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Exploring Competence as a Moderating Factor in the Relationship Between Training, Education, and Employee Performance

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ABSTRACT

This study examines the effects of education and training on employee performance and evaluates the moderating role of competency in the Islamic banking sector in the digital era. A quantitative approach was employed, with data collected through validated and reliable questionnaires from 100 employees of Bank Muamalat Indonesia Makassar. Data were analyzed using multiple linear regression and Moderated Regression Analysis (MRA). The results indicate that education and training have positive and significant effects on employee performance, with training demonstrating a stronger influence. These findings support Human Capital Theory, which emphasizes education and training as strategic investments to enhance productivity and professional capability. However, competency was not found to moderate the relationships between education, training, and performance, suggesting that individual competency does not necessarily strengthen the effectiveness of human capital investments. This finding highlights the importance of organizational systems and contextual alignment in optimizing human resource development. The study recommends that Islamic banking institutions implement structured education and value-based training to support sustainable performance. Future research is encouraged to involve broader samples across Islamic banking institutions, apply mixed-method approaches, and incorporate contextual factors such as religiosity or workplace spirituality to provide a more comprehensive understanding of employee development effectiveness.

Keywords: Employee Performance, Training Education, Islamic Banks

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INTRODUCTION

Technological advancements and the dynamics of the global economy have intensified competition among organizations, requiring them to operate more effectively and sustainably (Edler et al., 2023). In this context, human capital has emerged as a strategic factor that determines an organization's ability to build and sustain competitive advantage. Education plays a critical role as a primary instrument for enhancing the quality of human resources by shaping individuals' mindsets, intellectual capacity, and professional readiness. High-quality human resources not only support operational needs but also serve as key drivers of organizational transformation amid economic and technological disruption (Budimansyah, 2023). Organizations that are able to develop competencies, identify individual potential, and optimize employees' capabilities are more likely to achieve higher performance. Ultimately, employee performance becomes a key indicator of organizational success.

Nevertheless, the effectiveness of human resource development through education and training remains a subject of academic debate. Several studies have reported that education and

training significantly improve employee performance (Groth & Esmaeilikia, 2023). Similar findings were documented Martin et al. (2025), Silva & Duarte (2025) who emphasized that organizational investment in training generates positive outcomes for both individual and organizational performance. However, other studies suggest that education and training do not always lead to optimal performance unless they are supported by relevant competencies that are well aligned with job requirements (Basuki, 2023). Meta-analytic evidence further indicates that training effectiveness largely depends on individuals' ability to transfer acquired knowledge and skills into their work practices (Al-Romeedy et al., 2025). These divergent findings reveal empirical inconsistencies and suggest that the impact of education and training on performance is conditional rather than universally direct.

Limitations in prior research are also evident in the conceptual models employed. Most studies have positioned education and training as independent variables with a direct effect on performance, as demonstrated by Rumman et al. (2020), Pujianto (2024), and Yertas (2024) without considering contingency factors that may strengthen or weaken this relationship. Research on competency has generally treated it as a direct predictor of performance or as an outcome of human resource development processes (Al-Romeedy et al., 2025; Monteiro et al., 2020; Tan et al., 2025). Such approaches have not sufficiently explained the potential role of competency as a moderating variable that enhances the effectiveness of education and training. This limitation indicates a theoretical gap concerning the mechanisms through which human resource development investments translate into optimal performance outcomes.

A research gap also exists in terms of contextual scope. Most previous studies have been conducted in conventional organizations that primarily emphasize technical capabilities and work productivity (Garaika, 2020; Fitriansyah & Indiyati, 2025; J Sitepu et al., 2022). Empirical research examining the effectiveness of education and training within value-based organizations remains limited, particularly in the Islamic banking industry (Gajenderan et al., 2023; Musfira et al., 2022). The distinctive characteristics of Islamic organizations require the integration of professional competence, moral integrity, and spiritual awareness. These value-based dimensions may influence the relationship between human resource development and employee performance, thereby necessitating more context-specific empirical investigation.

PT Bank Muamalat Indonesia KCU Makassar has implemented various human resource development initiatives, including the Banking Staff Program (BSP) and periodic refresher training. However, the effectiveness of these programs has not been empirically evaluated, particularly regarding the extent to which employee competency strengthens the impact of education and training on performance. The increasing transition of employees from conventional banks to Islamic banking institutions also reflects an adaptation process that involves not only technical competencies but also the alignment of value orientation and spiritual awareness.

