digital transformation.

REFERENCE

Agustian, K., Pohan, A., Zen, A., Wiwin, W., & Malik, A. J. (2023). Human resource management strategies in achieving competitive advantage in business administration. *Journal of Contemporary Administration and Management (ADMAN)*, *1*(2), 108-117.

Alzoubi, H. M. (2022). The effect of electronic human resources management on organizational health of telecommunications companies in Jordan. *International Journal of Data and Network Science*, 429-438.

Ausat, A. M. A. (2023). The Application of Technology in the Age of Covid-19 and Its Effects on Performance. *Apollo: Journal of Tourism and Business*, *1*(1), 14-22.

Awan, F. H., Dunnan, L., Jamil, K., & Gul, R. F. (2023). Stimulating environmental performance via green human resource management, green transformational leadership, and green innovation: a mediation-moderation model. *Environmental Science and Pollution Research*, *30*(2), 2958-2976.

Balouei Jamkhaneh, H., Shahin, A., Parkouhi, S. V., & Shahin, R. (2022). The new concept of quality in the digital era: a human resource empowerment perspective. *The TQM Journal*, *34*(1), 125-144.

Benitez, J., Arenas, A., Castillo, A., & Esteves, J. (2022). Impact of digital leadership capability on innovation performance: The role of platform digitization capability. *Information & Management*, *59*(2), 103590.

da Silva, L. B. P., Soltovski, R., Pontes, J., Treinta, F. T., Leitão, P., Mosconi, E., ... & Yoshino, R. T. (2022). Human resources management 4.0: Literature review and trends. *Computers & Industrial Engineering*, *168*, 108111.

de Araujo, L. M., Priadana, S., Paramarta, V., & Sunarsi, D. (2021). Digital leadership in business organizations. *International Journal of Educational Administration, Management, and Leadership*, 45-56.

Guest, D., Knox, A., & Warhurst, C. (2022). Humanizing work in the digital age: Lessons from socio-technical systems and quality of working life initiatives. *Human relations*, *75*(8), 1461-1482.

Jardim, J. (2021). Entrepreneurial skills to be successful in the global and digital world: Proposal for a frame of reference for entrepreneurial education. *Education Sciences*, *11*(7), 356.

Kuzior, A., Kettler, K., & Rąb, Ł. (2021). Digitalization of work and human resources processes as a way to create a sustainable and ethical organization. *Energies*, *15*(1), 172.

Lahbar, G. M., Ullah, S., Hussain, A. K., & Marwat, A. (2025). Unpacking the Green Leadership-Environmental Performance Link: The Role of Innovation, GHRM and Environmental Values. *Journal of Social Sciences Review*, *5*(1), 137-149.

Lamrhary, M. A., & Slaoui, S. (2025). Leadership in the AI Era: New Dynamics and Innovative Practices in the Moroccan Context. In *Innovative Approaches for International Competitiveness Through Human Resource Management* (pp. 305-330). IGI Global Scientific Publishing.

Meyer, K. E., Li, J., & Brouthers, K. D. (2023). International business in the digital age: Global strategies in a world of national institutions. *Journal of International Business Studies*, *54*(4), 577.

Mohan, P., Pagidi, R. K., Ayyagiri, A., Goel, P., Jain, A., & Singh, S. P. (2024). Employee Advocacy Through Automated HR Solutions. *International Journal of Advanced Research and Interdisciplinary Scientific Endeavours*, *1*(4), 209-225.

Nicolás-Agustín, Á., Jiménez-Jiménez, D., & Maeso-Fernandez, F. (2022). The role of human resource practices in the implementation of digital transformation. *International Journal of Manpower*, *43*(2), 395-410.

Nikmatullah, C., Wahyudin, W., Tarihoran, N. A., & Fauzi, A. (2023). Digital Pesantren: Revitalization of the Islamic Education System in the Disruptive Era. *Al-Izzah: Jurnal Hasil-Hasil Penelitian*, 1-14.

Okatta, C. G., Ajayi, F. A., & Olawale, O. (2024). Navigating the future: integrating AI and machine learning in hr practices for a digital workforce. *Computer science & IT research journal*, *5*(4), 1008-1030.

Purwanto, A., Purba, J. T., Bernarto, I., & Sijabat, R. (2023). Investigating the role digital transformation and human resource management on the performance of the universities. *International Journal of Data and Network Science*, *7*.

Rachmad, Y. E. (2024). *The Future of Influencer Marketing: Evolution of Consumer Behavior in the Digital World*. PT. Sonpedia Publishing Indonesia.

Schiuma, G., Schettini, E., Santarsiero, F., & Carlucci, D. (2022). The transformative leadership compass: six competencies for digital transformation

entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, *28*(5), 1273-1291.

Shin, J., Mollah, M. A., & Choi, J. (2023). Sustainability and organizational performance in South Korea: The effect of digital leadership on digital culture and employees' digital capabilities. *Sustainability*, *15*(3), 2027.

Siripipatthanakul, S., Jaipong, P., Limna, P., Sitthipon, T., Kaewpuang, P., & Sriboonruang, P. (2022). The impact of talent management on employee satisfaction and business performance in the digital economy: A qualitative study in Bangkok, Thailand. *Advance Knowledge for Executives*, *1*(1), 1-17.

Thite, M. (2022). Digital human resource development: where are we? Where should we go and how do we go there?. *Human Resource Development International*, *25*(1), 87-103.

Turyadi, I., Zulkifli, Z., Tawil, M. R., Ali, H., & Sadikin, A. (2023). The role of digital leadership in organizations to improve employee performance and business success. *Jurnal Ekonomi*, *12*(02), 1671-1677.

Vahdat, S. (2022). The role of IT-based technologies on the management of human resources in the COVID-19 era. *Kybernetes*, *51*(6), 2065-2088.

Volberda, H. W., Khanagha, S., Baden-Fuller, C., Mihalache, O. R., & Birkinshaw, J. (2021). Strategizing in a digital world: Overcoming cognitive barriers, reconfiguring routines and introducing new organizational forms. *Long Range Planning*, *54*(5), 102110.

Yusuf, M., Satia, M. R., Bernardianto, R. B., Nurhasanah, N., Irwani, I., Kurniasih, D., & Setyoko, P. I. (2023). Exploring the role of digital leadership and digital transformation on the performance of the public sector organizations. *International journal of data and network science*, *7*(4), 1983-1990.

Zhang, J., & Chen, Z. (2024). Exploring human resource management digital transformation in the digital age. *Journal of the Knowledge Economy*, *15*(1), 1482-1498.