

## The Role of Digital Competence, Digital Leadership, Digital Culture, And Religiosity, on Individual Creativity And Lecturers' Performance At Muhammadiyah University of Palopo

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### **Keywords:**

*Digital Competence, Digital Leadership, Digital Culture, Religiosity, Individual Creativity, Lecturer Performance.*

### **Abstract**

*This study aims to analyze the role of digital competence, digital leadership, digital culture, and religiosity on individual creativity and performance of lecturers at Muhammadiyah University of Palopo. Digital competence, digital leadership, digital culture, and religiosity are expected to influence lecturers' creativity in developing teaching materials and their performance in teaching and interacting with students. The research method used is quantitative with a survey approach, using questionnaires distributed to lecturers at Muhammadiyah University of Palopo. The results of the study indicate that digital competence has a significant positive impact on lecturers' creativity and performance. Digital leadership and digital culture also have a positive effect on creativity, while religiosity does not show a significant effect on lecturers' performance. This study contributes to the understanding of the factors that influence lecturers' creativity and performance in the digital era.*

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## INTRODUCTION

The development of digital technology in recent years has changed almost all aspects of life, including in the world of education. The digital era has created new challenges for lecturers, who are now required to have adequate digital competence to optimize the learning process, both online and face-to-face. Digital competence that includes skills in utilizing information and communication technology (ICT) is one of the key factors in improving lecturer performance and the quality of their teaching (Molina et al., 2021). Lecturers who have good digital skills can not only increase efficiency in managing teaching materials and communicating with students, but can also create a more engaging and interactive learning experience. However, the integration of digital technology in education, especially in the context of teaching in higher education, is not without challenges. Some of the main challenges faced by lecturers include the need to continuously update their digital skills in order to keep up with the rapid development of technology, as well as the need to have adequate access to digital devices and infrastructure to support their teaching activities. Addressing these challenges requires a comprehensive approach, including the provision of training and support for lecturers, as well as the allocation of sufficient resources to ensure the necessary digital infrastructure is available. (Cubillas et al., 2023).

In addition to digital competence, digital leadership also plays an important role in improving the effectiveness and performance of lecturers. Digital leadership is the ability of leaders to utilize technology to achieve organizational goals and manage changes in organizational culture. In the context of education, the importance of digital leadership cannot be ignored because universities must adapt to the rapidly evolving digital landscape. Digital leaders play an important role in driving the digital transformation of universities by creating a culture of innovation, fostering trust between stakeholders, and aligning digital initiatives with strategic goals.(Turkish, 2023). Digital leadership can encourage faculty to integrate technology into teaching and develop a culture that is more adaptive to innovation. Effective digital leaders are able to create an environment that supports collaboration and innovation, and provide digital skills training to faculty, so that they remain relevant to technological developments and the demands of modern education. Digitally competent leaders can guide higher education institutions through the challenges of digital transformation, enabling them to maximize the benefits of digital technology while maintaining academic standards and student engagement.(Antonopoulou et al., 2021).

One of the factors that is also important in influencing lecturer performance is digital culture. Digital culture includes mindsets and habits that develop due to the use of technology in everyday life. In the world of education, digital culture can encourage lecturers to be more open to change and ready to adapt to new technologies. With the rise of digital learning, educators must now overcome the challenges of ensuring equitable access to digital resources and developing the necessary digital competencies among both students and lecturers.(Srivastava, 2023)In addition, digital culture supports more effective interactions in the classroom, both between lecturers and students and between fellow lecturers, which in turn can improve the quality of teaching and learning.Higher education institutions must play a role in supporting the development of digital skills among lecturers, as this is essential to encourage the widespread adoption of technology in teaching and learning. According to the literature, universities should include courses that address sustainability across disciplines and from multiple perspectives, to empower lecturers with the skills needed to effectively integrate digital technologies into their teaching.(Martinez-Pelaez et al., 2023). Lecturer training is very important in facilitating change and adoption of information and communication technology, as it can effectively reduce resistance to change among teaching staff.