From an Islamic perspective, competency is viewed as an integration of professional capability and moral integrity. Surah Al-Qasas (28:26) emphasizes the importance of the qualities of *qawiyy* (competent) and *amin* (trustworthy), while Surah As-Shaff (61:4) highlights the significance of organized and harmonious work. These principles suggest that human resource development in Islamic banking should integrate technical, ethical, and spiritual dimensions, a view that is consistent with the arguments presented by Vasantha et al. (2025) and Rana & Shaukat (2016). Accordingly, human resource management practices in Islamic-based organizations need to combine professional competencies with moral values, Islamic work ethics, and spiritual internalization as a foundation for improving employee performance and work behavior.

Empirically, observations at Bank Muamalat indicate an increasing trend of employee transitions from conventional banks to Islamic financial institutions, suggesting that competency transformation is influenced not only by technical adaptation but also by value orientation and spiritual awareness. However, empirical studies examining the role of competency as a moderating variable in the relationship between education, training, and employee performance remain limited, particularly within the Islamic banking context (Gajenderan et al., 2023; Musfira et al., 2022). The distinctive characteristics of Sharia-based

work systems, along with the diverse backgrounds of employees, may significantly affect the effectiveness of human resource development programs. Therefore, this study seeks to address this gap by analyzing the effects of education and training on employee performance and by evaluating the moderating role of competency at PT Bank Muamalat Indonesia KCU Makassar.

Based on these gaps, this study aims to analyze the effects of education and training on employee performance and to examine the moderating role of competency at PT Bank Muamalat Indonesia KCU Makassar. The novelty of this research lies in investigating competency as a mechanism that potentially strengthens the effectiveness of education and training within the context of a value-based organization.

METHOD

This study employed a descriptive quantitative approach aimed at analyzing the effects of education and training on employee performance, with competency enhancement examined as a moderating variable. The research was conducted at Bank Muamalat Indonesia in Makassar, South Sulawesi. The study population comprised all 100 permanent employees of the bank's main branch in Makassar, including those working in the financing, operations, services, and administrative departments. A non-probability sampling technique was applied using a saturated sampling method, in which all members of the population were included as research respondents (Yaqub et al., 2024).

Data collection in this study involved both primary and secondary data sources (Roche et al., 2026). Primary data were obtained through the distribution of questionnaires to all respondents, as recommended in survey-based research (Dillon & Mensah, 2024; Masselus & Fiala, 2024). The questionnaire was developed based on the indicators of each research variable and was pilot-tested to ensure its validity and reliability (Bastian et al., 2025; Martínez Coronado et al., 2023; Wang et al., 2026).

This study employed a Likert scale to measure respondents' perceptions of education, training, competency, and employee performance (Memmedova & Ertuna, 2024; Yamashita, 2022), The use of a Likert scale was considered appropriate as it enables the measurement of attitudes and perceptions based on respondents' levels of agreement with statements representing the indicators of each variable. The scale was constructed on the premise that variable scores are derived from the aggregation of responses to items reflecting the underlying constructs (Bajaj & Kaur, 2024; Nima et al., 2020; Ponchio et al., 2023). Data analysis began with descriptive statistics to summarize respondent characteristics and data distribution. Prior to examining the relationships among variables, validity and reliability tests were conducted for all questionnaire items, followed by classical assumption tests, including normality, multicollinearity, and heteroscedasticity (Berenguer-Rico & Nielsen, 2023; Croucher et al., 2025; Ford et al., 2025). Hypotheses were tested using F-tests and t-tests, while the moderating role of competency was examined through Moderated Regression Analysis (Velumani et al., 2022).

RESULT AND DISCUSSION

Description of Respondent Characteristics

As the pioneer of Islamic banking in Indonesia, Bank Muamalat Indonesia has consistently demonstrated its commitment to developing products and services grounded in Islamic principles, including efforts to enhance the quality of its human resources. Through various training programs and internal policies designed to improve employee competence, it is essential to examine the extent to which education and training contribute to employee performance. Accordingly, the following section presents the empirical findings and discussion reflecting the roles of these variables in supporting work effectiveness within Bank Muamalat Indonesia, Makassar. Questionnaires were distributed to respondents who met the sampling criteria, specifically active employees of Bank Muamalat Indonesia. The questionnaire also included basic respondent information to capture relevant demographic characteristics.

