

Leadership Transformation in the Digital Age: Implications for Employee Performance and Engagement in Modern Organizations

Hanuna Shafariah ^{1*}, Akmil Asril ², Redjeki Agoestyowati ³

^{1*} Faculty of Administrative Sciences, Institut Ilmu Administrasi dan Sosial STIAM, DKI Jakarta, Indonesia.

² Digital Business Study Program, Institut Teknologi dan Bisnis Muhammadiyah Bali, Indonesia.

³ Business Administration Study Program, Institut STIAM, DKI Jakarta, Indonesia.

Email: hanuna.alhumam@gmail.com ^{1*}, akmilasril@gmail.com ², redjeki.agoestyowati@gmail.com ³

Article history:

Received November 24, 2024

Revised November 28, 2024

Accepted December 2, 2024

Abstract

Leadership transformation in the digital era has become a key element in determining the success of modern organizations. This study aims to analyze the effect of digital leadership on employee performance and engagement. A quantitative approach with descriptive and explanatory survey design was used to collect data from 200 respondents in the technology, banking, and education sectors. The research instrument was a 5-point Likert scale questionnaire measuring technological adaptability, support for innovation, policy flexibility, and information transparency as dimensions of digital leadership. The results of the linear regression analysis showed that digital leadership has a significant positive effect on employee performance with a regression coefficient of 0.45 ($p < 0.01$) and on employee engagement with a coefficient of 0.38 ($p < 0.05$). The coefficients of determination were 0.52 and 0.46, respectively, indicating that most of the variation in employee performance and engagement can be explained by digital leadership. These findings emphasize the importance of technological adaptability and innovation support in creating a productive and collaborative work environment. The practical implications of this study include digital leadership training, the implementation of flexible work policies, and the increase of information transparency to strengthen the relationship between leaders and employees. In conclusion, effective digital leadership increases productivity and strengthens employee commitment and motivation, making it an important strategy for creating sustainable organizational competitiveness in the digital era.

Keywords:

Digital Leadership; Employee Performance; Employee Engagement; Technology Adaptability; Innovation, Information Transparency.

1. INTRODUCTION

Leadership transformation in the digital era has become one of the most important issues in modern organizational management. The digital era, characterized by rapid advances in information and communication technology, demands significant changes in the leadership approach. Effective leadership in this era is not only measured by a leader's ability to achieve goals but also by his or her ability to drive innovation, manage change, and ensure high employee engagement. Research has shown that transformational leadership style significantly impacts employee engagement. Transformational leadership encourages employees to participate actively in innovation and decision-making, increases their sense of responsibility, and fosters a stronger commitment to the organization's vision and goals (Balasuriya & Perera, 2021). Employees who feel supported and empowered tend to be more emotionally and mentally engaged. This ultimately increases productivity and results in better performance for the organization. Employee engagement, defined as the level of commitment, motivation, and enthusiasm of employees towards their work, strongly correlates with various positive organizational outcomes. Employees actively engaged in their

work are more productive, provide better service, and are highly loyal to the company. Research by Ismail et al. (2019) and Prajapati (2022) found that employee engagement is closely related to increased productivity, customer satisfaction, and operational efficiency. In an increasingly competitive business landscape, leaders must be able to integrate digital technology into their management strategies to strengthen performance and ensure high employee engagement. Therefore, leadership that can adapt to technological changes and facilitate employee engagement will be a major determinant of organizational success in the future. In the digital era, multidimensional leadership facilitates organizational, social and cultural transformation. Leaders are not only required to have traditional managerial skills but also the ability to adapt quickly to technological changes and utilize digital innovation strategically. Leaders who can integrate information technology into their leadership processes can drive organizational performance towards higher efficiency and create a more dynamic and collaborative work environment (Anisah, 2024). One important aspect of leadership in the digital era is the ability to use technology as a means of more effective communication. Digital technology allows leaders to establish faster, more open, and more structured communication with employees, increasing employee engagement in various aspects of the organization's operations. Digital tools such as online collaboration platforms, real-time performance monitoring, and project management applications have been shown to increase transparency, provide faster feedback, and strengthen the relationship between leaders and employees (Ganyang, 2019). The use of digital technology also has positive implications for business performance. Real-time performance monitoring allows leaders to identify obstacles and opportunities earlier to optimize marketing and operational strategies more effectively. This directly impacts overall business performance, especially in digital marketing, which relies heavily on accurate data and rapid analysis (Kleebbuabarn et al., 2022). In this context, digital leadership supports achieving short-term goals. It strengthens the organization's resilience in facing challenges in the digital era, such as rapid market changes and increasing customer expectations (Hanita, 2023). Multidimensional leadership supported by digital technology has a very significant role in creating organizations that are more resilient, innovative, and ready to compete in an increasingly complex business environment.

