

# Determinants of Lecturer Performance Based on Catur Dharmaat Muhammadiyah Universities in East Java

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## Abstract

This study aims to analyze the determinants of lecturers' performance based on Catur Dharma at Muhammadiyah Higher Education Institutions (PTM) in East Java, by examining the influence of intellectual capital, leadership effectiveness, and organizational communication, with organizational support as a moderating variable. A quantitative approach using a survey method was applied to 189 permanent lecturers from 16 PTMs. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results showed that all independent variables significantly affect lecturer performance, with organizational communication being the most dominant factor. Organizational support also showed a significant direct effect and acted as a moderator that strengthened the influence of leadership effectiveness and communication on performance. However, it weakened the effect of intellectual capital. This study highlights the importance of synergy between individual capacity, institutional support, and effective communication in improving lecturer performance and emphasizes the need to integrate Islamic and Muhammadiyah values into a contextual performance evaluation system within PTMs.

**Keywords:** Lecturer Performance; Catur Dharma; Muhammadiyah Higher Education Institutions.

## 1. Introduction

Muhammadiyah Higher Education Institutions (PTM) in East Java have a strategic role in supporting the improvement of the quality of Indonesian human resources through educational services, health, and socio-religious activities based on Islamic and Muhammadiyah values. (Jatim Newsroom, 2023). However, major challenges are still faced, especially in terms of competitiveness, institutional governance, and the quality of human resources, especially lecturers (Al Faruq, 2020; Bahri et al., 2025; Putri & Astutik, 2023). Based on data from LLDIKTI Region VII and PDDIKTI (2024), of the 16 PTMs in East Java, only 3 have obtained superior accreditation, and only 2.94% of their lecturers have achieved professorship. This shows the need for an in-depth evaluation of the determinants of lecturer performance within the framework of Muhammadiyah's distinctive values: Catur Dharma. (BANPT, 2024; Muhammadiyah Central Leadership, 2012).

The performance of lecturers in PTM is not only measured by the tridharma of higher education like other universities, but also includes a unique fourth dimension, namely Al Islam and Muhammadiyah (AIK). AIK is positioned on par with education, research, and community service, and is a marker of Muhammadiyah's institutional identity that distinguishes PTM from other campuses (Muhammadiyah Central Leadership, 2012). However, an initial survey showed that the performance of lecturers in the field of AIK was still low; only 15.28% of lecturers performed very well, while 34.20% were still in the poor category. This is a concern in itself, considering that AIK is a moral and spiritual instrument that should color the entire academic practice of lecturers. (Huda & Nursyamsiyah, 2024; Mukin, 2021).

At the practical level, positive phenomena in PTM, such as Muhammadiyah University of Sidoarjo and Lamongan, show that the integration of AIK values in lecturer leadership can bring institutions to achieve superior accreditation. (Muhammadiyah Central Leadership, 2012). However, there are not many empirical studies that systematically examine the determinants of lecturer performance within the Catur Dharma framework, especially in the context of East Java. This indicates a significant research gap.

Theoretically, this study develops a framework using Social Exchange Theory (SET). (Blau, 1964) This explains how mutually beneficial social exchanges between lecturers and institutions contribute to improved performance. SET is used to interpret the role of intellectual capital (IC), leadership effectiveness (EK), organizational communication (KO), and organizational support (DO) as determinants that influence lecturer performance (Bernadin & Russel, 2016; Eisenberger et al., 2002). Although these variables have been widely studied, the results obtained are not always consistent. Several studies state that IC, EK, and KO have a significant influence on performance. (Aguirre et al., 2023; Arina et al., 2023; Borut et al., 2023), but other studies show the opposite results (Asiaei et al., 2023; Baso et al., 2020; Chao et al., 2021), thus indicating an inconsistency of findings, which is a gap for further research.