Table 1. Description of Respondents' Characteristics

No	Characteristics	Description	Percentage
1	Age	18-30 years	22%
2		31-45 years	56%
3		46-60 years	22%
4	Gender	Male	52%
5		Female	48%
6	Education Level	Diploma (DII)	2%
7		Bachelor's Degree (S1)	94%
8		Master's Degree (S2)	4%

The researcher collected demographic data from 100 employees of Bank Muamalat Indonesia, Makassar Branch, who participated as respondents in this study. The employees were categorized into three age groups: 22 individuals (22%) were aged between 18 and 30 years, 56 individuals (56%) were between 31 and 45 years, and 22 individuals (22%) were aged between 46 and 60 years. In terms of gender distribution, 52 respondents (52%) were male, while 48 respondents (48%) were female. Regarding educational attainment, 2 respondents (2%) held a Diploma (D3) degree, 94 respondents (94%) possessed a Bachelor's (S1) degree, and 4 respondents (4%) held a Master's (S2) degree.

Validity Test

Validity testing is essential to determine the accuracy of a measurement instrument—such as a questionnaire—in assessing what it is intended to measure. This test ensures that the instrument accurately captures the construct of interest rather than measuring unrelated variables. According to Hair et al. (2021) validity reflects the extent to which a construct accurately represents the theoretical concept it is intended to measure; hence, a valid instrument produces precise and reliable data.

The validity test for the Education variable (X1) was conducted to verify whether each statement item effectively measured the intended construct. The results indicated that all items had r-count values exceeding the r-table value of 0.195 at a 5% significance level, with a sample size of 100 (df = 98). The r-count values ranged from 0.641 to 0.912, confirming that all statement items (X1.1–X1.4) were valid. These findings suggest that the indicators within the Education variable appropriately represent the research construct and are suitable for inclusion in subsequent analyses.

Table 2. Results of the Validity Test for the Education Variable (X_1)

No.	r-count	r-table	Description
X1.1	0.912	0.195	Valid
X1.2	0.901	0.195	Valid
X1.3	0.641	0.195	Valid
X1.4	0.665	0.195	Valid

The validity test results for the Training variable indicate that all statement items yielded r-count values greater than the r-table value (0.195). The r-count values ranged from 0.237 to 0.828, confirming that all items were valid. Consequently, each indicator within the variable was deemed to accurately represent the intended construct, thereby affirming the suitability of the research instrument for subsequent data collection.

Table 3. Results of the Validity Test for the Training Variable (X_2)

No.	r-count	r-table	Description
X2.1	0.423	0.195	Valid

X2.2	0.237	0.195	Valid
X2.3	0.680	0.195	Valid
X2.4	0.551	0.195	Valid
X2.5	0.604	0.195	Valid
X2.6	0.413	0.195	Valid
X2.7	0.575	0.195	Valid
X2.8	0.623	0.195	Valid
X2.9	0.549	0.195	Valid
X2.10	0.828	0.195	Valid
X2.11	0.619	0.195	Valid

The validity test for the Employee Performance variable (Y) was conducted to ensure that each statement item accurately measured the intended construct. The results revealed that all r-count values exceeded the r-table benchmark of 0.195 at a 5% significance level with a sample size of 100 (df = 98). The r-count values ranged from 0.280 to 0.664, indicating that all statement items (Y1.1–Y1.11) were valid. This finding confirms that all indicators of the Employee Performance variable effectively represent the research construct and are therefore suitable for inclusion in subsequent analytical procedures.

Table 4. Validity Test Results of the Employee Performance Construct (Y)

No.	r-count	r-table	Description
Y1.1	0.529	0.195	Valid
Y1.2	0.584	0.195	Valid
Y1.3	0634	0.195	Valid
Y1.4	0.621	0.195	Valid
Y1.5	0.571	0.195	Valid
Y1.6	0.664	0.195	Valid
Y1.7	0.430	0.195	Valid
Y1.8	0.280	0.195	Valid
Y1.9	0.638	0.195	Valid
Y1.10	0.570	0.195	Valid
Y1.11	0.544	0.195	Valid

The validity test for the Competence Enhancement variable (Z) was conducted to assess the extent to which each statement item accurately measured the intended construct. The test results indicated that all r-count values exceeded the r-table threshold of 0.195 at the 5% significance level with a sample size of 100 (df = 98). The r-count values ranged from 0.496 to 0.643, confirming that all statement items (Z1–Z8) were valid. Accordingly, all indicators within the Competence Enhancement variable were found to effectively represent the research construct and are therefore deemed appropriate for inclusion in subsequent analyses.

