Assessing the Impact of Principal Leadership and Teacher Performance on Educational Quality: The Role of TQM as a Mediator

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ABSTRACT. This research investigates the influence of the principal's leadership and teacher performance on the quality of education and the mediating role of TQM in this relationship. Random sampling techniques were used to sample 50 MA Darul Falah Sukorejo Ponorogo teachers. Data collection was carried out using a questionnaire consisting of a 5-point Likert scale. PLS-SEM analysis was used to analyze data and test the conceptual model. The research results show that teacher performance significantly improves education quality but not principal leadership's influence. Apart from that, TQM mediates in increasing the influence of the principal's leadership on the quality of education ($\varrho=0.008$) but not on the influence of teacher performance ($\varrho=0.703$). The research implications emphasize the development of organizational culture supported by TQM and teacher professional training and development. So, building an organizational culture that supports TQM principles is essential. It involves a commitment from all levels of management, including principals and administrative staff, to prioritize educational quality and continuous improvement. Provide regular training to teachers on TQM concepts, practices, and strategies for implementing them in teaching and learning contexts.

Keywords: *Educational quality, principal leadership, teacher performance, TQM*

INTRODUCTION

Education is the foundation for a nation's social, economic, and cultural development. In changing times and the demands of global competition, the quality of education is crucial to ensuring the progress and sustainability of a country. Principal leadership and teacher performance have been recognized as two main factors influencing the quality of education (Li et al., 2023). The effective leadership of a Principal not only influences the school culture but also leads to the establishment of a clear vision, proper management of resources, and development of committed staff. On the other hand, teacher performance plays a central role in implementing the curriculum, delivering quality learning, and fostering good relationships with students (Ashraf & Ahmed, 2022). However, in efforts to improve the quality of education, the Total Quality Management (TQM) approach has emerged as an essential framework. TQM emphasizes the importance of quality in all aspects of the educational process, from planning to evaluation, and invites us to view education as an integrated system. In this context, TQM plays a mediating role that facilitates interactions between the principal's leadership, teacher performance, and the outcome of educational quality

(Benzaquen & Charles, 2022). Although many studies have examined the influence of principal leadership and teacher performance on educational quality, only a few have considered the mediating role of TQM in this relationship. Therefore, this research aims to explore the extent to which TQM can be an essential link between Principal leadership, teacher performance, and educational quality.

Education is necessary for a country to progress because human resources are its central axis. Developments in the field of education are very influential in the development of the world. The rapid progress of IT has had positive and negative impacts on the world of education (Badrusalam, 2021). The reality is that the quality of education in Indonesia is getting lower, which means that the world of education is being hit by change because it is required to solve local and global problems very quickly. An educational institution is declared quality if it produces competent students, has good morals so that they can become democratic citizens and are responsible for creating a dignified country. Educational institutions need quality education, teachers who perform well, and professional school principal leadership (Chen, 2024). Improving the quality of education is an integrated process in improving the quality of human resources. The quality of education in Indonesia must improve to contribute moral and spiritual values to all students, which will become their provision for national life (Dwaikat, 2020). Improving the quality of human resources is very important in educational institutions because it is integrated with improving the quality of education. In particular, government and private institutions play a role in realizing improvements in the quality of educational institutions through several methods, including improving and developing curricula and evaluation constellations and holding teacher workshops related to performance improvement strategies (Cahapay & Ii, 2021).

The development of the times has brought changes to human lifestyles, which require humans to be more competitive. Likewise, educational institutions must be increasingly competitive in winning public trust by designing brain images that are attractive to Gen Z. The role of the principal as a manager is very influential; apart from that, the teacher's performance and commitment to helping the principal to realize the goals of the institution he leads also has a strong influence (Fan, 2022). Regarding quality, institutions must implement an integrated quality management approach, which is often called total quality management. The concept of total quality management philosophically emphasizes consistency in continuous improvement for customer satisfaction (García-Alcaraz et al., 2019). In improving the quality of madrasah education, superior quality is needed from the principal's leadership and good teacher performance; apart from that, you must also implement TQM as is done by the MA Darul Falah which has many advantages, but many problems must be researched, among others, there are 50 % of teachers who have not graduated from S1 (service teachers who are recruited from alumni), many teachers who are only on duty (not permanent), the leadership of school principals is not yet processional because they still depend on foundations, the implementation of the quality management system is not yet optimal, the achievement of primary competitions is not yet stable and graduate achievements (Suryaman et al., 2024).

