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EXPLORING THE INFLUENCE OF DIGITAL LEADERSHIP ON ORGANIZATIONAL PERFORMANCE: THE ROLE OF DIGITAL CULTURE AND DIGITAL LITERACY

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ABSTRACT

Indonesia had a 5.32% unemployment rate, with 7.86 million people unemployed. 5.18% were university graduates and 4.79% held diplomas 1-3 Universities are obliged to improve their organizational performance. This study aims to explore digital leadership, culture, and literacy, as well as organizational performance, and assess how digital culture and literacy play a role in the connection between digital leadership and organizational performance. The analysis focuses on leaders of universities operating in West Java Indonesia. The research uses quantitative methods with 122 universities leaders as the population. 80 leaders participated as respondents using simple random sampling. Data analysis utilized the Structural Equation Model Partial Least Square (SEM PLS) method. Results show that digital leadership has a positive and significant impact on digital culture. Digital leadership also has a positive and significant impact on digital literacy. Digital culture mediates the link between digital leadership and organizational performance. However, digital literacy does not mediate the digital leadership-organizational performance relationship. As practical implications, universities must promote digital leadership and culture integration to improve organizational performance. Leaders should facilitate work satisfaction, high-quality results, efficiency, and goal achievement by instilling a digital culture within universities.

Keywords: Digital Leadership, Digital Culture, Digital Literacy, Organizational Performance, and Higher Learning Education Institutions

1.0 INTRODUCTION

In August 2022, Indonesia had a 5.32% unemployment rate, with 7.86 million people unemployed. 5.18% were university graduates and 4.79% held diplomas 1-3 (Statistical Yearly Book of Indonesia, 2023). Universities work to improve organizational performance to decrease unemployment.

The swift digital evolution in different industries requires a better grasp of how digital leadership impacts organizational effectiveness, specifically in universities. Indonesia has a 5.32% unemployment rate, with a significant portion of this rate coming from individuals with university degrees and diplomas. This highlights the importance of universities improving their organizational performance to better equip students for the job market.

In a time of digital transformation impacting all aspects of business, grasping digital leadership dynamics is increasingly essential. Digitalization has become increasingly important in

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universities, significantly improving how education is delivered and experienced. Key aspects include enhanced access to learning resources, flexibility in learning, global collaboration and networking, personalized learning experiences, and improved student engagement, efficiency in administration, and data-driven insights for better outcomes and so on. The above-mentioned key aspects play an important role in improving the performances of the institutions.

Digital transformation can have a significant impact on university performance in various ways. Firstly, it can improve the learning experience for students through interactive and personalized tools and platforms. Secondly, it can offer greater access and flexibility for students, reaching a wider audience and providing convenient options for those with other commitments. Thirdly, digital transformation can streamline administrative processes, leading to cost savings, efficiency, and better resource allocation. Additionally, it allows for data-driven decision making, enhancing curriculum development and student support services. Collaboration and communication processes can also be improved, fostering a more connected learning community. Innovative teaching methods can be implemented, enhancing pedagogical approaches. Lifelong learning and professional development opportunities can be expanded beyond traditional degree programs. Ultimately, embracing digital transformation can give universities a competitive edge by keeping up with industry trends and meeting the needs of students and employers. In general, digital transformation has the potential to completely change how universities function, enhancing education's quality, availability, and importance while boosting organizational performance and achievement.

Digital leadership is key in driving digital transformation within highly regulated industries like healthcare, life sciences, education, and insurance. Leaders in universities must establish a clear vision and strategy aligned with organizational goals and regulations, while also addressing challenges and opportunities within the industry. Evaluation of emerging technologies and collaboration with stakeholders are also essential for successful digital transformation in universities. Additionally, digital leaders utilize data for decision-making and continuous improvement. They establish strong data governance frameworks and analytics capabilities to extract insights from the large volume of data produced by university organizations. These insights help optimize processes, enhance outcomes, and increase operational efficiency. Moreover, enhancing customer experience is a key focus of digital transformation in universities. Digital leaders prioritize user-centric design, ensuring that digital solutions are user-friendly, accessible, and tailored to various stakeholders' needs. They gather feedback and refine digital solutions to enhance satisfaction and engagement. Overall, digital leadership in universities drives transformation through vision, effective change management, regulatory compliance, technology adoption, collaboration, data utilization, and customer experience prioritization. Embracing digital innovation enables university organizations to improve care, streamline operations, and remain competitive in the evolving industry.