Table 5. Validity Test Results of the Competence Enhancement Construct (Z)

No.	r-count	r-table	Description
Z.1	0.496	0.195	Valid
Z.2	0.502	0.195	Valid
Z.3	0.629	0.195	Valid
Z.4	0.643	0.195	Valid
Z.5	0.534	0.195	Valid
Z.6	0.591	0.195	Valid

Z.7	0.566	0.195	Valid
Z.8	0.551	0.195	Valid

Reliability Test

The reliability test is employed to assess the extent to which a measurement instrument (such as a test or questionnaire) produces consistent, stable, and dependable data when administered repeatedly under similar conditions. According to Correa et al. (2025) reliability refers to the degree of confidence in a research instrument, indicating that the instrument is well-designed and capable of generating consistent results across repeated measurements. The importance of this test lies in its ability to demonstrate that the instrument can be trusted to yield comparable results each time it is used, without being significantly influenced by irrelevant external factors such as respondents' emotions or variations in interpretation (Deltomme et al., 2023).

Based on the results presented in the table above, all variables demonstrated Cronbach's Alpha values exceeding the threshold of 0.60. Specifically, the Education variable recorded an α value of 0.767, Training 0.792, Employee Performance 0.803, and Competence Enhancement 0.693. These findings indicate that all variables are considered reliable, signifying that the research instrument exhibits satisfactory internal consistency and is therefore suitable for subsequent analytical procedures.

Table 6. Variable Reliability Test Results

Variable	Cronbach Alpha (α)	Description
Education	0.767	Reliable
Training	0.792	Reliable
Employee Performance	0.803	Reliable
Competency Improvement	0.693	Reliable

Normality Test

According to scholars such as Arredondo Montero (2026) and Roddis et al. (2019), the normality test is conducted to examine whether the data in a regression model follow a normal distribution—typically focusing on the residuals (the difference between the observed and predicted values) rather than on individual variables. The primary purpose of this test is to verify that the residuals conform to a normal distribution, thereby ensuring the validity and reliability of the statistical model employed (Raïssi, 2018). The results of the analysis indicate that:

Tabel 7. Normality Test Results

Variable	Unstandardized Residual
N	100
Normal Parameters[a,b] Mean	,0000000
Std. Deviation	2,36125006
Most Extreme Absolute	,106
Differences Positive	,106
Negative	-,068
Kolmogorov-Smirnov Z	,748
Asymp. Sig. (2-tailed)	,631

Based on the results of the normality test presented in the table, the One-Sample Kolmogorov–Smirnov Test yielded an Asymp. Sig. (2-tailed) value of 0.631. Since this

significance level exceeds the threshold of 0.05, it can be concluded that the residual data are normally distributed. Therefore, the normality assumption is satisfied, indicating that the dataset is suitable for subsequent parametric statistical analyses, such as linear regression.

Multicollinearity Test

According to Morales-Oñate & Morales Oñate (2023), a multicollinearity test is conducted to determine whether there is a high degree of correlation among the independent variables within a multiple linear regression model. The purpose of this test is to identify the presence of a strong linear relationship between independent variables that could distort the regression estimates (Seyedrahimi-Niaraq et al., 2025). As explained by Sundus et al. (2022), a Variance Inflation Factor (VIF) value below 10 indicates that multicollinearity is not a significant concern among the independent variables. Conversely, a VIF value exceeding 10 suggests the presence of a serious multicollinearity problem. The results of the analysis in this study are presented as follows:

Table 8. Results of the Multicollinearity Test

Variabel	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-3.816	5.993		-0.637	0.527		
Education	0.368	0.148	0.231	2.492	0.016	0.990	1.010
Training	0.955	0.123	0.718	7.762	0.000	0.990	1.010

The results of the multicollinearity test indicate that the Tolerance values for the Education and Training variables are both 0.990, with corresponding VIF values of 1.010. Since the Tolerance values exceed 0.10 and the VIF values are below 10, it can be concluded that there is no evidence of multicollinearity within the model. Therefore, the Education and Training variables can be included simultaneously in the regression analysis, as they do not exhibit strong mutual influence.