Employee engagement plays an important role as a mediator in the relationship between transformational leadership and employee performance (Salam & Imilda, 2024). Research shows that leaders who adopt a transformational leadership style successfully increase employee engagement. This leadership style inspires employees to contribute more because transformational leaders emphasize intrinsic motivation, empowerment, and personal development. This creates a greater sense of employee responsibility towards achieving organizational goals (Balasuriya & Perera, 2021; Afianti, 2023). Employee engagement is commitment, enthusiasm, and satisfaction towards their work and organization. In many studies, employee engagement has been associated with increased productivity, loyalty, and quality of work results. Leaders who successfully facilitate employee engagement can encourage employees to deliver optimal performance. Engaged employees feel a closer connection to the organization, motivating them to contribute maximum to organizational goals ("Employee Engagement as a Rhizome for Talent Retention", 2019; Sun & Bunchapattanasakda, 2019). As a mediator, employee engagement is an effect of effective leadership and an important element in achieving high organizational performance. That is, employee engagement is a mechanism that bridges the relationship between leaders and desired performance outcomes. Therefore, to improve employee engagement and performance, organizations need to develop transformational leadership that can create a supportive, empowering, and adaptive work environment to change the work environment. Organizations focusing on developing transformational leadership can maximize employee engagement through an innovative and responsive approach to the ever-changing work dynamics. Leaders who are responsive to changes and employee needs can influence productive work behaviour and encourage the achievement of long-term organizational goals. Leadership transformation in the digital era has become a critical element for the success of modern organizations (Sulistyawati & Munawir, 2024). The digital era demands fundamental changes in how leaders interact with employees and manage business processes. Leaders who are effective in utilizing technology are not only able to improve operational efficiency but also create a more supportive, dynamic, and collaborative work environment. Innovative and forward-thinking leaders can leverage technology to build a more transparent work culture, accelerate the flow of information, and enable employees to adapt more quickly to change (Philip, 2021). Digital technology also provides opportunities for leaders to support employee engagement more effectively. Leaders who use digital tools to monitor performance, provide real-time feedback, and facilitate two-way communication can increase employee participation and motivation. Employees who feel involved and supported by their leaders tend to be more committed to the organization. This has a positive impact on individual performance and increases the overall productivity of the team and organization. Research shows that an environment that supports employee engagement contributes to higher loyalty and reduced employee turnover (Tulungen et al., 2022). In addition, digital leadership transformation enables organizations to remain competitive amidst increasingly complex global challenges. Leaders who are adaptive to technology can facilitate continuous innovation, encourage cross-departmental collaboration, and respond quickly to market changes. Thus, organizations are not only able to achieve short-term targets but also maintain long-term growth in changing market conditions. Appropriate technology also supports business process efficiency, allows organizations to allocate resources more optimally, and ultimately strengthens competitiveness (Wicaksono & Rahmawati, 2020). Leadership

transformation in the digital era is about adopting technology and developing a leadership style that encourages employee engagement and ensures that organizations remain relevant and resilient in facing future challenges.

2. RESEARCH METHOD

This study uses a survey method with a quantitative approach to evaluate the relationship between digital leadership, employee performance, and employee engagement in the organization. This study applies a descriptive and explanatory survey design. The descriptive survey aims to provide an overview of employee perceptions of implementing digital leadership styles in the organization where they work and its impact on employee performance and engagement. Meanwhile, the explanatory survey analyses the causal relationship between digital leadership as an independent variable and employee performance and engagement as dependent variables. Through this approach, the study attempts to identify how much influence digital leadership has on improving employee performance and engagement. The population in this study includes employees from various organizations that have adopted digital-based leadership, such as the technology, banking, and education sectors. AA stratified random sampling technique was used to obtain representative data to obtain representative data involving employees from various job levels. The selected sample was 200 employees, who were asked to fill out a structured questionnaire. The research instrument was a questionnaire with a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), which was designed to measure three main variables: digital leadership transformation, employee performance, and employee engagement. Digital leadership transformation measurements include leaders' adaptability to technology, innovation support, work policy flexibility, and information transparency. Employee performance is measured based on productivity, effectiveness, and efficiency, while employee engagement is assessed through motivation, commitment, and job satisfaction. To ensure data accuracy, this study conducted validity and reliability tests. The validity of the questionnaire was tested through item-total correlation to ensure that each item accurately measures the desired concept. Reliability was tested using Cronbach's Alpha, with a value above 0.7 indicating that the instrument has good consistency. The collected data were analyzed using descriptive statistics to describe respondent patterns and tendencies and simple linear regression analysis to evaluate the effect of digital leadership on employee performance and engagement. This analysis aims to understand how strong the influence of the independent variables is on the dependent variable. Before conducting the regression analysis, this study also includes a classical assumption test to ensure that the regression model used meets the requirements. The assumption tests include a normality test to ensure the data distribution is appropriate, a multicollinearity test to verify no excessive correlation between independent variables and a heteroscedasticity test to ensure stable error variance across the data range. Through this systematic approach, the research is expected to provide a clear understanding of the influence of digital leadership on employee performance and engagement and provide useful recommendations for organizations in optimizing the implementation of digital-based leadership.