Strong digital leadership drives digitalization. University leaders are involved in fostering digital culture internalization and improving digital literacy among employees. Digital leadership is crucial in shaping digital culture in universities. Leaders set the tone for digital adoption and innovation, inspiring a digital-first mindset among faculty, staff, and students. They also outline a vision for digital transformation in education, emphasizing technology's benefits and the importance of keeping up with advancements. Leaders promote collaboration,

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communication, and provide resources to support the implementation of digital initiatives. Besides digital leaders understand the importance of digital literacy and skills development for all members of the academic community, promoting initiatives that equip students, faculty, and staff to effectively use digital tools. They encourage innovation, experimentation, and collaboration, celebrate successes, and prioritize inclusivity and accessibility in digital initiatives. Ultimately, digital leadership influences the digital culture in Higher Learning Education Institutions by driving digital transformation, enhancing teaching and learning outcomes, and preparing students for success in the digital age.

Digital culture and digital literacy play a significant and multifaceted role in enhancing the quality of graduates from universities. These factors contribute to the readiness of graduates for the digital workplace, improve teaching practices, and provide access to a variety of digital resources for academic and professional growth. Digital technologies allow students to connect and collaborate globally, engaging with peers, experts, and resources worldwide. H universities promote a strong digital culture, encouraging participation in virtual exchange programs and international collaborations. Digital literacy helps graduates communicate and network effectively with diverse individuals, enhancing their global awareness. In addition to technical skills, digital literacy involves critically evaluating information and practicing online responsibility. Universities educate students on ethical considerations, digital rights, and online safety to promote digital citizenship. Graduates with strong digital literacy skills are better prepared to navigate the digital world and contribute positively to society. Overall, digital culture and literacy are essential in Higher Learning Education Institutions for fostering innovation, collaboration, and lifelong learning, and preparing students for success in the digital age.

This study delves into the intricate link between digital leadership and organizational performance, influenced significantly by digital culture and literacy. As organizations navigate the digital age complexities, the evolving role of leadership in guiding success necessitates a deeper understanding of how digital leadership affects outcomes. Digital leadership, defined by inspiring change in digital setting, is central to this exploration, adapting traditional principles to emphasize agility, collaboration, and ongoing learning. It goes beyond technology, promoting a vision and culture embracing digital change. Organizational performance, viewed through lenses like productivity, innovation, financial results, and staff satisfaction, is a multi-dimensional evaluation.

This article suggests that the impact of digital leadership on performance metrics is influenced by two key factors: digital culture and digital literacy. Digital culture, defined by values and behaviors regarding technology and innovation, is crucial for organizational adaptation to digital changes and can accelerate digital adoption. Meanwhile, digital literacy involves the skills needed to use digital technologies effectively, impacting the implementation of digital strategies and organizational performance.

Some researchers on the indirect effects of digital leadership on organizational performance have confirmed the mediating role of digital culture (Shin, J., Mollah, M. A., & Choi, 2023), IT capabilities (Mollah, M. A., Choi, J. H., Hwang, S. J., & Shin, 2023), organizational entrepreneurship (Arabiun, A., Tajpour, M., & Zahedi, M. R.Arabiun, A., Tajpour, M., & Zahedi, 2024) and organizational commitment (Gunawan, A., Yuniarsih, T., Sobandi, A., &

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Muhidin, 2023). Nonetheless, there is a lack of research on this topic in the context of universities and the available literature is limited. Only 10 articles in Scopus indexed journals have addressed this relationship since 2020, indicating a need for further research in this area.

This study aims to outline the variables examined and determine if digital leadership has a positive impact on digital culture and digital literacy, as well as whether digital culture and digital literacy play a role in the relationship between digital leadership and organizational performance. The study focuses on describing and establishing connections between digital leadership, digital culture, digital literacy, and organizational performance, with a specific focus on leaders from 100 campuses operating in Bekasi, West Java, Indonesia, and all emphasizing digitalization and quality assurance in campus management.