Research on principal leadership variables through TQM on the quality of education has an essential urgency in improving the quality of education (Glaveli et al., 2021). There are several reasons why this research is necessary. The principal plays a significant role in determining a school's education quality (Kin & Abdul Kareem, 2018). Effective leadership from a school principal can positively change the learning process, teacher performance, and student achievement. The TQM approach is a management system that focuses on continuous quality improvement. Implementing TQM in schools can help increase efficiency, effectiveness, and accountability in providing education (Dwaikat, 2020). TQM is a management approach that improves an organization's overall quality. In the educational context, TQM can be applied to improve the quality of education by integrating various elements, including teacher performance variables (Kasman & Lubis, 2022). Teacher performance variables are significant in the TQM

context because teachers are critical elements in the educational process. Good teacher performance can positively impact various aspects of educational quality, such as student learning outcomes, teaching quality, and learning climate in the classroom. Thus, the urgency of teacher performance variables through TQM on education quality is tremendous because high teacher performance is one of the keys to achieving optimal education quality (Nogueiro & Saraiva, 2023).

The TQM variable is critical to the quality of education because it offers a framework to guarantee that every facet of the system—from instruction to school administration—operates effectively and efficiently. Through applying TQM principles, educational institutions can improve learning processes, resource management, and interactions between various stakeholders, all of which contribute to improving the overall quality of education. Thus, TQM variables play a crucial role in improving the quality of education by ensuring that all elements in the education system work optimally (Fauzi & Hosna, 2022). Implementing TQM in the educational context is urgent to improve the quality of education. There are several reasons why TQM variables are essential in improving the quality of education, namely quality orientation, meaning that TQM places quality as the main focus in every educational activity and process. Schools may guarantee that all facets of education, including learning and school administration, meet high standards by implementing TQM concepts (Ahmed & Idris, 2020). The influence of school principal leadership on the quality of education and TQM is critical in providing quality education (Berkovich & Eyal, 2017). Because The principal's leadership significantly impacts school culture, principals who promote an inclusive, collaborative, and learning-oriented culture will create an environment that supports staff development and improves the quality of education (Galdames-Calderón, 2023).

The principal manages school resources, including the workforce, budget, and facilities (Li et al., 2023). School principals who implement a TQM approach tend to pay more attention to the overall quality of the education system, motivate staff, and build a school culture oriented towards continuous learning and improvement. Implementing a TQM approach allows school principals to facilitate this process by using data and feedback to identify opportunities for improvement (Dwaikat, 2020). The influence of teacher competence on the quality of education and TQM has great urgency in developing a quality education system. Teachers are the most critical factor in students' learning experiences (Ahmed & Idris, 2020). The quality of teaching teachers provide significantly impacts student learning outcomes (Khakimov & Sharopov, 2023). TQM places the primary focus on results and continuous improvement. By implementing TQM principles, schools can continually evaluate and improve the learning process, student academic outcomes, and the overall learning experience (Khakimov & Sharopov, 2023). TQM helps in building a school culture that is quality-oriented, collaborative, and learning-centered. It creates an environment where school staff feel supported to innovate, share knowledge, and work together to achieve common goals (Nogueiro & Saraiva, 2023). A key strategy for enhancing the educational system is TQM, which acts as a mediator between school principals' leadership and teacher effectiveness on the quality of education (Navaridas-Nalda et al., 2020). TQM primarily focuses on quality in all aspects of education, including leadership, teacher performance, and the learning process (Puruwita et al., 2022). TQM helps identify areas where teacher performance can be improved (Yolanda & Said, 2022). This research investigates the influence of the principal's leadership and teacher performance on the quality of education and the mediating role of TQM in this relationship. Thus, this research can provide new insights into efforts to improve the quality of education through a holistic and integrated approach (Budayan & Okudan, 2022).