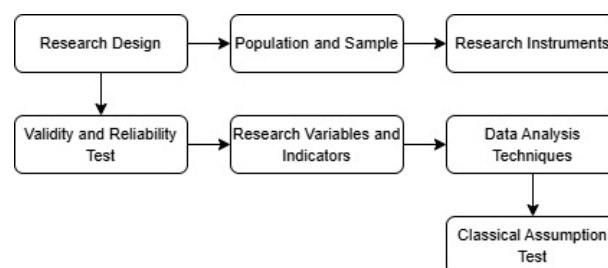


Figure 1. Research Design

This figure shows the research flow, which consists of several important stages. The first stage is Research Design, which determines the research method and approach. Next is the Population and Sample, which determine the research subjects, followed by the selection of Research Instruments. After the instruments are prepared, a Validity and Reliability Test is carried out to ensure the accuracy of the data. Then, the research variables and indicators are identified at the Research Variables and Indicators stage. The collected data are analyzed using Data Analysis Techniques, which ends with the Classical Assumption Test to ensure the validity of the analysis model used.

3. RESULTS AND DISCUSSION

3.1. Results

After data was collected through questionnaires filled out by 200 respondents from the technology, banking, and education sectors, data analysis was conducted to assess the impact of leadership transformation in the digital era on employee performance and engagement in modern organizations. The analysis began with descriptive statistics used to understand the profile of respondents, including age, gender, position, and length of service. This stage aims to ensure that the sample taken reflects diversity in the population so that the results can be applied widely. After understanding the characteristics of the sample, the data was further analyzed using simple linear regression to evaluate the effect of digital leadership on employee performance and engagement. The findings of this analysis revealed that leadership transformation involving technology adoption, information transparency, and support for innovation had a significant impact on improving employee performance. This can be seen from the increase in productivity, effectiveness, and efficiency in their work. Leaders who integrate digital technology into their managerial strategies can create a more effective and adaptive work environment. In addition, the results of this study also show a positive relationship between digital leadership transformation and employee engagement. Leaders who practice transparency, provide work flexibility, and support new ideas can increase employee motivation and commitment to the organization. Regression analysis revealed that employees working under innovative leadership felt more engaged and had higher job satisfaction. To ensure the accuracy of the results, classical assumption tests were conducted, including normality tests, multicollinearity tests, and heteroscedasticity tests. The test results showed that the analysis model used was valid and reliable. Thus, this finding confirms that leadership transformation in the digital era has an impact on improving performance and increasing employee engagement. Organizations that focus on digital leadership transformation have the potential to create a more collaborative and innovative work culture, which ultimately drives long-term success.

3.1.1. Respondent Demographic Description

In this study, 200 respondents participated, with varying job distributions between the technology, banking, and education sectors. Of the total respondents, 55% came from the technology sector, reflecting significant involvement from industries intensively adopting digital technology in their daily operations. As many as 25% of respondents work in the banking sector, which is also undergoing significant digital transformation, especially regarding service efficiency and process automation. Meanwhile, 20% of respondents came from the education sector, which has recently also begun to adapt to digital technology to improve the effectiveness of learning and administration. Regarding position, most respondents, namely 60%, are at the managerial level. This shows that most of the data collected reflects the views of individuals with decision-making responsibilities and direct involvement in organizational strategy, including implementing digital transformation. Respondents at this managerial level are expected to understand better how digital leadership is applied in their organizations and its impact on team performance and employee engagement. Meanwhile, the other 40% of respondents are operational staff who interact directly with the systems and policies implemented by the leadership. Data from this group provides perspectives from individuals directly impacted by digital transformation in their daily activities. Respondent demographics also include a wide range of ages and years of service, providing a broader perspective on applying digital leadership. Younger respondents tend to be more adaptable to new technologies and may have different expectations of leadership styles than older respondents. Meanwhile, variations in years of service with the organization allow for a more detailed analysis of how work experience influences perceptions of leadership transformation. Diversity in the sector, job level, and other demographic characteristics ensure that the study results can provide a more comprehensive picture of perceptions of digital leadership transformation across different types of organizations. This data helps ensure that the study results are not limited to one industry or job level but are relevant to organizations seeking to adopt digital transformation more broadly. As such, this study provides a strong foundation for analyzing the relationship between digital leadership transformation and employee performance and engagement across sectors. The diversity of respondents also allows the study to produce more generalized findings that can be applied as recommendations for organizations in the early stages or in the process of digital transformation.

Table 1. Respondent Demographics

Respondent Category	Percentage of Respondents (%)	Description
Technology Sector	55%	The majority of respondents work in sectors that intensively adopt digital technology.
Banking Sector	25%	Respondents in the banking sector are undergoing digital transformation.
Education Sector	20%	Respondents in the education sector are starting to adopt technology.
Managerial Position	60%	The majority of respondents have strategic decision-making positions.
Operational Position	40%	Respondents at the executive level with direct operational experience.