Religiosity is also no less important in influencing the creativity and performance of lecturers. Religion can have positive and negative impacts on creativity and learning outcomes. Religious activities and beliefs can increase creativity through various mechanisms, such as providing new perspectives, enriching schemas, and fostering an internal locus of control. This approach not only helps students understand the relationship between religious values, but also

creates a deeper and more meaningful learning environment.(Bal & Kokalan, 2021). Religious lecturers are often more creative in designing learning materials, utilizing technology to connect academic aspects with spirituality, and using character education as part of the learning process. Religiosity can shape the perspective, worldview, and teaching approach of lecturers, which ultimately impacts the learning experience of students. Religiosity is also no less important in influencing the creativity and performance of lecturers. This approach not only helps students understand the relationship between science and religious values, but also creates a deeper and more meaningful learning environment. Religious lecturers are often more creative in designing learning materials, utilizing technology to connect academic aspects with spirituality, and using character education as part of the learning process(Liu et al., 2018)

This study aims to analyze the role of digital competence, digital leadership, digital culture, and religiosity on individual creativity and lecturer performance at Universitas Muhammadiyah Palopo. This study is expected to provide theoretical and practical contributions to the development of more effective educational technology strategies, as well as provide references for policy makers in supporting digital transformation in higher education environments. By integrating these four variables into a comprehensive research framework, this study is expected to provide new insights into the factors that influence lecturer creativity and performance in the digital era.

## METHODS

### Population and sample

This study used a quantitative approach. According to Baruch and Holtom (2008), a response rate of more than 15% is generally considered acceptable in studies using survey methods. In addition, Hair et al, (2010) recommend a minimum sample size of 100 for structural equation modeling (SEM) analysis with a 5% error rate therefore, with 100 responses, this study has met the minimum sample size requirements for SEM analysis.

**Table 1.**Respondent Description

Characteristics	Category	Frequency	percentage
<b>Gender</b>	Man	54	0.54%
	Woman	46	0.46%
<b>Age</b>	33-37	48	0.48%
	38-45	52	0.52%
<b>Academic Degree</b>	S2	100	100%
	S3	0	0%
<b>Academic Position</b>	Permanent Lecturer	100	100%
	Non-Permanent Lecturer	0	0%
<b>Number of Digital</b>	Less Than 5X	47	0.47%

**trainings  
attended**

Less Than 10X      53      0.53%

**Measurement Items And Scales**

Measurement items and scales are the main components of quantitative research that often affect research results. The right measurement items must be able to capture the concept of the construct being measured. The same measurement items are used in previous empirical research. Due to the complexity of scale development, the use of existing measurement items is usually considered more practical than creating new measurement items. Digital Competence (KD); Digital Leadership (KEG); Digital Culture (BD); Religiosity (R); Individual Creativity (KI); Lecturer Performance (KRD) are measured using a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

**Table 2.**Measurement items

Construct	Loading
Digital Competence (KD) Adapted from Dang et al (2024), Elstad & christophersen (2017), and kubrushko et al (2020).	
Ability To Use ICT In Teaching	0.932
Skills in online collaboration	0.955
Ability To Create Interactive Teaching Materials	0.961
Digital Leadership (KEG) is adapted from(Quddus et al., 2020),(Purwanto et al., 2021),(Rui et al., 2024)	
Ability to Leverage Technology in Learning Management	0.875
Implementation of Digital Strategy to Achieve Organizational Goals	0.912
Support for Innovation and Collaboration Within Teams	0.948
Digital Culture (BD) is adapted from(Leal-Rodriguez et al., 2023),(Fahmi et al., 2023),(Mus & Mas, 2024)	
Level of collaboration and information sharing among Lectures	0.782
Willingness to adapt to new technologies	0.897
Application of best practices in teaching	0.801
Religiosity (R) adapted from(Ma'ruf et al., 2022),(Miskiah et al., 2019),(Helmawati et al., 2024)	
Integration of religious values in teaching	0.895
Use technology to connect learning materials with spiritual aspects	0.957
Application of character education thourgh ICT	0.931
Individual Creativity (IC) is adapted from(Wasim et al., 2024),(Xie et al., 2020), the et al (2021)	

Ability to generate new and innovative ideas	0.892
Solving problems in unique ways	0.810
Creation of a learning environment that supports creativity	0.866
Lecturer Performance (KRD) adapted from (Wahyudi, 2022), (Anakpo et al., 2023), (Wahjudi et al., 2024)	
Quality of teaching and interaction with students	0.787
Level of student statistics and motivation	0.702
Professional development and international collaboration	0.859