The novelty of this research lies in two main aspects. First, the integration of AIK values into the measurement of lecturer performance through the Catur Dharma framework. It is an approach that has not been widely adopted in higher education management studies. Second, the placement of organizational support as a moderating variable on the influence of IC, EK, and KO on lecturer performance provides a

new perspective in examining the dynamics of social relations in the Muhammadiyah academic environment. This study also strengthens the middle theory approach of Human Relations Theory, which emphasizes the importance of interpersonal relationships and human values in work performance (Miller, 1965).

This study aims to analyze the influence of intellectual capital, leadership effectiveness, and organizational communication on the performance of lecturers based on Catur Dharma, with organizational support as a moderating variable, in PTM in East Java. The theoretical contribution of this study is to expand the application of Social Exchange Theory in the context of higher education based on religious values. Practically, the results of this study provide strategic recommendations for PTM leaders in improving the quality of human resources based on AIK values. While in terms of policy, these findings can be a reference in designing policies for coaching and assessing lecturer performance more comprehensively and contextually.

## 2. Methodology

This study uses a quantitative approach with a survey method designed to explain the influence of independent variables on dependent variables and examine the moderating role that arises from interaction variables. (Nazir, 2014; Sugiyono, 2021). This design was chosen because it can test the causal relationship between variables in the context of determinants of lecturer performance based on Catur Dharma at Muhammadiyah Higher Education Institutions (PTM) in East Java. (Singarimbun et al., 2008). The location of the study was determined at 16 PTMs under the auspices of LLDIKTI Region VII East Java, consisting of 8 universities, 4 institutes, and 4 colleges, as recorded in PDDIKTI and BAN-PT data (2025).

The research implementation period was carried out from January to April 2025, covering all stages, starting from questionnaire distribution, data collection, to the data analysis process. The population in this study was all permanent lecturers at Muhammadiyah Universities in East Java, totaling 2,650 people, as stated in the processed data from PDDIKTI and SINTA (2025).

The sampling technique used is proportionate stratified random sampling, which allows each lecturer from all PTMs to have a proportional opportunity to be selected as a sample, according to the number of lecturers in each university. Based on Slovin's calculation, the determination of the number of samples is based on the Slovin formula, as follows:

$$n = \frac{N}{1+N(e)^2}$$

Information

n = number of samples

N = population size (2650)

e = Percentage of tolerance limit with a significance of 7%

Based on this formula, the number of lecturers as samples in this study was determined as follows:

$$n = \frac{2650}{1+2650 (0,07^2)} = 189 \text{ orang}$$

The sample in this study was 189 lecturers at Muhammadiyah Colleges in East Java. Furthermore, the distribution of samples for each Muhammadiyah college in East Java, which was the location of the study, can be determined using the formula:

$$n_i = \frac{N_i}{N} \times n$$

(Nazir, 2014)

Where  $n_i$  = sample,  $N_i$  = population,  $N$  = number of population,  $n$  = number of samples. Based on the calculation results, the distribution of samples from each Muhammadiyah University of East Java, as explained in Table 1, is as follows:

**Table 1:** Sample Distribution

No	College	Population	Sample
1	Muhammadiyah University of Gresik	222	16
2	Muhammadiyah University of Jember	291	21
3	Muhammadiyah University of Lamongan	151	11
4	Muhammadiyah University of Madiun	51	4
5	University of Muhammadiyah Malang	861	60
6	Muhammadiyah University of Ponorogo	211	15
7	Muhammadiyah University of Sidoarjo	274	20
8	Muhammadiyah University of Surabaya	404	28
9	Muhammadiyah Institute of Business and Health Technology, Tulungagung	19	1
10	Ahmad Dahlan Institute of Technology and Business, Lamongan	59	4
11	Muhammadiyah Institute of Technology and Business, Banyuwangi	18	1
12	Ahmad Dahlan Institute, Probolinggo	36	3
13	Muhammadiyah Tuban College of Economics	12	1
14	Muhammadiyah College of Health Sciences, Bojonegoro	23	2
15	Muhammadiyah Lumajang College of Teacher Training and Education	7	1
16	Muhammadiyah AR Fachruddin College of Technology Bojonegoro	11	1
	Amount	2650	189

Source: Data processing results, 2025.