Heteroskedasticity Test

The heteroskedasticity test is conducted to determine whether the regression model exhibits non-constant variance of the residuals (Carlin & Moreno-Betancur, 2025). This test is essential to ensure the accuracy and reliability of the regression model. When heteroskedasticity is present, remedial measures such as data transformation (e.g., logarithmic or square-root transformation) or the application of robust regression methods such as Generalized Least Squares (GLS) or Weighted Least Squares (WLS) can be employed (de Oliveira et al., 2021). In this study, the Glejser method was used to detect heteroskedasticity by examining the effect of the independent variables on the absolute residual values.

Table 9. Results of the Heteroskedasticity Test (Glejser Method)

Variable	Koefisien (B)	Std. Error	t	Sig.	Description
Education	-0.041	0.087	-0.473	0.638	No indication of heteroscedasticity
Training	0,077	0,073	0,153	0,295	No indication of heteroscedasticity

The results of the heteroskedasticity test using the Glejser method indicate that the significance values for the Education and Training variables are 0.638 and 0.295, respectively—both exceeding the 0.05 threshold. This finding suggests that no symptoms of heteroskedasticity are present in the regression model. Consequently, the model satisfies the assumption of

homoskedasticity, implying that the residual variance remains constant across all levels of the predictor variables.

Partial Test (t-Test)

This test is employed to examine the individual effect of each independent variable on the dependent variable within a regression model (Aboramadan, 2022). The partial t-test is a statistical procedure used to assess the influence of each independent variable separately, assuming that all other variables remain constant (Paramsamy Kannan & Barile, 2026). In this study, the t-test was applied to evaluate the extent to which each independent variable independently affects the dependent variable within the regression framework.

Table 10. Partial Test (t-Test)

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	-3.816	5.993		-,637	0,527
Education	0.368	0.148	0,231	2,492	0,016
Training	0.955	0.123	0,718	7,762	0,000

Based on the results of the partial t-test presented in the Coefficients table, the Education variable has a significance value of 0.016, while the Training variable has a significance value of 0.000 both of which are below the 0.05 threshold. This indicates that Education and Training each have a statistically significant effect on Employee Performance. The regression coefficient for Education is 0.368, implying that a one-unit increase in Education leads to a 0.368-unit improvement in Employee Performance, assuming other variables remain constant. Meanwhile, Training exhibits a stronger influence, with a regression coefficient of 0.955, reflecting a greater contribution to Employee Performance. Therefore, it can be concluded that both independent variables have a positive and significant effect on Employee Performance when considered individually, with Training demonstrating the most dominant impact.

Simultaneous Test (F-Test)

The F-test is a statistical procedure used to compare variances between two samples or to assess the simultaneous influence of multiple independent variables on a single dependent variable (Mardiatmoko, 2020). In research, the F-test serves to evaluate whether all independent variables collectively exert a significant effect on the dependent variable within a linear regression model. The results of this test are instrumental in determining the overall goodness-of-fit and validity of the regression model.

Table 11. Simultaneous Test (F-Test)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	413,120	2	206,560	35,536	0,000[a]
Residual	273,200	47	5,813		
Total	686,320	49			

Based on the results of the simultaneous F-test presented in the ANOVA table, the F-value is 35.536 with a significance level (Sig.) of 0.000, which is far below the 0.05 threshold. This indicates that, collectively, the independent variables Education and Training have a statistically significant influence on the dependent variable, Employee Performance. Therefore, the constructed regression model is deemed valid and appropriate for explaining variations in employee performance. These findings suggest that the combined contribution of Education and Training to improving employee performance is both substantial and reliable within the context of this analysis.

Coefficient of Determination Test

The Coefficient of Determination test aims to measure the proportion of variance in the dependent variable (Y) that can be explained by the independent variable(s) (X) within a regression model (Andrade, 2024). This test is essential for assessing how well the regression model accounts for variations in the dependent variable (Gudmestad & Metzger, 2025). Through this analysis, researchers can evaluate the model's explanatory power and determine the extent to which it fits the empirical data used in the study.