### Data Collection Procedures

This study used several steps in the data collection procedure. First, in developing the questionnaire, this study applied a reverse translation procedure from English to Indonesian and back to English. This aims to ensure the clarity of the questionnaire content. Second, after obtaining the final version of the questionnaire, an initial trial was conducted by sending the questionnaire to 20 respondents for initial data analysis. This procedure minimizes the potential for bias that can affect the validity of the research results. This stage includes calculating the possibility of measurement errors in the survey method, such as method bias, response bias, and social desirability bias, to improve the quality of the survey, as well as ensuring that the questionnaire is understood by the respondents. Third, the main research was conducted by distributing the questionnaire via social media and email. This distribution was followed by notification via text message to ensure that the questionnaire sent had been received by the respondents. This method is considered one of the best methods to reach a wide range of respondents at low cost and in a short time. To increase the response rate, at the end of each month during the research period, we sent an email to respondents as a reminder. To maintain the confidentiality of respondents' personal data, we ensure that their names and identities will not be disclosed in this study. Data collection was carried out during the period October 2024 to December 2024.

### RESULTS AND DISCUSSION

Hypothesis testing (see Figure 1) was conducted using the Structural Equation Modeling (SEM) technique through Partial Least Squared (PLS-SEM). This study used the SmartPLS version 4 software package. PLS-SEM was used in this study because it is often used in marketing and management research with the aim of analyzing causal relationships between latent constructs. In addition, this technique is effective in estimating causal relationships in theoretical models based on empirical data. The criteria for evaluating the structural model (outer model) using SEM-PLS are (i) reliability test which can be seen from the composite reliability and Cronbach's alpha values, (ii) convergent validate which can be seen from the loading factor value and the average variance extracted (AVE) value, and (iii) discriminant validate which can be seen from the square root value

of AVE and the correlation between latent constructs. The next step is to evaluate the outer model through a reliability test which aims to prove the accuracy, consistency and precision of the instrument in measuring the construct. The reliability test is carried out by looking at the composite reliability value ( $> 0.70$ ). Thus, it can be concluded that the data is reliable (Table 3).

Convergent validity is related to the principles in which the measures (real variables) of a particular construct should be highly correlated. Convergent validity testing is done by checking the value of the loading factor compared to the rule of thumb ( $> 0.6$ ), then by looking at the average value of the extracted variance (AVE) compared to the rule of thumb ( $> 0.50$ ). Based on the results of convergent validity testing, the loading factors on each construct all have values greater than the rule of thumb ( $> 0.60$ ). The values of each average variance extracted (AVE) for each construct all have values greater than the rule of thumb ( $> 0.50$ ) (Table 3). We applied two criteria in evaluating discriminant validity. First, we applied a criterion in which the square root of the AVE variable should be higher than its correlation with other variables. Second, we evaluated the heterotrait-monotrait (HTMT) ratio of the correlation. According to Henseler et al., (2015), HTMT is more sensitive in reducing discriminant validity compared to other criteria. To show discriminant validity, HTMT between two constructs must be less than 0.90. These two criteria support the discriminant validity of all our variables (Table 3).

**Table 3.** Reliability, convergent and discriminant validity

CONSTRUCTION	1	2	3	4	5	6
Digital Competence	<b>0.902</b>	0.160	0.387	0.149	0.589	0.203
Digital Leadership	0.950	<b>0.832</b>	0.133	0.125	0.113	0.240
Digital Culture	0.157	0.912	<b>0.686</b>	0.221	0.827	0.576
Religiosity	0.330	0.119	0.828	<b>0.861</b>	0.264	0.253
Individual Creativity	0.140	0.113	0.156	0.928	<b>0.734</b>	0.570
Lecturer Performance	0.519	0.107	0.667	0.232	0.857	<b>0.617</b>

Note: The values on the diagonal in bold are the square roots of the Average Variance Extracted (AVE) of each factor. The values below the diagonal are the correlations between factors, and the values above the diagonal are the HTMT 1 Heterotrait-Monotrait ratios; the criterion confidence interval does not include 1; HTMT<sub>90</sub> –Henseler et al. (2015) Digital Competence (KD); Digital Leadership (KEG); Digital Culture (BD); Religiosity (R); Individual Creativity (KI); Lecturer Performance (KRD).