The data collection instrument is arranged in the form of a questionnaire that has been tested for validity and reliability through outer loading and composite reliability analysis. All indicators have a loading factor value above 0.7 and a composite reliability value above 0.8, indicating that the instrument meets the requirements as a valid and reliable measuring tool. Data measurement uses a five-point Likert scale, with a range of 1 for "strongly disagree" to 5 for "strongly agree". The weights and categories of measurement are arranged as in Table 2, as follows:

**Table 2:** Data Measurement Weights and Categories

Measurement Scale	Weight
Strongly disagree (STS)	1
Don't agree	2
Undecided/Neutral (RR)	3
Agree (S)	4
Strongly agree (SS)	5

### 3. Analysis

The data analysis technique used is Partial Least Squares Structural Equation Modeling (PLS-SEM) with the help of SmartPLS software. This technique was chosen because it can accommodate complex research models and can be used for data analysis with non-normal distributions, and can test causal relationships simultaneously. (Ghozali & Latan, 2015) . The measurement model is tested through convergent and discriminant validity evaluations, while the structural model is tested through R-square values, t-statistic values, and hypothesis testing.

The structure of the relationship model between research variables can be explained mathematically through the basic multiple regression equation as follows:

$$KD = \beta 1IC + \beta 2EK + \beta 3KO + \beta 3DO + \beta 4IC.DO + \beta 5EK.DO + \beta 5KO.DO + \varepsilon$$

Information:

KD = Lecturer Performance

IC = Intellectual Capital

EK = Leadership Effectiveness

KO = Organizational Communication

DO = Organizational Support

$\beta 1$  = Intellectual Capital Coefficient

$\beta 2$  = Leadership Effectiveness Coefficient

$\beta 3$  = Organizational Communication Coefficient

$\beta 4$  = Intellectual Capital Coefficient - Organizational Support

$\beta 5$  = Leadership Effectiveness Coefficient - Organizational Support

$\beta 6$  = Organizational Communication Coefficient - Organizational Support

The equation above is used to test the direct and moderating effects of variables on lecturer performance within the Catur Dharma framework, which includes teaching, research, community service, and Al Islam and Muhammadiyah. (Nurmandi et al., 2019; Muhammadiyah Central Leadership, 2012) . Each construct in the model is evaluated based on indicators developed from relevant theories, such as Social Exchange Theory. (Blau, 1964) , Human Relations Theory (Mayo, 1933) , and various previous research results (Bangsu, 2023; Fikri et al., 2021; Hidayah et al., 2023; Jusriadi, 2017) .

Through this approach, the research is expected to explain the contribution of each variable to improving lecturer performance, which is not only reviewed from the academic professional aspect, but also from the religious and ideological dimensions typical of Muhammadiyah, namely Al Islam and Kemuhammadiyahan, as a form of innovation in measuring lecturer performance based on values. (Huda & Nursyamsiyah, 2024) .

### 4. Results

The results of this study describe descriptive and inferential data on the influence of intellectual capital, leadership effectiveness, organizational communication, and the role of organizational support as moderating variables on the performance of lecturers based on Catur Dharma at Muhammadiyah Higher Education Institutions (PTM) in East Java. Based on the results of a survey of 189 permanent lecturers from 16 PTMs under the coordination of LLDIKTI Region VII East Java, descriptive results were obtained regarding the characteristics of respondents and perceptions of the research variables. The data shows that most lecturers are in the productive age group and highly educated, with the largest proportion having functional positions from Assistant Expert to Lecturer.