Digital leadership is defined as a leadership style that combines transformational leadership with the use of digital technologies (Karakose, T., Kocabas, I., Yirci, R., Papadakis, S., Ozdemir, T. Y., & Demirkol, 2022). It is a leadership style exemplified by individuals who have innovative ideas in the digital environment, motivate their employees in the digital environment, communicate with their employees in a sustainable manner even in the digital environment, and are capable of developing digital strategies (Sağbaş, M., & Erdoğan, 2022). It can also be defined as creating an innovative vision by using technology effectively in managerial processes in order to create a sustainable change culture in the organization (Ordu, A. P. D. A., & Nayır, 2021). In other words, digital leadership is a leadership style that combines transformational leadership with the use of digital technology involving individuals who have innovative ideas in a digital environment, are able to motivate employees in a digital environment, communicate continuously with employees in a digital environment, and are able to develop digital strategies. Dimensions to digital leadership are Influence Others, Have a Vision for the Future, Communicate Well Internally, and Communicate Well External (Muniroh, M., Hamidah, H., & Abdullah, 2021), Communication Usability, Socialization, Virtual teamwork, Adaptation to change, Technical skills, and The trust of coworkers and superiors (Khaira, N., Triyonggo, Y., & Sukmawati, 2023), Visionary Leadership, Digital Era Learning Culture, Excellence in Professional Practice, Systemic Improvement, and Digital Citizenship (Sunu, 2022).

Digital Culture is a digital-based work culture regarding responsibility for an organizational rule that is in the work environment in telecommunication service businesses, retail department stores, due to communication between units within the organization, the collaboration between employees in each organizational unit, responsibilities that produce goals from work results (Muniroh, M., Hamidah, H., & Abdullah, 2021). It is the process of using information and communication technologies to change the way an organization works and operates its business, both in the public and private sectors (Nuryadin, R., Sobandi, A., & Santoso, 2023). Digital culture is conducive to collaboration and innovation technologically by community members under a shared set of values (Ghamrawi, N., & M. Tamim, 2023). Digital culture encompasses various aspects of the modern work environment, involving the implementation of digital-based work practices and technologies to enhance communication, collaboration, and productivity within organizations. This includes the responsibility for organizational rules, the use of information and communication technologies to transform business operations, and the promotion of collaboration and innovation through

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shared values. Digital culture has become essential in today's society, enabling businesses to adapt and thrive in an increasingly digital world.

Digital literacy is also known as computer literacy which means expertise or ability to use computers, the internet, and other digital tools and is an effort to know, search, understand, analyze, and use digital technology (Tatminingsih, 2022). It is viewed as an umbrella term that includes knowledge, skills, attitudes, and values needed for using various digital devices as tools for learning, playing, communicating, and creating (Cao, S., Dong, C., & Li, 2024). Digital literacy is referred to as computer literacy, representing the expertise and ability to utilize computers, the internet, and other digital tools.

Organizational performance deals the measurable outputs an organization obtains compared to its goals or objectives (Muis & Isyanto, 2021). It is the evidence of the output of employees of an organization measured in terms of revenue, profit, growth, development and expansion of the organization (Hilton, S. K., Arkorful, H., & Martins, 2021). Researchers in the field of performance management in the past have discussed performance solely as operational and financial perspectives that impact directly on organizational competitiveness and strategies (Olan, F., Arakpogun, E. O., Suklan, J., Nakpodia, F., Damij, N., & Jayawickrama, 2022). Organizational performance serves as a key indicator of an organization's overall effectiveness and achievement. Dimensions to measure organizational performance are There are four indicators: Financial, Customers, Internal Business Processes, and Learning and Growth (Noercahyo, U. S., Maarif, M. S., & Sumertajaya, 2021). There are four Indicators: Management Commitment, HR Practices, Process Product, and Innovation Product (Ahmed, R. R., Akbar, W., Aijaz, M., Channar, Z. A., Ahmed, F., & Parmar, 2023). There are four indicators: reduce disposal cost, sales income increases, effectively manage cost minimization, and Investment in inventory decrease (Hyder, A., Uddin, B., Siddiqui, H., Naeem, M., & Waheed, 2023)

Some studies have been conducted in terms of the relationships among the variables. Digital leadership has a positive and significant effect on digital culture. The digital leadership-digital culture relationship has been confirmed by Shin, J., Mollah, M. A., & Choi (2023), Busco, C., González, F., & Aránguiz (2023) & Wang, T., Lin, X., & Sheng (2022). The digital leadership-digital literacy relationship has been confirmed by Wijayati, P. H., Imron, A., Hadi, S., Nisa, K., & Lestari (2023) and Khoeroni, R., Suryadi, S., & Gunawan (2022). Digital culture mediating the digital leadership-organizational performance relationship has been confirmed by Puliwarna, T., Djati, S. P., & Tanti (2023), Pradana, M., Silvianita, A., Syarifuddin, S., & Renaldi (2022) & Teguh, M. J., Noermijati, N., Moko, W., & Rofiaty (2022). And, digital literacy mediating the digital leadership-organizational performance relationship has been confirmed by Mollah, M. A., Choi, J. H., Hwang, S. J., & Shin (2023), Tatli, H. S., Yavuz, M. S., & Ongel (2023) & Puliwarna, T., Djati, S. P., & Tanti (2023).