**Table 4.** Hypothesis Testing

Hypothesis	Connection	Coefficient	T	R <sup>2</sup>	Q <sup>2</sup>	P-Value	Decision
Immediate Effects		Track	Statistics	Square			
H1	KD→KI	0.328	3,840			0.000	Supported Not
H2	KEG→KI	-0.021	0.294			0.769	Supported
H3	BD→KI	0.546	6,649			0.000	Supported Not
H4	R→KI	0.104	1,200			0.230	Supported
H5	KI→KRD	0.513	7.291			0.000	Supported
	KRD			0.314	0.305		

	KI		0.522	0.496	
Indirect					
Effects	KD→KI→KRD	0.168	3.481	0.001	Supported
	KEG→KI→KR				Not
	D	-0.011	0.288	0.744	Supported
	BD→KI→KRD	0.280	4.269	0.000	Supported
					Not
	R→KI→KRD	0.053	1.147	0.251	Supported
Total					
Effect	KD→KRD		3,841	0.001	Supported
					Not
	KEG→KRD		0.288	0.744	Supported
	KI→KRD		4.629	0.000	Supported
					Not
	R→KRD		1.147	0.251	Supported

Note: \*\*Statistically significant at 5%; ns not significant. The rule of thumb for R Square values is as follows: 0.75 for strong category, 0.50 for medium category, and 0.25 for weak category. The rule of thumb value for  $Q^2 > 0$  indicates that the model has no predictive relevance, and the rule of thumb  $Q^2 < 0$  indicates that the model has no predictive relevance. Digital Competence (KD); Digital Leadership (KEG); Digital Culture (BD); Religiosity (R); Individual Creativity (KI); Lecturer Performance.

Evaluate the significance value by looking at the path coefficient value from the test results with Partial Least Square (PLS) and with bootstrapping calculations (Table 4). From the path coefficient results, it can be seen that for (H1), Digital culture has a positive and significant impact on individual creativity ( $\beta=0.555$ ;  $p<0.05$ ). For (H2), digital leadership has a negative and significant impact on individual creativity ( $\beta= -0.027$ ;  $p>0.05$ ). For (H3), digital competence has a positive and significant effect on individual creativity ( $\beta=0.308$ ;  $p<0.05$ ). Furthermore, for (H4), individual creativity has a significant effect on lecturer performance ( $\beta=0.560$ ;  $p<0.05$ ). Furthermore, for (H5), religiosity does not have a significant positive effect on individual creativity ( $\beta=0.079$ ;  $p>0.05$ ).

## DISCUSSION

This study aims to explore the role of digital competence, digital leadership, digital culture, and religiosity on individual creativity and lecturer performance at Muhammadiyah University of Palopo. The results of the study indicate that these variables have a significant impact on individual creativity and lecturer performance.

### 1. Digital Competence and Individual Creativity

Digital competence has been proven to have a significant positive impact on the creativity of individual lecturers. The results of this study (H3), digital competence has a positive and significant effect on individual creativity ( $\beta=0.328$ ;  $p<0.05$ ). Lecturers who have adequate digital skills can utilize information and communication technology (ICT) to improve the quality of teaching materials and learning experiences for students. With the ability to utilize technology, lecturers can create more interactive and engaging teaching methods, and facilitate more effective communication with students. (Harahap et al., 2023).

which shows that digital competence allows lecturers to access wider learning resources and enrich teaching materials that can be applied in class. Thus, digital competence supports lecturers in creating more innovative learning experiences, which in turn has an impact on improving their performance in teaching and assessing students). In addition, digital competence also has a positive impact on lecturer performance. Lecturers who master digital competence can integrate technology into the learning process, such as the use of online learning platforms and online collaboration tools. This competence allows lecturers to improve the efficiency of class management and provide faster feedback to students. (Basilotta et al., 2022). These results are consistent with research conducted by Kubrushk. Digital competence has been proven to have a significant positive impact on the creativity of individual lecturers.