**Table 3:** Description of Respondent Characteristics

Variables	Category	Frequency	Percentage (%)
Gender	Man	88	46.6
	Woman	101	53.4
Age Level	<26-30 years	13	6.9
	31-35 years	49	25.9
	36-40 years	33	17.9
	41-45 years	26	13.8
	46-50 years	25	13.2
	>50 years	43	22.8
	1-5 years	48	25.4
Years of service	6-10 years	58	30.7
	11-15 years	24	12.7
	16-20 years old	20	10.6
	>20 years	39	20.6
	1-5 years	48	25.4
Education	Postgraduate (S2)	139	73.5
	Doctor (S3)	50	26.5
	Teaching Staff	16	8.5
Functional Department	Member Assistant	61	32.3
	Lecturer	88	46.6
	Associate Professor	18	9.5

Rank/class	Professor	6	3.2
	Does not have a class rank yet	8	4.2
	Young Arranger, III/b	93	49.2
	Arranger, III/c	54	28.6
	Arranger Level I, III/d	16	8.5
	Supervisor, IV/a	10	5.3
	Kindergarten Supervisor I, IV/b	4	2.1
	Young Principal Supervisor, IV/c	1	0.5
	Senior Advisor, IV/d	2	1.1
	Principal Supervisor, IV/e	1	0.5

Source: Data processing results, 2025.

Table 3 shows the gender distribution of 189 lecturers, with 46.6% male and 53.4% female. The majority of respondents were female, slightly higher than males. This results in a fairly even distribution between genders. However, there is no difference in the fields and work authorities between men and women in Muhammadiyah universities in East Java.

Age category shows that the majority of respondents are aged 31-35 years, with 25.9% over 30 years. The smallest age group is <26-30 years (6.9%). The majority of respondents are aged between 31-35 and >50 years, indicating a more mature age group.

Meanwhile, in the category of length of service, it shows the distribution of respondents' length of service, with the majority (30.7%) having a length of service of 6-10 years. The remaining respondents have a length of service of 1-5 years (25.4%) and >20 years (20.6%). Smaller groups (12.7%) have a length of service of 11-15 years and 16-20 years, while the majority (11.7%) are in the early to middle stages of their careers. The majority of respondents are relatively new or in the career development stage.

Then, in the education category, it shows that 73.5% of respondents have a Postgraduate education (S2), with 26.5% having a Doctorate (S3). This shows a highly educated population, with a smaller proportion of respondents having a Doctorate (S3), even though their level of education is higher.

In the functional position category, it shows that the majority of respondents in this study are in middle-level teaching positions, with 88 respondents having the status of Lecturer and 61 respondents having the status of Assistant Expert. Higher positions, such as Senior Lecturer and Professor, are only represented by a small number of respondents. The majority of lecturers are over 50 years old, which indicates an imbalance in their career development. Despite having a lot of experience, they face obstacles in achieving the position of senior lecturer or professor due to limitations in scientific publications, heavy administrative burdens, and a lack of doctoral education. This indicates the need for improvements in the lecturer career development system, such as increasing publications and reducing administrative burdens, so that lecturers can focus on doctoral development and studies.

Finally, in the rank/group category, it shows the distribution of ranks among the 189 respondents, with Penata Muda, III/b being the largest group with 93 respondents or 49.2%. Penata, III/c group is also significant with 54 respondents or 28.6%. Other groups, such as Nol Golongan and Pembina Utama, have smaller numbers. Most respondents are in the Penata Muda group, which shows the dominance of the lower groups.

**Table 3:** Description of Average Respondent Responses to Research Variables

Variables	Average	Category
Lecturer Performance (KD)	4.13	Tall
Intellectual Capital (IC)	4.21	Very high
Leadership Effectiveness	4.23	Very high
Organizational Communication	4.05	Tall
Organizational Support	4.68	Very high

Source: Data processing results, 2025.