Most studies have concentrated on digital leadership in corporate settings, rather than universities. Furthermore, the involvement of digital culture and literacy as mediators has not been thoroughly explored, especially in the context of Indonesia. This research fills these gaps by conducting a thorough examination of these elements in a particular network of Indonesian universities.

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This study is original for its particular emphasis on universities, offering insights into a sector that is crucial for national progress but lacks sufficient research in the realm of digital transformation. The research combines digital leadership, culture, and literacy in a unique way to evaluate how they together affect organizational performance, an area that has not been thoroughly examined in current studies. The interplay among digital leadership, organizational performance, digital culture, and digital literacy provides fresh insights into how these elements shape and impact each other.

One of the main reasons why research is crucial is the fact that Indonesia's high unemployment rate among university graduates emphasizes the urgent need for universities to enhance their organizational performance in order to better equip students for the job market. Understanding the determinants that impact organizational performance in universities can assist these institutions in adopting more efficient approaches for digital transformation, thereby improving educational results and the job prospects of alumni. The results can assist universities officials in promoting a digital culture and enhancing digital literacy, which are essential for adjusting to the fast-evolving technological environment and sustaining a competitive edge.

Promoting digital leadership and culture integration can result in increased work satisfaction, efficiency, and goal achievement, all of which are essential for the sustainability and growth of universities in Indonesia.

Based on the above postulates, it is hypothesized that:

H1: Digital leadership has an impact on digital culture.

H2: Digital leadership has an impact on digital literacy.

H3: Digital leadership has an impact on organizational performance, mediated by digital culture.

H4: Digital leadership has an impact on organizational performance, mediated by digital literacy.

The hypothesis is formulated by referring to the following conceptual model as shown in figure 1:

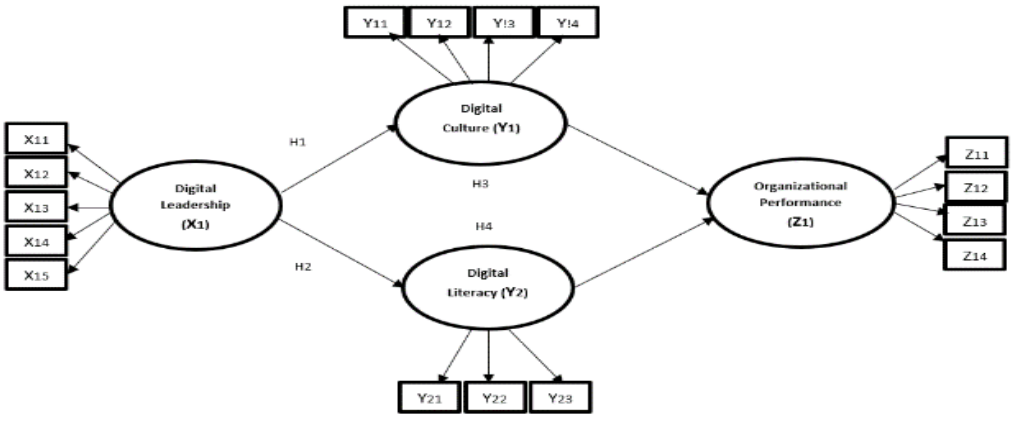

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Figure 1 Conceptual Model

2.0 METHODS

This study utilized Structural Equation Model Partial Least Square (SEM PLS) method through SmartPLS 4 software to analyze the relationships between digital leadership and organizational performance with digital culture and digital literacy as intervening variables. Referring to data from the official website of Directorate General Higher Education Regional Office IV, there are 122 private and public universities in West Java Province. The research population consists of 122 leaders of universities operating in Bekasi Municipality. 93 sample size is determined by Slovin sample size calculation and collected through simple random sampling via online distributed questionnaires. Only 80 leaders who have graduated from masteral education program with a minimum of 2 academic years of experience in leadership roles were willing to be respondents, The amount of respondents is sufficient as in PLS small samples minimum 30-50 can be applied (Purwanto, 2021). The data was analyzed using Partial least squares (PLS). PLS is chosen for its ability to handle various data types and conduct tests for construct validity and reliability, as well as for presenting comprehensive results and enabling thorough analysis. PLS is also useful for predictions, theory confirmation, and examining relationships between latent variables. PLS models include reflexive and formative forms, with reflexive models suggesting that latent variables influence indicators. In unidimensional reflexive models, changes in latent constructs affect indicator changes (Purwanto, 2021).