Table 12. Coefficient of Determination Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,776[a]	0,602	0,585	2,411

Based on the results of the Coefficient of Determination test, the R Square value is 0.602, indicating that 60.2% of the variation in the dependent variable can be explained by the independent variables in this regression model. The remaining 39.8% is attributed to other factors outside the model that were not examined in this study. The Adjusted R Square value of 0.585 reflects the adjustment for the number of predictors in the model, which still demonstrates a relatively strong explanatory power. The Standard Error of the Estimate is 2.411, indicating the average deviation of the observed data from the regression line. A smaller value of this statistic suggests a better model fit in predicting the dependent variable. Overall, the regression model employed in this study exhibits a reasonably strong predictive capability.

Moderation Test of Competence on the Effect of Education on Employee Performance

Table 13. R Square Test for Education Moderation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,571[a]	0,326	0,282	3,171

Based on Table, the R Square value of 0.326 indicates that the model incorporating the moderating variable of Education explains 32.6% of the variation in the dependent variable, while the remaining 67.4% is influenced by factors outside the model. The Adjusted R Square value of 0.282 reflects a moderate level of adjustment for the number of predictors included in the model. Meanwhile, the Standard Error of 3.171 suggests a relatively high level of prediction error, implying that the moderating effect of Education has not yet optimally enhanced the model's predictive power.

Moderation Test of Competence on the Effect of Training on Employee Performance

Table 14. R Square Test for Training Moderation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,783[a]	,614	,589	2,401

Based on Table, the R Square value of 0.614 indicates that the model incorporating the moderating effect of Training explains 61.4% of the variation in the dependent variable, while the remaining 38.6% is influenced by other factors outside the model. The Adjusted R Square value of 0.589 signifies a relatively stable model strength after accounting for the number of predictors. Moreover, the Standard Error of 2.401 reflects a relatively low level of prediction

error, suggesting that the inclusion of Training as a moderating variable provides a significant contribution to strengthening the overall model.

The purpose of the Results and Discussion is to state your findings and make interpretations and/or opinions, explain the implications of your findings, and make suggestions for future research. In the Result section, summarize the collected data and the analysis performed on those data relevant to the issue that is to follow. The Result should be clear and concise. It should be written objectively and factually, and without expressing personal opinion. It includes numbers, tables, and figures (e.g., charts and graphs). Number tables and figures consecutively in accordance with their appearance in the text.

Discussion

The Influence of Education on Employee Performance

Based on the results of the partial t-test presented in Table 7, the Education variable obtained a regression coefficient of 0.368, a t-value of 2.492, and a significance level (Sig.) of 0.016. Since the significance value is lower than the threshold of $\alpha = 0.05$, it can be concluded that Education has a positive and statistically significant effect on Employee Performance. This finding implies that improvements in employees' educational background are accompanied by corresponding increases in their work performance.

These results highlight the pivotal role of education in enhancing employee performance at Bank Muamalat Makassar. Education helps foster more systematic thinking, strengthens analytical abilities, and broadens job-related knowledge, all of which contribute to greater work effectiveness and overall organizational productivity. This finding is consistent with the Human Capital Theory proposed by Caire & Becker (1967) and supported Hao et al. (2021), which posits that education represents a crucial investment in improving individual productivity. Furthermore Moorthy et al. (2024), in Organizational Behavior reinforces this view by emphasizing that education is one of the key individual factors influencing behavior and performance within an organization.

The Influence of Training on Employee Performance

Based on the results of the partial t-test presented in Table 7, the Training variable obtained a regression coefficient of 0.955, a t-value of 7.762, and a significance level (Sig.) of 0.000. Since the significance value is far below the threshold of $\alpha = 0.05$, it can be concluded that Training has a positive and statistically significant effect on Employee Performance at Bank Muamalat Makassar. This finding implies that the higher the quality and effectiveness of the training provided to employees, the greater the level of performance they are able to achieve.

These findings illustrate that well-designed and effectively implemented training programs can enhance employees' competencies, skills, and understanding in performing operational tasks within Islamic banking institutions. Training not only improves technical capabilities but also reinforces comprehension of Islamic values and work ethics that form the foundation of Bank Muamalat Makassar's organizational culture. This study aligns with the findings of Ahmed et al. (2025) whose research demonstrated that systematically planned and job-relevant training programs significantly enhance employees' technical competencies while simultaneously strengthening their spiritual and ethical orientation within Islamic financial institutions. Similarly, Ibrahim et al. (2024) in developing the Talent Development Model for a Career in Islamic Banking, emphasized that structured training and career development initiatives are essential for cultivating competent and integrity-driven human resources in the Islamic banking industry.