Based on the results in Table 4, it is known that all research variables obtained an average score that was in the high to very high category. Lecturer performance (KD) was at an average of 4.13, which is included in the high category, indicating that the implementation of lecturers' duties within the Catur Dharma framework has generally gone well. The intellectual capital variable had an average of 4.21, and leadership effectiveness of 4.23, both of which were in the very high category, indicating that lecturers had adequate competence and were supported by effective leadership. Organizational communication also showed a high score of 4.05, indicating that information and coordination within the institution were running quite well. Interestingly, the organizational support variable obtained the highest score with an average of 4.68 and was classified as very high, reflecting that lecturers felt maximally supported by the institution in carrying out the tridharma duties and the values of Al Islam and Muhammadiyah. This finding indicates that, in general, the institutional environment of PTM in East Java is quite conducive to supporting the performance of lecturers based on Catur Dharma.

**Table 5:** Composite Reliability and AVE Values for Each Variable

Variables	Composite Reliability	AVE
Lecturer Performance (KD)	0.893	0.677
Intellectual Capital (IC)	0.904	0.703
Leadership Effectiveness	0.933	0.822
Organizational Communication	0.910	0.669
Organizational Support	0.883	0.717

Source: Data processing results, 2025.

Based on Table 5, all variables in this study have met the criteria for good reliability and convergent validity. The composite reliability value for all variables is above 0.70, with a range between 0.883 to 0.933, indicating that the instruments used have high internal consistency in measuring their respective constructs. Likewise, the Average Variance Extracted (AVE) values all exceed the minimum limit of 0.50, with the highest value in the leadership effectiveness variable of 0.822. This indicates that more than 50% of the indicator variance can be explained by the measured construct, so that the convergent validity of each construct has been adequately met. This finding strengthens the reliability of the measurement model in assessing the determinants of Catur Dharma-based lecturer performance at Muhammadiyah Universities in East Java.

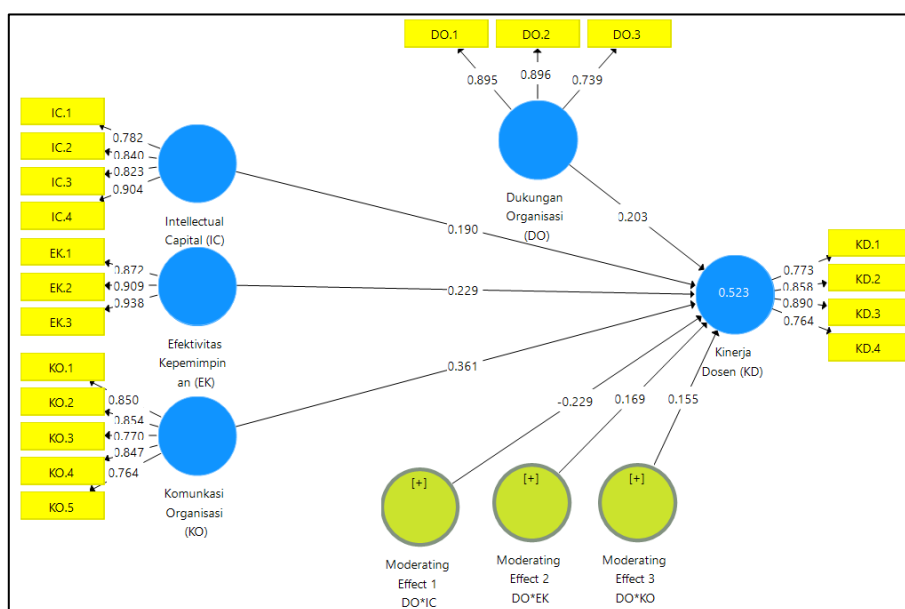
**Table 6:** Results of the Direct Influence Test of Exogenous Variables on Lecturer Performance

Influence Between Variables	Original sample (O)	t statistics ( O/STDEV )	P values
Intellectual Capital -> Lecturer Performance	0.190	2,089	0.010
Leadership Effectiveness -> Lecturer Performance	0.229	4,154	0,000
Organizational Communication -> Lecturer Performance	0.361	4,638	0,000
Organizational Support -> Lecturer Performance	0.203	2,586	0.010
Organizational Support x Intellectual Capital -> Lecturer Performance	-0.229	2,105	0.040
Organizational Support x Leadership Effectiveness -> Lecturer Performance	0.169	2,379	0.018
Organizational Support x Organizational Communication -> Lecturer Performance	0.155	2,084	0.038

Source: Data processing results, 2025.