This table shows the demographic distribution of respondents by industry sector and job level. As many as 55% of respondents came from the technology sector, indicating the dominance of participation from industries highly exposed to digital transformation. The banking sector contributed 25% of respondents, while the education sector contributed 20%. Regarding job titles, 60% of respondents were at the managerial level, reflecting the strategic perspective of decision-makers in the organization. Meanwhile, 40% of respondents worked at the operational level, providing views from implementers interacting directly with digital leadership policies. This table reflects a representative variation to assess the impact of digital leadership on employee performance and engagement.

3.1.2. Descriptive Statistics of Variables

Descriptive statistical analysis yields important insights regarding the average scores of the main variables studied: digital leadership and its indicators, employee performance, and employee engagement. Respondents rated the digital leadership transformation positively, with an average score above 3.5 on a 5-point Likert scale. The dimension with the highest score was Adaptability to Technology, which recorded an average of 4.2, indicating that organizational leaders are perceived as able to adapt to rapid technological developments. Support for Innovation obtained an average of 4.0, indicating that digital leadership significantly encourages employees to create innovative solutions to face work challenges. Another dimension, such as Flexibility of Work Policy, recorded an average score of 3.8, indicating that organizational policies increasingly support work-life balance. Meanwhile, Information Transparency recorded an average of 3.7, indicating that there is still room for improvement in information disclosure at the organizational level. Regarding employee performance, an average score of 3.9 indicates that most respondents feel productive and effective in achieving work targets. This high assessment indicates that the digital leadership style has created a work environment that supports employee efficiency and productivity. The technological and Innovation support implemented by digital leaders allows employees to more easily access the tools and resources they need, improving the overall quality of work. Employee engagement also showed positive results, with an average score of 3.8. This reflects the high level of employee motivation and commitment to the organization. Engagement indicators covering emotional and cognitive aspects show that the digital leadership approach increases productivity and strengthens the emotional bond between employees and the organization. Factors such as adaptability to technology and flexibility of work policies contribute significantly to this engagement, as employees feel supported to develop new skills while maintaining a balance between their work and personal lives. This analysis shows that the transformation of digital leadership has positively impacted employee performance and engagement. The dimensions of adaptability to technology and support for Innovation are the most prominent aspects of digital leadership, while information transparency still requires further attention. High employee performance and engagement reflect the effectiveness of digital leadership in creating a work environment that supports employee productivity, Innovation, and loyalty to the organization.

Table 2. Descriptive Research Variables and Indicators

Variables/Dimensions	Average Score	Information
Digital Leadership		
Adaptability to Technology	4,2	Leaders are able to adapt to technology.
Support for Innovation	4,0	Leaders drive new solutions and innovation.
Flexibility of Work Policy	3,8	Policies support work-life balance.
Information Transparency	3,7	Transparency of information still needs to be improved.
Employee performance	3,9	Employees feel productive and efficient.
Employee Engagement	3,8	The level of motivation and commitment is quite high.

The table above shows the analysis of the average scores for the digital leadership variables and their impact on employee performance and engagement. The Adaptability to Technology dimension recorded the highest score (4.2), indicating the leader's ability to keep up with technological developments. Support for Innovation (4.0) indicates the leader's efforts to encourage creativity. However, Work Policy Flexibility (3.8) and Information Transparency (3.7) reflect the need for improvement to support work-life balance and openness. Overall, employee performance scores (3.9) and employee engagement (3.8) indicate positive productivity and commitment, although there is still room for optimization.

3.1.3. Linear Regression Analysis Results

Simple linear regression analysis was used to measure the relationship between digital leadership. A simple linear regression analysis was conducted to evaluate the effect of digital leadership on employee performance and engagement (Novita et al., 2024). The analysis showed that digital leadership positively and significantly affects employee performance, with a regression coefficient of 0.45 and a significance level of $p < 0.01$. This indicates that an increase in the dimensions of digital leadership contributes directly to improving employee performance. The coefficient of determination (R^2) of 0.52 indicates that implementing digital leadership can explain 52% of the variation in employee performance. In comparison, the remaining

48% is influenced by other factors outside the model being tested. This finding reflects the importance of elements in digital leadership, such as adaptability to technology, support for innovation, policy flexibility, and information transparency, in creating a productive work environment. Leaders who are adaptive to technology tend to be more efficient in supporting work activities, providing clear directions, and optimizing resource utilization. Support for innovation also encourages employees to create new solutions relevant to the organization's needs. At the same time, flexible policies allow employees to balance work responsibilities with their personal lives. In addition, information transparency allows employees to understand better the organization's goals and align their efforts with the company's strategy. These results underline that digital leadership is a managerial tool and a catalyst for increasing productivity, effectiveness, and efficiency in achieving performance. In addition to its influence on performance, digital leadership has also been shown to be significant in increasing employee engagement. The regression coefficient of 0.38 with a significance level of $p < 0.05$ indicates a positive relationship between digital leadership and employee engagement. The coefficient of determination (R^2) value of 0.46 indicates that applying digital leadership principles influences 46% of the variation in employee engagement. At the same time, the rest depends on other variables, such as work culture, interpersonal relationships, or reward systems. High employee engagement reflects motivation, commitment, and a sense of belonging to the organization, all influenced by how leaders apply technology to support work needs.