METHOD

Research Design and Participants

This research applies a quantitative approach with survey research methods (Apriliani et al., 2023; Putra et al., 2022; Widayanto et al., 2021). The survey method was chosen because this research

aimed to examine the construction of teacher professional competency variables retrospectively. This research uses non-probability sampling with a purposive sampling technique. The sample in this research was 50 teachers at MA Darul Falah Sukorejo Ponorogo.

Measurement

The data collection technique uses a questionnaire with four variables. The independent variables include Principal Leadership (X_1) and Teacher Performance (X_2), the moderator variable is TQM (Z), and the dependent variable is Education Quality (Y). Data collection was carried out using a survey method via Google Forms. This research uses a Likert scale of 4 alternative answers from never (1) to always (4) (Daryono et al., 2020; Widyastuti et al., 2023). Research instrument variables are shown in Table 1.

Table 1. The Construct of the Research Variables

No	Variables	Indicators	Constructs	References
1	Principal	Intellectual abilities	KKS6	(Berkovich & Eyal, 2017; Chen,
2	Leadership		KKS10	2024; Galdames-Calderón, 2023;
3	(X_1)	Personal abilities	KKS5	Ken et al., 2023; Kin & Abdull
4		Managerial ability	KKS2	Kareem, 2018; Li et al., 2023;
5			KKS3	Navaridas-Nalda et al., 2020;
6		Social skills	KKS1	Safrida et al., 2023; Suryaman et al.,
7			KKS7	2024)
8			KKS9	
9		Ability to make decisions	KKS4	
10			KKS8	
11	Teacher	Planning of teaching and learning	KIGU1	(Afdal et al., 2023; Bektiarso et al.,
12	Performance	activities	KIGU10	2023; Cahapay & Ii, 2021; Fan,
13	(X_2)	implementation of teaching and	KIGU4	2022; Hanaysha et al., 2023;
14		learning activities	KIGU6	Kasman & Lubis, 2022; Kaur et al.,
15			KIGU8	2019; Lindner et al., 2021; Puruwita
16		Organizing of teaching and learning activities	KIGU 7	et al., 2022; Van Waeyenberg et al., 2022; Yolanda & Said, 2022)
17		Evaluate KBM results	KIGU2	
18			KIGU3	
19			KIGU9	
20		Manage student data	KIGU5	
21	TQM (Z)	Focus on customers	TQM1	(Ahmed & Idris, 2020; Benzaquen
22			TQM5	& Charles, 2022; Budayan &
23			TQM7	Okudan, 2022; Dwaikat, 2020;
24		Obsession with quality	TQM8	García-Alcaraz et al., 2019; Glaveli
25			TQM10	et al., 2021; Mateos-Ronco &
26		Continuous improvement	TQM2	Hernández Mezquida, 2018;
27			TQM4	Nogueiro & Saraiva, 2023)
28		Employee development	TQM6	
29			TQM9	
30		Long term commitment	TQM3	
31	Quality of	Content standards	MUPE8	(Ali et al., 2024; Ashraf & Ahmed,
32	education (Y)		MUPE10	2022; Badrusalam, 2021; Dwaikat,
33		Process standards	MUPE4	2020; Fauzi & Hosna, 2022; Hwang
34			MUPE9	& Choi, 2019; Kamrat et al., 2022;
35		Management standards	MUPE5	Khakimov & Sharopov, 2023; She,
36		Assessment standards	MUPE2	2024; Sutrisno et al., 2023)
37			MUPE6	
38		Graduate competence standard	MUPE1	
39			MUPE3	
40			MUPE7	

Data Analysis

Statistical analysis of this research uses the PLS-SEM measurement technique. The outer model testing stage is a measurement model testing stage that aims to prove the validity and estimate the reliability of indicators and constructs. Several requirements that must be met are the indicator loading factor ($\lambda > 0.70$) and the reflective construct AVE (>0.50) (Daryono et al., 2024; Fauzan et al., 2023; Supriyanto et al., 2022). Reliability estimates use Cronbach Alpha, Rho_A, and CR values (>0.70). The goodness of fit model testing stage aims to test the predictive power and feasibility of the model. The criteria that must be met include predictive relevance to see the model's predictive power on the blindfolding output (Daryono et al., 2023; Hariyanto et al., 2022). The inner model testing stage tests the significance of the direct (H-DIR1-5) and indirect effects (the mediating role of H-IND1-2).