This study utilizes two types of data: primary and secondary data. Primary data gathered through surveys via electronic form directly having been sent to respondents in November – December 2023 via emails and other applications. Secondary data obtained from journals and other sources. The indicators for each variable are provided in Appendix 1.

Every variable's indicator is assessed using a 1-5 Likert scale to gauge respondents' agreement levels with the statements. The interpretation levels are determined through a specific calculation formula.as follows:

Minimum score = 1

Maximum score =5

Range = 5 – 1 = 4.

Range Level = 4/5= 0,8

Referring to the above calculation, levels of interpretation are formulated in Appendix 2.

According to the interpretations in Appendix 2, every variable is scored and analyzed to address research questions by increasing their scores to higher ranges. Even if a variable is rated as Good or Very Good, there is still room for improvement to reach the highest score.

3.0 RESULTS AND DISCUSSION

The demography of the respondents is shown in the following table 1:

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Table 1. Respondents

No.	Items	Quantity	Percentage
1	Gender		
	Male	47	59%
	Female	33	41%
2	Age Range		
	<35 years	5	6%
	≥35 x ≤50 years	45	56%
	>50 years	30	38%
4	Education		
	Master	8	10%
	Doctor	72	90%
5	Career Duration		
	2 - 5 years	57	71%
	More than 5 years	23	29%

In Table 2, digital leadership has an average score of 4.10 in the good category. Digital culture has an average score of 4.09 in the good category. Organizational performance has an average score of 4.11 in the good category. Digital literacy has the highest score of 4.17 in the good category. Being in the good category means that all variables are well implemented in the operation of universities. Although all variables being observed are well implemented, they still need to be elevated to the highest score range or to be in the very good category. In other words, University leaders must enhance digital leadership, digital culture, digital literacy, and organizational performance to reach a very good category. The scores for all variables are as follows:

Table 2. Variable Scores

No.	Variables	Score	Remarks
1	Digital Leadership	4.10	Good
2	Digital Culture	4.09	Good
3	Digital Literacy	4.17	Good
4	Organizational Performance	4.11	Good

To further discuss the relationship among the variables, Partial Least Square Algorithm presents the output for loading factor. The loading factor value meets convergent validity when it is more than 0.708 (Purwanto, 2021). As shown in figure 2 the lowest loading factor is 0.730. It means all indicators in all variables meet convergent validity. Besides, figure 2 shows the structural model in which loading factor values of all indicators are shown:

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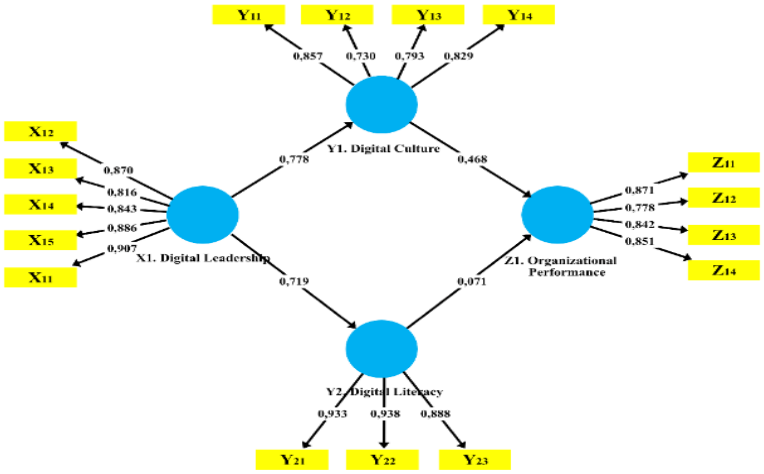

Figure 2. Loading Factor Value

Table 3 shows research indicators tested for discriminant validity by cross loading are as follows:

Table 3. Cross Loadings

	Digital Leadership	Digital Culture	Digital Literacy	Organizational Performance
X_{11}	0.908	0.744	0.623	0.504
X_{12}	0.873	0.648	0.620	0.489
X_{13}	0.838	0.683	0.565	0.575
X_{14}	0.841	0.582	0.479	0.647
X_{15}	0.886	0.681	0.687	0.731
Y_{11}	0.643	0.858	0.709	0.649
Y_{12}	0.547	0.724	0.445	0.571
Y_{13}	0.627	0.797	0.606	0.443
Y_{14}	0.650	0.809	0.640	0.580
Y_{21}	0.604	0.647	0.928	0.536
Y_{22}	0.590	0.736	0.928	0.563
Y_{23}	0.689	0.682	0.888	0.588
Z_{11}	0.554	0.610	0.492	0.858
Z_{12}	0.450	0.497	0.355	0.750
Z_{13}	0.664	0.690	0.680	0.843
Z_{14}	0.570	0.515	0.469	0.863

An indicator is considered valid if the value of its loading factor is more than loading factors of others (Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, 2019). As shown in table 3, for example, loading factor value for X11 in digital leadership variable is 0.908 which is higher than loading factors for indicators of digital culture (0.744), digital literacy (0.623), and organizational performance (0.504). Based on the data shown in table 3 it is concluded that all indicators in all variables observed have discriminant validity.

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Then, the alternative method to confirm discriminant validity is considering the values of Average Variance Extracted (AVE). The result of AVE meets the criteria if it is above 0.5 (Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, 2019). The lowest value of AVE is 0.646 in the digital culture construct. The other constructs are 0.700 in the digital culture, 0.847 in the digital literacy and 0.748 in the organizational Performance. So, all variables are above 0.5. It also indicates that each variable is valid.

Reliability is tested by examining the composite reliability value of each indicator in the variables. Table 4 shows composite reliability results of all variables being observed. It is considered a satisfactory value if it is above 0.7 (Purwanto, 2021). The variable with the lowest value of composite reliability is digital culture construct (0.979). The rest of the variables are more than 0.7. It also indicates that the indicators are reliable. Another way to test the reliability of the indicators is based on Cronbach's alpha result. It is considered satisfactory if the value is above 0.6 (Purwanto, 2021). Table 4 shows the Cronbach's alpha values of all variables. The variable with the lowest value of Cronbach's alpha is digital culture (0.816). The other values of the variables are above 0.6. It indicates that all indicators are reliable.

Reliability is also tested by rho-a result. It is considered a satisfactory value if it is above 0.5 (Sugiyono, 2018). Table 4 shows the Cronbach's alpha values of all variables. The variable with the lowest value of Cronbach's alpha is digital culture (0.816). The other values of the variables are above 0.6. It indicates that all indicators are reliable. Reliability is also tested by rho-a result. It is considered a satisfactory value if it is above 0.5 (Sugiyono, 2018). As shown in Table 4 the variable with the lowest value of rho a is digital culture (0.821). And the rest of the variables are above 0,5 indicating that the indicators are reliable.

Table 4. Reliability Tests

Variables	Composite Reliability	Cronbach's Alpha	rho_a
Digital Culture	0.879	0.816	0.821
Organizational Performance	0.903	0.857	0.866
Digital Literacy	0.943	0.909	0.910
Digital Leadership	0.937	0.916	0.921

Considering the values of indicators of all variables based on the above tables it is concluded that all indicators in the model meet the reliability and validity criteria.

Multicollinearity is detected. There is a strong or perfect linear correlation, confirming that the independent variables are not interconnected. The test results show that multicollinearity is not present as the Variance Inflation Factor (VIF) value of the independent variables is less than 5 when compared in the multicollinearity test (Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, 2019). All indicators in this research are less than 5.

After the estimated model fulfils the outer model criteria, the structural model is then tested. The R-Square values are shown in Table 5.

Table 5 R Square and R Square Adjusted

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	R Square	R Square Adjusted
Digital Culture	0.605	0.598
Digital Literacy	0.517	0.509
Organizational Performance	0.622	0.603

It is shown in Table 5 that digital culture and digital literacy simultaneously affect organizational performance. It means that digital culture and digital literacy can explain the variable of organizational performance because the R Square ranges from 0 to 1, with higher values indicating greater explanatory power (Purwanto, 2021).