Leaders who leverage digital technology to improve communication, provide consistent feedback, and create meaningful work experiences have a greater ability to build employee emotional engagement (Imilda et al., 2024). Technology enables leaders to manage distributed teams, ensure inclusivity, and provide access to relevant information in real-time. In addition, the flexibility of technology-enabled work policies gives employees the freedom to work according to their preferences, ultimately increasing motivation and loyalty. These results indicate that digital leadership is concerned with implementing technology and the leader's ability to facilitate a stronger relationship between employees and the organization. Although the results of the analysis show a significant influence, digital leadership is one of many factors determining employee performance and engagement. External factors, such as skills training, organizational structure, compensation, and work culture, also contribute to creating an optimal work environment. Therefore, digital leadership strategies must be integrated with other approaches supporting holistic human resource development. Leaders who combine technology with a humanistic approach will be more able to create an adaptive and innovative organization. This analysis confirms that digital leadership is key to creating superior performance and high employee engagement in the modern era. Effective implementation of digital leadership enables organizations to adapt to rapid changes in the business landscape, leverage technology to support work processes and empower employees to reach their full potential. However, to maximize its impact, leaders must also identify and address potential challenges, such as resistance to new technologies, digital skills gaps, and the need for ongoing training. By adopting a strategic and integrated approach, organizations can harness the potential of digital leadership to achieve long-term goals and increase competitiveness in the global marketplace.

3.2. Practical Implications

This study significantly offers strategic guidance for organizations to adopt and optimize digital leadership to improve employee performance and engagement (Idwan et al., 2024). The practical implications of this study focus on concrete steps that organizations can take to ensure the success of digital leadership transformation. The three main points outlined include digital leadership training, flexible policy implementation, and increased information transparency.

3.2.1. Digital Leadership Training

Digital leadership training is a very important step for organizations in preparing leaders who can face the challenges of the digital era. Amid increasingly rapid technological developments, leaders are not only required to know about technology but also the ability to integrate this technology into various aspects of the organization's operations. Digital leadership requires leaders to use technology to improve managerial processes, decision-making, and team management efficiently and effectively (Armanto, 2024). One important area discussed in this training is the use of information technology in improving communication and collaboration between teams. By using the right digital tools, leaders can streamline the flow of information and facilitate cross-departmental or even cross-country collaboration. In addition, this training also teaches leaders to utilize data in decision-making. Leaders skilled in data analysis can make more evidence-based decisions and support the organization's long-term success. Another skill taught in digital leadership training is the ability to drive innovation in the workplace. Technology-driven innovation can increase productivity and create new solutions to challenges faced by the organization. Well-trained leaders will be able to create a culture that supports creativity and experimentation, which in turn will strengthen the organization's competitiveness. This training also focuses on developing leaders' abilities to design flexible policies that adapt to technological changes. Such policies will support the sustainability and development of the organization amidst the dynamics of rapid technological change. In addition, this training provides an understanding of how to deal with resistance to technological change and improve employee digital literacy.

With the right training, a leader will not only be able to become an agent of change but also empower employees to utilize technology optimally. This will increase productivity and encourage the creation of a more efficient work atmosphere. Therefore, investment in digital leadership training should be considered part of the organization's long-term development strategy. Effective digital leadership directly impacts the organization's sustainability and competitiveness in an increasingly competitive global market.

3.2.2. Flexible Policy Implementation

Flexible work policies have become one of the main pillars in modern organizational strategies that focus on improving employee performance and well-being, especially in the digital era full of rapid technological changes and market dynamics. This policy is designed to allow employees to manage their time and place of work, with various options such as flexible working hours, remote work options, or hybrid work systems. With this kind of policy, employees are given the autonomy to adjust their work schedules to be more efficient and meet their personal needs, ultimately positively impacting the balance of personal and professional life (Lusiana et al., 2024). One of the main advantages of flexible policies is increased productivity. With the ability to work according to the most productive time, employees can complete their tasks with more focus and efficiency. This policy also allows them to balance work responsibilities with personal commitments, such as caring for family or continuing their education. This not only benefits the individual but also contributes to improving the overall performance of the organization. Implementing flexible policies is important in attracting and retaining the best talent in an increasingly competitive labour market. Organizations that offer flexible work patterns are more attractive to professionals who value autonomy. It also allows companies to access talent from different geographies, overcome physical location constraints, and create more diverse and inclusive teams. Flexible policies have also been shown to increase employee engagement and job satisfaction. Employees who feel valued and supported by the organization in their work time and place tend to be more loyal and motivated to contribute their best. With these policies, organizations can create a more positive and productive work environment that supports achieving long-term goals. To successfully implement flexible policies, organizations must ensure adequate technology infrastructure. Effective project management systems, collaboration software, and robust digital communication platforms are essential to support remote and hybrid work. Policies can be ineffective and reduce productivity without technology support. Therefore, flexible policies rely on changes in work patterns and require investment in technology to support seamless collaboration and communication across the organization. With the right approach, flexible policies can effectively improve employee performance and well-being while ensuring the organization's long-term success.