Table 6 shows the results of the direct influence test and interactions between exogenous variables on lecturer performance at Muhammadiyah Universities in East Java. All the main influences tested showed statistical significance ( $p < 0.05$ ), indicating that each variable contributed to improving lecturer performance. Organizational communication gave the strongest influence with a coefficient value of 0.361 ( $t = 4.638$ ;  $p = 0.000$ ), followed by leadership effectiveness (0.229;  $t = 4.154$ ;  $p = 0.000$ ), organizational support (0.203;  $t = 2.586$ ;  $p = 0.010$ ), and intellectual capital (0.190;  $t = 2.089$ ;  $p = 0.010$ ).

In the moderation aspect, organizational support strengthens the influence of leadership effectiveness (0.169;  $t = 2.379$ ;  $p = 0.018$ ) and organizational communication (0.155;  $t = 2.084$ ;  $p = 0.038$ ) on lecturer performance. Conversely, the interaction between organizational support and intellectual capital shows a negative and significant influence on lecturer performance (-0.229;  $t = 2.105$ ;  $p = 0.040$ ), which indicates that in conditions of high organizational support, the influence of intellectual capital on lecturer performance tends to decrease. These results confirm the important role of each variable in the Catur Dharma-based research model and show the complexity of the dynamics of social and institutional relations in the PTM environment.

**Fig. 1:** Results of Organizational Support Moderation Interaction Test.

Source: Data processing results, 2025.

The results of the path diagram conversion in the structural model show that lecturer performance (KD) is significantly influenced by intellectual capital (IC), leadership effectiveness (EK), organizational communication (KO), and organizational support (DO), as well as by the interaction between each exogenous variable and organizational support.

Moderation interaction shows that organizational support strengthens the influence of leadership effectiveness and organizational communication on lecturer performance, as indicated by positive coefficient values (0.169 and 0.155), and is statistically significant. Conversely, organizational support weakens the influence of intellectual capital on lecturer performance, with a negative coefficient value of -0.229. These results indicate that the influence of lecturers' intellectual abilities on performance can decrease in the context of very high organizational support, perhaps due to greater dependence on the system than on individual initiative. These findings support the theoretical framework of Social Exchange Theory that social and reciprocal relationships between individuals and organizations can influence lecturers' work behavior in a complex manner in the Muhammadiyah Higher Education environment.

## 5. Discussion

The findings of this study indicate that all independent variables, namely intellectual capital, leadership effectiveness, and organizational communication, significantly influence the performance of Catur Dharma-based lecturers at Muhammadiyah Higher Education (PTM) in East Java. This finding is in line with the main theoretical framework used in this study, namely, Social Exchange Theory. (Blau, 1964), which explains that the reciprocal relationship between individuals and organizations will affect individual behavior and work results. In this context, lecturers who feel their intellectual capacity is recognized, are led effectively, and receive open communication, tend to show more optimal performance in carrying out the tasks of Catur Dharma—including teaching, research, community service, and Al-Islam Kemuhmadiyah. (Central Leadership of Muhammadiyah, 2012).

The influence of intellectual capital on lecturer performance supports the results of previous studies, which state that the knowledge, skills, and experience possessed by lecturers are intangible assets that can increase productivity and the quality of academic performance. However, this study also found that the influence of intellectual capital on performance will decrease when organizational support is in a high

condition, as reflected in the results of negative and significant moderation interactions. This indicates that in a very supportive environment, individual potential may not always be the main determinant of success, because institutional systems and structures can take over strategic roles previously filled by individual initiatives. This finding strengthens the argument that intellectual capital needs to be balanced with institutional policies that encourage lecturer independence and creativity.