As shown in Table 6 the values of criteria in saturated and estimated model has been considered good and met model fit as follows:

Table 6. Model Fit

	Saturated Model	Estimated Model
SRMR	0.078	0.089
d_ULS	1.045	1.367
d_G	0.637	0.704
Chi-Square	273.466	288.441
NFI	0.749	0.735

Table 7 shows hypothesis testing in Smart PLS. It can be seen in the total effects (mean, standard deviation, t-values) as follows:

Table 7 Hypothesis Testing

Code	Hypothesis	*Original Sample*	Sample Mean	Standard Deviation	T *statistics*	P *values*	Result of Hypothesis
H1	Digital Leadership (X1)=> Digital Culture (Y1)	0.778	0.781	0.055	14.136	0.000	Accepted
H2	Digital Leadership (X1)=> Digital Literacy (Y2)	0.719	0.722	0.056	12.793	0.000	Accepted
H3	Digital Leadership (X1)=>Digital Culture (Y1)=> Organizational Performance (Z1)	0.364	0.382	0.135	2.689	0.007	Accepted
H4	Digital Leadership (X1)=>Digital Literacy (Y2)=> Organizational Performance (Z1)	0.051	0.050	0.101	0.506	0.613	Not Accepted

The correlation between digital leadership and digital culture is strong based on Table 7, with a T-statistic of 14.136 surpassing the t table value of 1.66. The initial sample estimate value of 0.778 is positive, indicating a positive relationship between digital leadership and digital

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culture. The P value of 0.000 confirms the significance of this relationship. Therefore, the H1 hypothesis that digital leadership positively impacts digital culture is supported. Implementing digital leadership in universities can enhance the digital culture by promoting innovative technology use, motivating staff and faculty, utilizing communication technology, formulating digitalization strategies, and fostering a technology-focused vision for managerial processes. Employees at universities engage in digitalized work practices, utilizing technology for communication, collaboration, and productivity in alignment with organizational digitalization regulations, incorporating information and communication technology into daily tasks, and supporting each other in digital innovation. This finding supports the previous research of Shin, J., Mollah, M. A., & Choi (2023),Busco, C., González, F., & Aránguiz (2023) & Wang, T., Lin, X., & Sheng (2022).

Table 7 also shows that the relationship between digital leadership and digital literacy is significant with a T-statistic of 12.793> t table 1.66. The original sample estimate value is 0,719, indicating that the direction of relationship between digital leadership and digital literacy is positive. The P values is 0.000 showing that the relationship is significant Thus, the H2 hypothesis stating that digital leadership affects digital literacy significantly and positively is accepted. The implementation of digital leadership can encourage the employees and lecturers of universities to have digital literacy. By having innovative ideas about the use of the technology at work, always motivating employees and teachers to use technology at work, always communicating continuously with employees and faculty members using information and communication technology facilities available at campus, developing digitalization strategies well and creating an innovative vision in using technology effectively in managerial processes in campus the employees of universities use digital technology skillfully, ethically, and safely in daily technical work in team work to communicate and coordinate. This finding confirms some previous research results of AlAjmi (2022) and Benitez, J., Arenas, A., Castillo, A., & Esteves (2022).

Table 7 indicates a significant relationship between digital leadership and organizational performance, mediated by digital culture, with a T-statistic of 2.689> t table 1.66. The sample estimate value is 0.364, showing a positive direction in this relationship. The P value of 0.000 also confirms significance, supporting the acceptance of the H3 hypothesis. This means that digital leadership, when implemented effectively, can lead to work satisfaction, high-quality output, efficiency, and goal accomplishment through the establishment of digital culture by universities. This finding confirms some previous research findings of Puliwarna, T., Djati, S. P., & Tanti (2023), Pradana, M., Silvianita, A., Syarifuddin, S., & Renaldi (2022) and Teguh, M. J., Noermijati, N., Moko, W., & Rofiaty (2022).

The relationship between digital leadership and organizational performance, mediated by digital literacy, is not significant in Table 7 with a T-statistic of 0.506< t table 1.66. The original estimate value is 0.051, indicating a positive direction, but the P value of 0.613 shows insignificance. Therefore, the H4 hypothesis that digital leadership significantly improves organizational performance through digital literacy is rejected. This finding contradicts some previous research findings of Mollah, M. A., Choi, J. H., Hwang, S. J., & Shin (2023), Tatli, H. S., Yavuz, M. S., & Ongel (2023) and Puliwarna, T., Djati, S. P., & Tanti (2023).