3.2.3. Increasing Information Transparency

Information transparency in organizational communication is vital in building and maintaining trust between leaders and employees. In a transparent organization, leaders openly convey important matters related to the organization's goals, strategies, and decisions. This creates a more inclusive work atmosphere where every employee feels involved and valued in decision-making. With transparency, leaders provide clear direction and a complete picture of the condition and direction of the organization (Fardanty, 2024). The practice of transparency can be realized through various mechanisms, such as holding regular meetings that allow employees to obtain the latest information on organizational developments and periodic reports that are prepared honestly and openly. In addition, digital technology can be used to ensure that all employees can access information in real-time, accelerating the flow of information and reducing the possibility of miscommunication. Using this digital platform also facilitates transparency in conveying decisions related to policies, structural changes, or challenges the organization faces. With clear transparency, employees can better understand their role in achieving organizational goals. They know what is expected of them and how their contribution plays a role in the organization's success. This, of course, increases the sense of responsibility and commitment to work. Employees who clearly understand the organization's direction tend to be more proactive, take initiative, and feel more connected to the organization's vision and mission. Transparency is also key to driving innovation. When leaders share information openly and involve employees in decision-making, it can motivate employees to develop new ideas. Employees who feel valued and involved in the process are more likely to contribute actively and creatively, improving the organization's ability to adapt and innovate in a competitive marketplace. Information transparency plays a vital role in managing expectations and creating harmonious relationships in the workplace. When everyone in the organization has the same information and nothing is hidden, the relationship between leaders and employees will be more open and honest, reducing the potential for conflict and misunderstanding. Therefore, leaders prioritizing transparency are often more effective in motivating teams, strengthening mutual trust, and creating a more collaborative culture. Transparency depends on open communication from leaders and requires support from an adaptive organizational culture. Organizations must ensure that any changes that occur, including the transformation to digital leadership, are supported by all organization members. In this case, a culture that encourages continuous learning and innovation will play a major role in successfully implementing new policies. Organizations prioritizing this culture will be more adaptable to change and strengthen their competitiveness in the market. The implementation of transparency can also be strengthened

with a data-driven approach. Data analytics can help organizations evaluate the effectiveness of implemented policies and identify areas that need improvement. Thus, organizations make decisions not only based on assumptions or intuition but also on accurate data, which allows for more objective and measurable decision-making. Information transparency is an integral part of a successful digital leadership strategy. When combined with the right training, flexible policies, and a supportive organisational culture, information transparency can help organizations adapt to change and improve performance, employee engagement, and sustainable competitiveness.

3.3. Discussion

The results of this study indicate that digital leadership has a significant influence on employee performance and engagement. This finding supports the theory and literature, highlighting the importance of a leadership style adaptive to technology in the digital era. Digital leadership not only acts as a catalyst in organizational transformation but also as a major factor in creating a work environment that supports productivity and innovation. Leaders who can adapt to technological developments create a more dynamic and efficient work environment. This finding is supported by the results of the descriptive analysis, which shows that adaptability to technology obtained the highest average score (4.2). Leaders responsive to technological changes can provide relevant tools like digital collaboration platforms, project management software, and data-driven systems that support fast and accurate decision-making. Access to this technology increases employee work efficiency and allows them to focus on strategic tasks that add value to the organization. In addition, technological adaptability also contributes to improving employee competence through digital training that allows them to keep up with industry trends. Support for innovation is closely related to increased employee engagement. The results showed that support for innovation obtained an average score of 4.0, reflecting that employees feel valued when their ideas are appreciated and supported by leaders. Leaders who encourage exploring new ideas create an empowering work environment where employees feel they have the space to experiment without fear of failure. This increases employees' intrinsic motivation, commitment, and loyalty to the organization. Support for innovation also creates synergy between individuals and teams, ultimately leading to more creative and innovative outcomes in solving organizational problems. Flexible work policies are one of the important dimensions of digital leadership. The findings show that flexible work policies scored an average of 3.8. These policies allow employees to adjust their working hours and methods to suit their needs, improving the balance between personal and professional life. This flexibility is relevant in the digital era, especially with the rise of remote working practices and hybrid work systems. Employees with flexibility in their work tend to be more satisfied, have lower stress levels, and can manage work responsibilities more effectively. However, the success of this policy depends on adequate technological support, such as software for remote communication, task management, and performance reporting. Information transparency recorded an average score of 3.7, which, although positive, still requires further attention. Leaders who are transparent in conveying information regarding organizational goals, strategies, and decision-making create an inclusive and collaborative work environment. This transparency gives employees a sense of trust, increases their understanding of their respective roles in supporting the organization's vision, and encourages them to contribute more optimally. Openness also prevents misunderstandings and creates a more efficient flow of communication. However, these results indicate that some organizations must improve information transparency to ensure that all employees feel involved in decision-making. The regression analysis results showed that digital leadership has a regression coefficient of 0.45 with a significant value of $p < 0.01$ on employee performance. This shows that digital leadership transformation directly contributes to increased productivity, efficiency, and effectiveness. Leaders who use technology to optimize workflows enable employees to achieve targets faster and with better quality. In addition, data-driven management allows leaders to monitor performance in real time, provide relevant feedback, and design appropriate improvement strategies. Employee engagement is also significantly increased under digital leadership, with a regression coefficient of 0.38 ($p < 0.05$). Leaders who use technology to communicate effectively, provide personal support, and provide work flexibility create stronger emotional connections with employees. This increases employee motivation, commitment, and sense of belonging. Employees who are emotionally engaged not only perform better but also show higher loyalty to the company. Based on these findings, organizations are advised to improve digital leadership training, especially regarding technology adaptation and innovation management. In addition, information transparency needs to be increased to strengthen employee trust. Implementing flexible work policies also needs to be expanded to support employee work-life balance. By integrating these aspects, organizations can create a more inclusive, productive, and innovative work environment. digital leadership plays a critical role in driving employee performance and engagement. Effective leaders in the digital age must be able to leverage technology to support employee productivity, innovation, and well-being. A holistic and integrated approach is needed to ensure the success of digital transformation in organizations.