The Influence of Education on Employee Performance Moderated by Competence

The third hypothesis proposed that competence moderates the relationship between education and employee performance. However, based on the results of the interaction test using Moderated Regression Analysis (MRA), the interaction between Education and Competence was found to be statistically insignificant. This indicates that competence neither

strengthens nor weakens the relationship between education and performance, leading to the rejection of the third hypothesis.

These findings suggest that while education and competence individually influence performance, their interaction within a moderating framework does not yield a significant effect. This presents a novel insight in the current study, implying that an increase in employee competence does not necessarily enhance the impact of education on performance. One plausible explanation is the lack of alignment between employees' educational backgrounds and the specific competencies required for their current job roles.

This finding diverges from the competency model proposed by Tsaknis & Sahinidis (2025) which emphasizes the critical alignment between education, skills, and behavioral values in achieving superior performance. Furthermore, the result contrasts with Basuki (2023), who found that competencies developed through training and work experience can strengthen the influence of education on performance particularly when such competencies are relevant and well internalized within the organizational context.

Nevertheless, the present study suggests that competence should be treated as an independent or direct variable, rather than a moderating one. In other words, even if an employee possesses a high level of competence, it does not necessarily amplify the effect of educational background on performance unless it is supported by a structured and contextually aligned organizational system.

The Influence of Training on Employee Performance Moderated by Competence

Hipotesis The fourth hypothesis posited that competence moderates the relationship between training and employee performance. However, the results of the Moderated Regression Analysis (MRA) revealed that the interaction between Training and Competence was statistically insignificant. Consequently, the fourth hypothesis is rejected, indicating that competence does not moderate the effect of training on employee performance.

These findings suggest that although training is designed to enhance job-related skills, the existing level of employee competence has not been sufficient to strengthen this relationship. This implies that improvements in competence have not fully met expectations in reinforcing the outcomes of training. In fact, within this context, competence appears to slightly weaken the linkage between training and performance. Therefore, competence is better conceptualized as an independent variable rather than a moderating one.

This finding is consistent with the study by Sari et al. (2025) which revealed that training does not moderate the relationship between competence and job satisfaction. In other words, training programs that are not tailored to employees' specific needs tend to lose their effectiveness, even when employees possess a certain level of competence. Conversely, the study by Cabarcos et al. (2022) and Naseem & Azam (2025) demonstrated that strong leadership can effectively moderate the relationship between training and performance. This underscores that the success of training initiatives is heavily influenced by managerial roles in designing, motivating, and guiding the human resource development process.

Ultimately, effective training should not only aim to enhance technical competencies but also take into account behavioral attributes, personality, and job readiness. An integrated and contextually relevant development approach contributes to the improvement of a company's intangible assets, such as employee expertise and loyalty, which in turn directly enhances the organization's overall competitiveness.

As discussed earlier, education and training were found to have a positive and significant effect on employee performance, with training demonstrating a stronger influence than formal education. This finding is consistent with prior studies that identify organizational investment in training and human resource development as a key determinant of individual and organizational performance. Research by Ismael et al. (2021), K & S (2024) and Gunawan et al. (2024) indicates that training significantly enhances employees' knowledge, skills, and work effectiveness. Similar results were reported by Al-Neimat et al. (2023) who emphasized that job-relevant training directly improves productivity through the effective transfer of learning to the workplace. The consistency of these findings may be attributed to the shared theoretical

foundation of Human Capital Theory, which conceptualizes education and training as strategic investments for enhancing employees' productive capacity.

The findings of this study are also consistent with research in the service and financial sectors, which indicates that structured training aligned with job requirements has a greater impact than formal education. Ismael et al. (2021) and Al-Neimat et al. (2023) found that the effectiveness of training in improving performance is strongly influenced by the alignment between training content and job demands, as well as organizational support. In the context of Islamic banking, this consistency can be explained by the nature of the work, which requires specific operational competencies and procedural knowledge. Consequently, practical and job-oriented training plays a more critical role than formal educational background in enhancing employee performance.