## 2. Digital Leadership and Individual Creativity and Lecturer Performance

Digital leadership plays an important role in enhancing individual creativity of lecturers. Leaders who have good digital skills can create a work environment that supports innovation and collaboration. Effective digital leaders can motivate lecturers to develop their digital skills and integrate them into teaching. In this study, Digital Leadership does not have a significant influence on Individual creativity (path coefficient = -0.021;  $p > 0.05$ ). The results of this study indicate that digital leadership does not have a positive influence on individual lecturer creativity. This study supports the findings Alif & Nastiti, (2022) which shows that digital leadership does not affect individual creativity.

## 3. Digital Culture and Individual Creativity and Lecturer Performance

Digital culture in academic environments influences individual lecturers' creativity by encouraging them to be more open to technological changes and adapt to the use of digital tools in the learning process. A digital culture that supports collaboration and information sharing enables lecturers to access broader knowledge, which in turn enriches their teaching. This study also shows that digital culture plays a significant role in enhancing individual lecturers' creativity. (H1), ( $\beta=0.546$ ;  $p<0.05$ ). This study supports the findings of (Paper, 2018) especially by providing faster and easier access to educational resources, as well as introducing more innovative teaching practices.

## 4. Religiosity and Individual Creativity and Lecturer Performance

Lecturer religiosity has a contribution to individual creativity in terms of integrating moral and ethical values in teaching. Religious lecturers tend to incorporate religious principles in the way they teach and interact with students, which in turn can improve the quality of the learning experience. However, the results of this study also show that religiosity does not have a significant influence on lecturer performance. For (H5), religiosity does not have a significant positive effect on individual creativity ( $\beta=0.104$ ;  $p<0.05$ ). This study supports the findings from Grantor (2025). Nevertheless, religiosity plays an important role in creating a more meaningful teaching environment, by connecting academic aspects with spiritual values.

## 5. Individual Creativity and Lecturer Performance

The creativity of individual lecturers plays an important role in improving their performance. Lecturers who are creative in designing teaching materials and developing innovative teaching methods can increase student participation and their motivation in the learning process. The results of this study are ( $\beta=0.513$ ;  $p>0.05$ ) This study shows that individual creativity has a significant positive impact on lecturer performance, which is reflected in the quality of teaching, interaction with students, and the ability to manage learning more effectively. This study supports the findings of (Reche & Perfectti, 2020).



## CONCLUSION

This study reveals that digital competence, digital leadership, digital culture, and religiosity have a significant influence on individual creativity and performance of lecturers at the University of Muhammadiyah Palopo. Lecturers with high digital competence tend to be more innovative in designing interactive and effective learning, while digital leadership encourages the creation of an environment that supports the development of creativity. The digital culture formed in the educational environment also helps lecturers to be more adaptive to technological changes, which has an impact on improving the quality of teaching and interaction in the classroom. On the other hand, religiosity provides an additional dimension to lecturer creativity by integrating moral and ethical values into the learning process. Overall, this study shows that these factors collectively contribute to improving lecturer performance, both in teaching and developing knowledge. Therefore, strengthening digital competence, adaptive leadership to technology, and a digital culture that supports collaboration and innovation are very important to improve the quality of education. Meanwhile, religiosity enriches learning by adding spiritual values that deepen students' learning experiences. This study provides new insights for policy makers in supporting digital transformation in higher education, with the hope of improving the overall quality of education.

This study has several limitations that need to be considered in interpreting the results. First, this study was only conducted on lecturers at Universitas Muhammadiyah Palopo, so the results may not be fully generalizable to all universities in Indonesia. Contextual factors specific to this institution may affect the research findings and may not apply to other educational environments. Second, this study used a quantitative method, which may not fully explore qualitative aspects related to the experiences, motivations, and challenges faced by lecturers in developing their creativity and performance. A qualitative approach could provide deeper insight into the factors that influence lecturers' creativity and performance. In addition, external factors such as institutional policies, technological infrastructure, and management support have not been fully analyzed in this study. In fact, these factors can play a significant role in improving lecturers' digital competence and performance. Another limitation is the lack of variation in the research sample, because all respondents in this study were permanent lecturers with Master's degrees, which may limit the variation in relevant experiences and perspectives. Therefore, further research is recommended to expand the population coverage, adopt a qualitative or mixed approach, and consider external variables that can affect individual creativity and lecturer performance.

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