4. CONCLUSION

This study underlines the importance of digital leadership in improving employee performance and engagement in the digital transformation era. In a dynamic business environment, a leader's ability to integrate technology into management strategies plays a significant role in determining the success of an organization. This study shows that digital leadership, including adaptability to technology, support for innovation, flexibility of work policies, and information transparency, directly affects employee productivity and motivation. The results of simple linear regression indicate that 52% of the variation in employee performance and 46% in employee engagement can be explained by applying digital leadership principles. Adaptability to technology is the dimension of digital leadership with the greatest influence, as indicated by the highest score in the descriptive analysis. Leaders who can utilize technological developments increase operational efficiency and provide employees with opportunities to improve their competencies. This adaptability allows leaders to create an innovative work environment where digital tools such as collaboration platforms, project management applications, and real-time data analysis support fast and accurate decision-making. In addition, support for innovation is an important dimension in driving employee engagement. When leaders provide space for employees to contribute through creative ideas, employees feel appreciated and motivated to deliver the best results. This support also creates an inclusive and empowering work culture where employees can experiment without fear of failure. This finding is consistent with the intrinsic motivation theory, which states that rewarding individual initiative increases employee commitment and loyalty to the organization. Flexibility in work policies, including flexible working hours and remote options, has improved employee work-life balance. This dimension is particularly relevant in the digital age, where organizations need to accommodate the increasingly diverse needs of employees. Flexible policies increase job satisfaction, reduce stress, and encourage higher productivity. However, implementing these policies requires supporting technological infrastructure, such as digital communication systems, task management software, and performance reporting. Information transparency is another aspect that is the focus of this study. Transparent leaders create an inclusive work environment where employees feel involved in the organization's strategic decision-making. Information transparency helps build trust between leaders and employees and strengthens a sense of ownership of the organization's goals. However, the study results indicate that information transparency still requires further attention, as some employees may feel isolated from the decision-making process. This study also highlights that digital leadership transformation focuses on technology and involves holistic human resource management. Therefore, organizations are advised to invest in digital leadership training to equip leaders with relevant skills. In addition, strengthening flexible policies and increasing information transparency can be strategic steps to improve overall employee productivity and engagement. By implementing this strategic approach, organizations can create a more inclusive, innovative, and productive work environment. Digital leadership transformation allows organizations to adapt quickly to technological changes, drive innovation, and build long-term competitiveness. In conclusion, digital leadership is a key factor in forming a resilient and sustainable organization that can meet market demands and support employee well-being as a whole. Organizations that effectively integrate digital leadership principles have great potential to create significant added value for all stakeholders.

REFERENCES

- Afianti, Y. (2023). The perception of organizational commitment and employee engagement: a literature review. *International Journal of Multicultural and Multireligious Understanding*, 10(12), 422. <https://doi.org/10.18415/ijmmu.v10i12.5323>
- Anisah, A. (2024). Perancangan Aplikasi Kasir Pada Reborn Outlet. *Jurnal Ilmu Komputer Dan Teknologi Informasi*, 1(2), 24-35. <https://doi.org/10.35870/jikti.v1i2.1069>
- Armanto, K. A. (2024). Sistem Informasi Akademik Berbasis Android Pada Bimbingan Belajar (BIMBEL) Praja Edukasi Banda Aceh. *Jurnal Ilmu Komputer Dan Teknologi Informasi*, 1(2), 13-23. <https://doi.org/10.35870/jikti.v1i2.1066>
- Balasuriya, B. and Perera, G. (2021). The impact of transformational leadership on employee performance: the mediating role of employee engagement in selected porcelain manufacturing companies in sri lanka. *Vidyodaya Journal of Management*, 7(2). <https://doi.org/10.31357/vjm.v7iii.5093>
- Fardanty, R. (2024). Sistem Informasi Katalog Produk Pasar Tani Berbasis Web Pada Dinas Pertanian Dan Perkebunan Aceh. *Jurnal Ilmu Komputer Dan Teknologi Informasi*, 1(2), 51-61. <https://doi.org/10.35870/jikti.v1i2.1089>