RESULT AND DISCUSSION

Result

Measurement Model Testing (Outer Model)

Evaluation of measurement models is very important to ensure that the indicators used to measure latent constructs or variables are consistent with the research objectives and of good quality. Examining construct validity is the primary goal of measuring model evaluation. Analyzing the relationship between the indicator and the measured construct can ensure that the indicator truly reflects the intended aspect of the construct. By analyzing factor loadings, reliability, and discriminant validity, researchers can decide which indicators should be included in the analysis and which should be omitted.
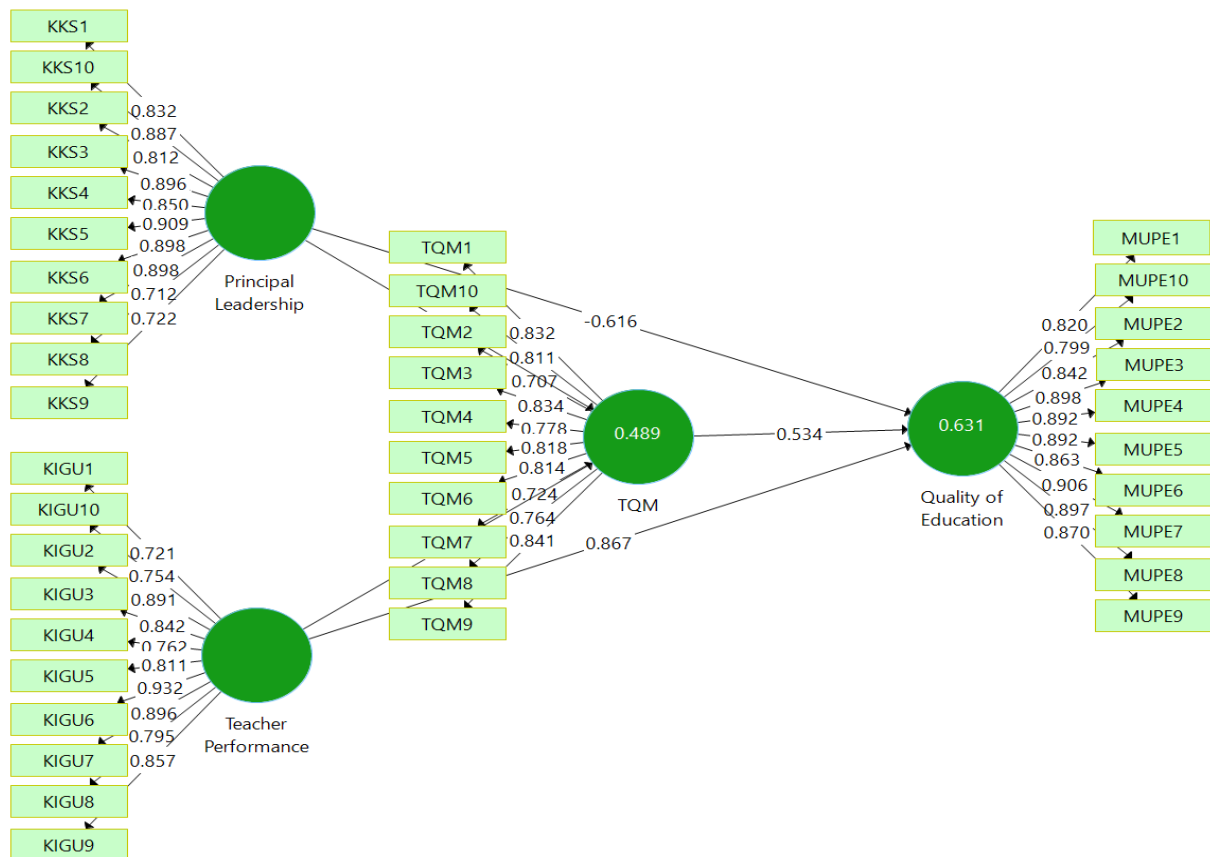