However, this study found that competency does not function as a moderating variable in the relationship between education and training and employee performance. This finding contrasts with the results reported Basuki (2023) and competency models proposed by Portuguez-Castro & Ramírez-Montoya (2025) and Gomes et al. (2022) which suggest that relevant competencies can strengthen the effects of education and experience on performance. The discrepancy in findings may be attributed to several factors. First, there may be a misalignment between employees' existing competencies and the specific requirements of their job roles, limiting the role of competency as a strengthening mechanism. Second, differences in organizational context may also explain the variation in results. Most prior studies were conducted in conventional organizations with well-integrated competency development systems, whereas in the context of this study, the integration between competency development, education, and training may not yet be fully optimized.

In addition, differences in research methodology and respondent characteristics may also account for the variation in findings. Previous studies have often employed cross-industry samples or data from large organizations with well-established talent management systems, whereas this study focuses on a single organizational unit within the Islamic banking sector, characterized by a value-based work culture grounded in religious principles Budhwar et al. (2019) demonstrated that human resource management practices in Islamic-oriented organizations are strongly influenced by values, ethics, and spirituality, which may alter the mechanisms linking human resource development to performance. This contextual condition may explain why competency in the present study functions more as a direct determinant rather than as a moderating variable.

Overall, the findings of this study reinforce the existing literature on the critical role of education and training in enhancing employee performance, while also offering a novel contribution by demonstrating that competency does not always function as a contingency factor. These results suggest that the effectiveness of competency in strengthening the impact of human capital investments is highly dependent on organizational context, the integration of human resource development systems, and the specific job characteristics within the Islamic banking environment.

The novelty of this study lies in examining competency as a moderating variable in the relationship between education, training, and employee performance within the context of a value-based organization. Unlike most prior studies that position competency as an independent variable or as an outcome of human resource development, this study demonstrates that competency does not automatically strengthen the effects of education and training. Instead, it functions more as a direct determinant whose effectiveness depends on its alignment with job requirements and organizational systems. Furthermore, this study provides contextual contributions by presenting empirical evidence from the Islamic banking sector, which requires the integration of professional capability, operational compliance, and the internalization of ethical and spiritual values. Accordingly, this research enriches the human resource development literature from both contingency and value-based perspectives, while offering practical implications for organizations in designing more targeted, context-sensitive employee development strategies aligned with the characteristics of their work environment.

This study demonstrates that competency does not function as a moderating variable in the relationship between education, training, and performance, but rather as a direct determinant. This finding challenges the prevailing assumption in the human resource development literature that positions competency as a factor that strengthens the effectiveness of human capital investments. The study advances theoretical understanding through a contingency perspective that emphasizes the alignment between competency, job demands, and organizational systems. In addition, it provides empirical evidence from the Islamic banking context and offers practical implications for designing more context-sensitive and value-based human resource development strategies.

This study has several limitations that should be acknowledged. The data were collected using self-reported questionnaires, which may introduce subjective bias. In addition, the study was conducted within a single organization with a limited number of respondents, thereby restricting the generalizability of the findings to other organizational contexts or sectors. Future research is therefore encouraged to expand the sample by involving multiple Islamic banks or branches across the South Sulawesi region in order to enhance sample size and strengthen the generalizability of the results. Subsequent studies may also employ a mixed-methods approach to obtain a more comprehensive understanding of the findings. Furthermore, the inclusion of contextual variables such as religiosity or workplace spirituality is recommended to enrich the examination of value-based human resource development within the Islamic banking sector.

CONCLUSION

Based on the findings of this study, evidence indicates that education and training have a positive and significant effect on the performance of employees at Bank Muamalat Indonesia Makassar. These results suggest that higher levels of employee education can enhance performance through the development of analytical thinking, problem-solving abilities, and a more professional understanding of Islamic banking tasks. This finding reinforces the assumption that education serves as an essential investment in improving both individual and organizational productivity. Similarly, training has proven to be the most dominant factor in enhancing employee performance. Well-structured and needs-oriented training programs not only strengthen technical skills but also deepen the understanding of Islamic values that constitute the core character of Islamic banking. Therefore, training that integrates spiritual values with job competence is the key to the successful development of human resources in Islamic banking institutions. However, the study also reveals that competence does not function as a moderating variable in the relationship between education or training and employee performance. This serves as a novelty of the study, indicating that the effectiveness of education and training is determined not only by personal competence but also by the alignment of the human resource development system and organizational support.

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