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The results of this research add to the current knowledge by showing how digital leadership affects organizational performance of universities mediated by digital culture and literacy. Contrary to past research mainly centered on business settings, this study emphasizes the distinct difficulties and advantages present in the field of education. In addition, the research shows that digital culture plays a role in connecting digital leadership and organizational performance, whereas digital literacy does not have the same effect, giving fresh perspectives on the dynamics between these elements. This new insight can help universities leaders develop a digital culture that boosts organizational performance, leading to better educational results and job opportunities for graduates.

The theoretical consequences suggest that digital leadership impacts digital culture and digital literacy, with digital culture playing a role in the relationship between digital leadership and organizational performance. Digital literacy, on the other hand, does not play a role in this relationship.

As practical implications, universities must promote digital leadership and culture integration to improve organizational performance. Leaders should facilitate work satisfaction, high-quality results, efficiency, and goal achievement by instilling a digital culture within universities. This involves encouraging staff to adopt digital work practices, use technology for communication and collaboration, and support each other in digital innovation. By promoting innovative technology use, motivating staff, utilizing communication technology, and formulating digitalization strategies, university leaders can create a technology-focused vision for managerial processes, leading to skilled graduates being successfully employed and a reduction in the unemployment rate.

4.0 CONCLUSION

Indonesia had a 5.32% unemployment rate, with 7.86 million people unemployed. 5.18% were university graduates and 4.79% held diplomas 1-3. Universities need to improve their organizational performance to decrease the unemployment rate.

This study aims to describe the implementation of observed variables and confirm their association. All observed variables are well implemented but there is room for improvement. Digital leadership have a positive significant impact on digital culture. It also has a positive significat impact on diital literacy. Besides, digital culture acts as a mediator between digital leadership and organizational performance. Conversely, digital literacy does not mediate this relationship.

Based on the reseach findings, campus leaders are encouraged to focus on implementing digital leadership and digital culture to enhance organizational performance at universities. Leaders can achieve this by promoting innovative technology use, motivating staff to utilize technology, maintaining communication through ICT, developing digitalization strategies, and having a forward-thinking approach to technology use in campus management processes. The use of digital technology by employees at universities in daily work enhances communication and coordination, fostering work satisfaction, high-quality output, efficiency, and goal attainment.

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Limitation of this study is that the research has a small amount of respondent. Future studies could involve a broader and more varied group of universities from various regions in Indonesia or other nations to confirm the results and improve the applicability of the findings. Moving forward, potential research in the future could investigate the impact of digital leadership and culture in universities on student results like academic achievement, digital skills, and job prospects.

At last but not least, tt is hoped that this study will encourage university leaders to enhance organizational performance through implementation of digital transformation in their organizations in order to improve the quality of campus graduates. Better quality graduates will increase the graduate employability and decrease the unemployment rate.

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Appendix 1

The Indicators of Variables

No.	Indicators of Digital Leadership Variable
1	Our institutional leaders consistently come up with creative ideas for integrating technology into our work.
2	Our institutional leaders consistently encourage employees and teachers to utilize technology in their roles.
3	Our institutional leaders maintain constant communication with employees and teachers through the information and communication technology resources at our school.
4	Our institutional leaders excel at formulating digitalization strategies.
5	Our institutional leaders have successfully implemented a forward-thinking approach to using technology in school management processes.
No.	Indicators of Digital Culture Variable
1	All staff members use technology for digital communication, collaboration, and productive work at school.
2	Our organization has specific rules on the adoption of digital technology.
3	Information and communication technology is integrated into our daily work tasks.
4	We encourage mutual support and innovation through digital means.
5	All employees utilize digital tools for communication, collaboration, and productivity in the school environment.
No.	Indicators of Digital Literacy Variable
1	We effectively utilize digital technology in our everyday technical tasks
2	We effectively utilize digital technology in team collaboration for communication and organization
3	We effectively utilize digital technology with ethics and safety in mind
No.	Indicators of Organizational Performance
1	We are content with our work at our organization
2	The work of our alumni is of superior quality
3	We utilize resources effectively in our work
4	We consistently meet our goals.

Source: processed data of researchers

Appendix 2

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Level of Interpretation

Score Range	Level of Interpretation
4.21−5.00	Very Good
3.41−4.20	Good
2.61–3.40	Fair
1.81−2.60	Poor
<1.81	Very Poor

Source: (Sugiyono, 2018)