Figure 1. Testing the Measurement Model (Outer Model)

Based on Table 2 below, each item's overall factor loading value is ≥0.70 (0.707 to 0.932). The average extracted variance (AVE) value for each variable has a value of ≥0.50 (0.630 to 0.630). So, it can be concluded that each item and variable in the instrument meets the requirements for convergent validity. Based on the factor loading coefficient values, the statement items that most dominantly represent the success of the teacher performance construct are the Continuous Improvement indicator of 0.707 and the implementation of teaching and learning activities of 0.932. It can be interpreted that implementing teaching and learning activities can explain the variance in educational quality by 93.20%.

Table 2. The Construct of the Research Variables

No	Variables	Indicators	Convergent Validity		Consistency Reliability		
			FL	AVE	CA	Rho_A	CR
			(>0.70)	(>0.50)	(>0.70)	(>0.70)	(>0.70)
1	Principal Leadership (X₁)	Intellectual abilities	0.898	0.713	0.954	0.957	0.961
2			0.887				
3		Personal abilities	0.909				
4		Managerial ability	0.812				
5			0.896				
6		Social skills	0.832				
7			0.898				
8			0.722				
9		Ability to make decisions	0.850				
10			0.712				
11	Teacher Performance (X₂)	Planning of teaching and learning activities	0.721	0.944	0.949	0.961	0.956
12			0.754				
13		implementation of teaching and learning activities	0.762				
14			0.932				
15			0.795				
16		Organizing of teaching and learning activities	0.896				
17		Evaluate KBM results	0.891				
18			0.842				
19			0.857				
20		Manage student data	0.811				
21	TQM (Y)	Focus on customers	0.832	0.630	0.935	0.941	0.944
22			0.818				
23			0.724				
24		Obsession with quality	0.764				
25			0.811				
26		Continuous improvement	0.707				
27			0.778				
28		Employee development	0.814				
29			0.841				
30		Long term commitment	0.834				
31	Education Quality (Z)	Content standards	0.897	0.754	0.964	0.966	0.968
32			0.799				
33		Process standards	0.892				
34			0.870				
35		Management standards	0.892				
36		Assessment standards	0.842				
37			0.863				
38		Graduate competence standard	0.820				
39			0.898				
40			0.906				

A variable is declared reliable with a CA, Rho_A, and CR value of ≥0.70. From the SmartPLS output results in Table 4, it shows that all constructions have CA values (0.935-TQM (Z) to 0.964-Quality of Education (Y)), rho_A (0.941-TQM (Z) to 0.966-Quality of Education (Y)), and CR (0.944-TQM (Z) to 0.968-Quality of Education (Y)), overall >0.70. It can be concluded that all research variables are reliable in measuring educational quality (Y) success.

The Fornell-Larcker test is one of the methods used in Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate the discriminant validity of constructs in a model. This test aims to ensure that the different constructs in the model can be distinguished from each other. It is done by comparing the variance explained by the construct with those explained by the other constructs in the model. If the variance explained by one construct is more significant than that explained by another, then the construct has good discriminant validity. Based on Table 3 in the Fornell-Larcker test, the correlation value of teacher performance (X2) → teacher performance (X2) has a value of 0.829, which is greater than the reciprocal correlation value of education (Y) with other variables (quality of education) → 0.679; principal leadership→ 0.695; and TQM → 0.450). And so on, to assess correlation with other variables.