The weakening effect of organizational support on intellectual capital can be interpreted through the lens of Resource Dependency Theory (Pfeffer & Salancik, 1978), which suggests that when organizations provide excessive support or resources, individuals may become dependent on institutional systems rather than leveraging their personal intellectual capacities. In the PTM context, high structural or bureaucratic support may reduce the sense of autonomy among lecturers, thereby lowering intrinsic motivation to innovate or engage in knowledge-sharing behaviors (Deci & Ryan, 2000). This condition reflects an over-centralization of decision-making in Muhammadiyah institutions, where collective norms and formal procedures can sometimes overshadow individual initiatives. Consequently, intellectual capital—although strong—may not translate effectively into performance outcomes if organizational culture prioritizes conformity over creativity (Schein, 2010; Nawaz et al., 2022). Therefore, optimal lecturer performance requires not only institutional support but also a culture that empowers academic freedom, trust, and intellectual experimentation within the value-based framework of PTM.

Leadership effectiveness has also been shown to contribute positively to lecturer performance, in line with this view. (Fiedler, 1967) Effective leaders can direct and motivate their subordinates to achieve common goals. Support from previous studies such as (Arina et al., 2023; Fikri et al., 2023; Yahya et al., 2023) Also strengthens these results, confirming that communicative, visionary, and fair leaders will encourage lecturers to be more productive in carrying out academic and organizational tasks. Organizational support also strengthens the influence of leadership effectiveness on lecturer performance, indicating that a supportive work environment can optimize the role of leadership in directing lecturer work behavior.

Other findings show that organizational communication is the most dominant factor in influencing lecturer performance. Good communication allows for a clear flow of information, strengthens coordination, and fosters a sense of ownership in the institution. This finding is consistent with the opinion of Pace and Faules (2018), who stated that effective communication is the main foundation in organizational management. This result is also supported by studies. (Borut et al., 2023; Manita et al., 2020; Tahir et al., 2017) This shows that clear communication increases job satisfaction and commitment, which ultimately impacts performance. The positive moderation of organizational support on the relationship between organizational communication and lecturer performance in this study also supports this argument. The role of organizational support is not only proven as a significant independent variable, but also as a moderator that strengthens or weakens the relationship between exogenous variables and lecturer performance. This proves that institutional support in the form of providing facilities, incentives, training, and appreciation plays an important role in mediating the influence of internal factors on lecturer work results. (Hilal et al., 2023; Maipita et al., 2023; Yusuf et al., 2023) . However, the negative influence of organizational support on the relationship between intellectual capital and performance indicates a saturation point in institutional interventions that can hinder individual potential if not accompanied by empowering. This reinforces the need for PTMs to balance structural support with empowerment-based management, where lecturers are trusted to make independent academic decisions and innovate within the Catur Dharma framework. Overregulation and procedural rigidity may otherwise suppress the creative utilization of intellectual capital, as seen in value-driven organizations with strong normative controls (Huselid, 1995; Akhtar et al., 2023).

An important aspect of novelty in this study is the integration of Al-Islam and Muhammadiyah variables in the framework of lecturer performance assessment, which expands the concept of Tri Dharma into Catur Dharma as regulated in the Muhammadiyah Central Leadership Guidelines Number 02/PED/I.0/B/2012. In this context, the study provides an empirical contribution to the development of an HR management approach based on Muhammadiyah's religious and ideological values, which have not previously been studied quantitatively. By including AIK values as performance indicators, this study also enriches academic discourse on lecturer assessment models in Islamic-based educational institutions. (Huda & Nursyamsiyah, 2024; Mukin, 2021; Nurmandi et al., 2019) .