- Ganyang, G. (2019). The the impact of organization culture and work environment on employee engagement and it's implication on employee performance of the automotive industry in jakarta, indonesia. *Archives of Business Research*, 7(9), 64-70. <https://doi.org/10.14738/abr.79.6789>
- Hanita, M. (2023). Transformasi ketahanan wilayah pada era digital: peran kepemimpinan digital dalam membangun smart city di kota paimana sumatera barat. *Jurnal Ketahanan Nasional*, 29(2), 199. <https://doi.org/10.22146/jkn.86067>
- Idwan, H., Haikal, M. H., & Wali, M. (2024). Pemanfaatan Tools Canva Dan Template.Net Dalam Pembuatan Sertifikat Online Pada Dinas Pangan Provinsi Aceh. *Jurnal Sistem Komputer (SISKOM)*, 4(2), 72-86. <https://doi.org/10.35870/siskom.v4i2.814>
- Imilda, Alexandra, R., & Ahmad, L. (2024). Analisis Pengaruh Absensi Fingerprint Terhadap Disiplin, Motivasi, Dan Kinerja Pegawai Dinas Pekerjaan Umum Dan Penataan Ruang Aceh (Pupr Aceh) Menggunakan Metode Tam. *Jurnal Sistem Komputer (SISKOM)*, 4(2), 87-103. <https://doi.org/10.35870/siskom.v4i2.815>
- Ismail, H., Iqbal, A., & Nasr, L. (2019). Employee engagement and job performance in lebanon: the mediating role of creativity. *International Journal of Productivity and Performance Management*, 68(3), 506-523. <https://doi.org/10.1108/ijppm-02-2018-0052>
- Kleebbuabarn, N., Rojanapanich, A., Sawaengkun, S., Pongsena, S., & Mutakalin, G. (2022). Service innovation and employee engagement on marketing performance of retail modern trade in thailand. *International Journal of Health Sciences*, 66-82. <https://doi.org/10.53730/ijhs.v6ns3.5223>
- Lusiana, E., Imilda, & Salam, A. (2024). Perancangan Sistem Informasi Inventory Obat Berbasis Web Pada Apotek Fadhilah Farma. *Jurnal Sistem Komputer (SISKOM)*, 4(1), 32-44. <https://doi.org/10.35870/siskom.v4i1.810>
- Novita, Y., Tarmizi, & Lidiana. (2024). Analisis Pengaruh Lingkungan Toko dan Kualitas Layanan terhadap Keputusan Pembelian Impulsif pada Konsumen. *Jurnal Manajemen Dan Teknologi*, 1(2), 32-44. <https://doi.org/10.35870/jmt.v1i2.1103>
- Philip, J. (2021). Viewing digital transformation through the lens of transformational leadership. *Journal of Organizational Computing and Electronic Commerce*, 1-16. <https://doi.org/10.1080/10919392.2021.1911573>
- Prajapati, N. (2022). Factors influencing employee engagement and its impact on organizational performance. *Bagiswori J.*, 2(1), 1-13. <https://doi.org/10.3126/bagiswori.v2i1.56320>
- Ramles, P., & Angin, R. B. P. (2024). Leadership Development Strategies in Organizations: The Role of Human Resource Management in Improving Effectiveness and Productivity. *Jurnal EMT KITA*, 8(2), 801-810.
- Salam, A., & Imilda, I. (2024). Manajemen Sumber Daya Manusia (MSDM). *Eureka Media Aksara*.
- Sulistyawati, U. S., & Munawir. (2024). Membangun Keunggulan Kompetitif melalui Platform E-Commerce: Studi Kasus Tokopedia. *Jurnal Manajemen Dan Teknologi*, 1(1), 43-56. <https://doi.org/10.35870/jmt.v1i1.776>
- Sun, L. and Bunchapattanasakda, C. (2019). Employee engagement: a literature review. *International Journal of Human Resource Studies*, 9(1), 63. <https://doi.org/10.5296/ijhrs.v9i1.14167>
- Tulungen, E., Saerang, D., & Maramis, J. (2022). Transformasi digital: peran kepemimpinan digital. *Jurnal Emba Jurnal Riset Ekonomi Manajemen Bisnis Dan Akuntansi*, 10(2). <https://doi.org/10.35794/empa.v10i2.41399>
- Wicaksono, B. and Rahmawati, S. (2020). Pengaruh employee engagement terhadap kinerja karyawan direktorat sistem informasi dan transformasi digital institut pertanian bogor. *Jurnal Manajemen Dan Organisasi*, 10(2), 133-146. <https://doi.org/10.29244/jmo.v10i2.30132>