The practical impact of this study is to provide a basis for the formulation of internal policies in PTM, especially in designing lecturer development programs that are oriented towards a balance between strengthening professional competence and internalizing AIK values. In the long term, these results can also encourage the creation of a more holistic lecturer performance evaluation system, reflecting the integration between academic competence and Islamic spirituality. In addition, these findings can be utilized by the Muhammadiyah PP Dikti Litbang Council to improve the policy of fostering and training academic cadres through programs such as 5000 Doctors and Your Research Grant.

However, this study has limitations that need to be considered. First, the scope of the study is limited to PTM in East Java, so that the generalization of the results on a national scale still requires further verification. Second, the quantitative approach used cannot fully capture the subjective dynamics in the internalization of AIK values, which can be explained more deeply through a qualitative approach. Therefore, it is recommended that further research combine mixed methods to gain a more comprehensive understanding of the context of lecturers' values and behavior in the Muhammadiyah environment.

Overall, the results and discussions in this study not only confirm the significant influence of internal and external factors on lecturer performance but also provide new insights into the importance of integrating Islamic values as an integral part of the lecturer performance evaluation system in value-based higher education, especially in the context of Catur Dharma PTM in Indonesia.

## 6. Conclusion

This study aims to analyze the factors that influence the performance of Catur Dharma-based lecturers at Muhammadiyah Higher Education (PTM) in East Java, by examining the direct influence of intellectual capital, leadership effectiveness, and organizational communication, as well as the role of organizational support as a moderating variable. Based on the results of the analysis and empirical findings, it can be concluded that all of these variables have a significant influence on lecturer performance, both directly and through interaction mechanisms. Intellectual capital has been proven to contribute to improving lecturer performance, indicating that the competence, knowledge, and experience possessed by lecturers are important elements in carrying out the tasks of Catur Dharma. Leadership effectiveness also has a positive influence, indicating that a visionary, communicative, and participatory leadership style can encourage lecturers to work more productively and be oriented towards results. Organizational communication is the most dominant factor, reflecting that openness of information, clarity of instructions, and interaction between institutional elements greatly determine the success of implementing the academic and ideological responsibilities of Muhammadiyah lecturers. Organizational support plays a dual role, as an independent factor that directly affects performance, and as a moderator that strengthens or weakens the influence of other variables. These findings underline the importance of a conducive work environment, a fair appreciation system, and institutional policies that empower lecturers. However, in certain contexts, excessive support can reduce individual initiative, especially in terms of utilizing intellectual capital, which is an important note

in developing HR management strategies. The main conclusion of this study confirms that improving lecturer performance cannot be separated from the synergy between individual capacity, institutional leadership, internal communication systems, and structural support. Moreover, this study emphasizes the importance of integrating Islamic and Muhammadiyah values as determining elements in measuring and developing lecturer performance in the PTM environment. The Catur Dharma-based approach used in this study not only broadens the scope of lecturer performance measurement but also presents a more contextual evaluation model that is in accordance with the characteristics of Muhammadiyah educational institutions. Therefore, the results of this study can be the basis for policy-making in designing strategies to improve lecturer quality in a sustainable and valuable manner. Beyond Muhammadiyah institutions, these findings can also serve as a reference for other Islamic and value-based universities such as Nahdlatul Ulama (NU) universities, pesantren-based higher education, and faith-affiliated private institutions, which share similar ideological foundations. The integration of intellectual capital and religious values can be adapted to each institutional context to strengthen moral leadership and human capital development across Indonesia's diverse educational landscape (Rahardjo, 2023). From a policy perspective, the results are also relevant to the national higher education agenda, particularly in supporting the Ministry of Education, Culture, Research, and Technology's (Kemendikbudristek) vision of "Merdeka Belajar–Kampus Merdeka" through value-based digital transformation. The integration of AI-driven performance evaluation systems, e-learning platforms, and data analytics can enhance the transparency and efficiency of lecturer assessment while maintaining the ethical and spiritual dimensions of Muhammadiyah's Catur Dharma (World Bank, 2023; UNESCO, 2024). This alignment positions PTM as a model for harmonizing religious identity with technological innovation in higher education governance.

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