Table 3. Discriminant Validity: Fornell-Larcker

Variables	Teacher Performance	Education Quality	Principal Leadership	TQM
Teacher Performance	0.829			
Education Quality	0.679	0.869		
Principal Leadership	0.695	0.358	0.845	
TQM	0.450	0.494	0.698	0.794

One of the primary purposes of HTMT testing is to measure discriminant validity in the model. HTMT is used to examine the extent to which the constructs measured by different indicators represent the same or different constructs in the model. HTMT is also helpful in assessing multicollinearity between constructs in the model. Multicollinearity can occur when constructs are strongly related to each other, which can cause problems in the estimation and interpretation of results in SEM analysis. Furthermore, Table 4 of the HTMT assessment for all dimensions has a value of <0.90 (0.442 to 0.723). So, Fornell-Larcker and HTMT, on the correlation of all variables in this research data instrument, meet the requirements of the discriminant validity test for measuring the success of principal leadership (Y) and TQM (Z).

Table 4. Discriminant Validity: Heterotrait-Monotrait ratio (HTMT)

Variables	Teacher Performance	Education Quality	Principal Leadership	TQM
Teacher Performance				
Education Quality	0.691			
Principal Leadership	0.720	0.366		
TQM	0.442	0.498	0.723	

Structural Model Testing (Inner Model)

Structural evaluation in testing on PLS-SEM has the main objective of assessing the prediction accuracy of the proposed model. It is done by evaluating the extent to which the model can explain variations in empirical data and predict endogenous variables well. Overall, structural evaluation aims to improve understanding of the phenomenon studied in the research context. By analyzing the relationships between variables, researchers can identify the factors contributing to the phenomenon and develop more profound insight into the dynamics involved.

Table 5. Coefficient of Input (R2) and F-square test results

Variabel	R Square			F Square			
	Value	%	Decision	(Y)	Decision	(Z)	Decision
Principal Leadership (X1)	-	-	-	0.341	Medium	0.561	Large
Teacher Performance (Z)	-	-	-	1,050	Large	0.005	Small
TQM (Z)	0.489	48,9%	Moderate	0.394	Large	-	-
Education Quality (Y)	0.631	63,1%	Moderate	-	-	-	-

The model explains variation in the observed endogenous variables (constructs). The higher the R² value, the more significant the proportion of variation in the construct that the model can explain. R² allows comparison between different PLS-SEM models. Researchers can use R² values to compare the effectiveness of different models in explaining variation in observed constructs. Based on Table 5, the Education Quality (Y) obtained an R² value of 0.631. It means that the variable (Z) mediating the principal's leadership and teacher performance in measuring education quality is 63.12%, and other variables outside the research model influence the remaining 36.88%. So, the analysis in this study shows that the model has succeeded in explaining variations in the observed constructs well and that the latent variables used have a significant relationship with these constructs.

Several different variables can influence a variable in a structural model. f^2 is the change in R-Square when exogenous variables are removed from the model. f^2 (effect size) is one of the measures in PLS-SEM to evaluate the strength of the effect of latent variables on the observed construct. Precisely, f^2 measures the predictive power of a latent variable against a particular construct in the model. Precisely, f^2 is calculated by dividing the square of the latent variable regression loading on a particular construct by the residual error (error variance) amount from that construct. The results show how much the latent variable explains variation in the observed construct. So f^2 aims to assess the magnitude of the influence between variables. The f^2 value is divided into three categories, namely effect size (>0.02 small; >0.15 medium; >0.35 large). f^2 helps determine how significant the contribution of latent variables is to the observed construct. f^2 allows comparison between the contributions of several latent variables to the same construct to identify the latent variables that most significantly affect the observable construct. The most vital variable in measuring Education Quality (Y) is the Teacher Performance variable (X2) with a f-Square value of 1.050 in the large category. Furthermore, the weakest variable in measuring Education Quality (Y) is Principal Leadership (X1), with a f^2 value of 0.341 in the medium category.

Path Analysis and Hypothesis Testing

One of the main goals of hypothesis testing is to examine the relationships between variables in a proposed model. It is done by analyzing the strength and significance of the relationships between the variables identified in the model. Direct effect evaluation allows researchers to test the consistency between empirical findings and the theory that supports the model. This test also analyzes the significance of the mediation effect in the research model. Understanding the mechanisms underlying relationships between variables and how certain variables can mediate or change relationships between other variables is essential.
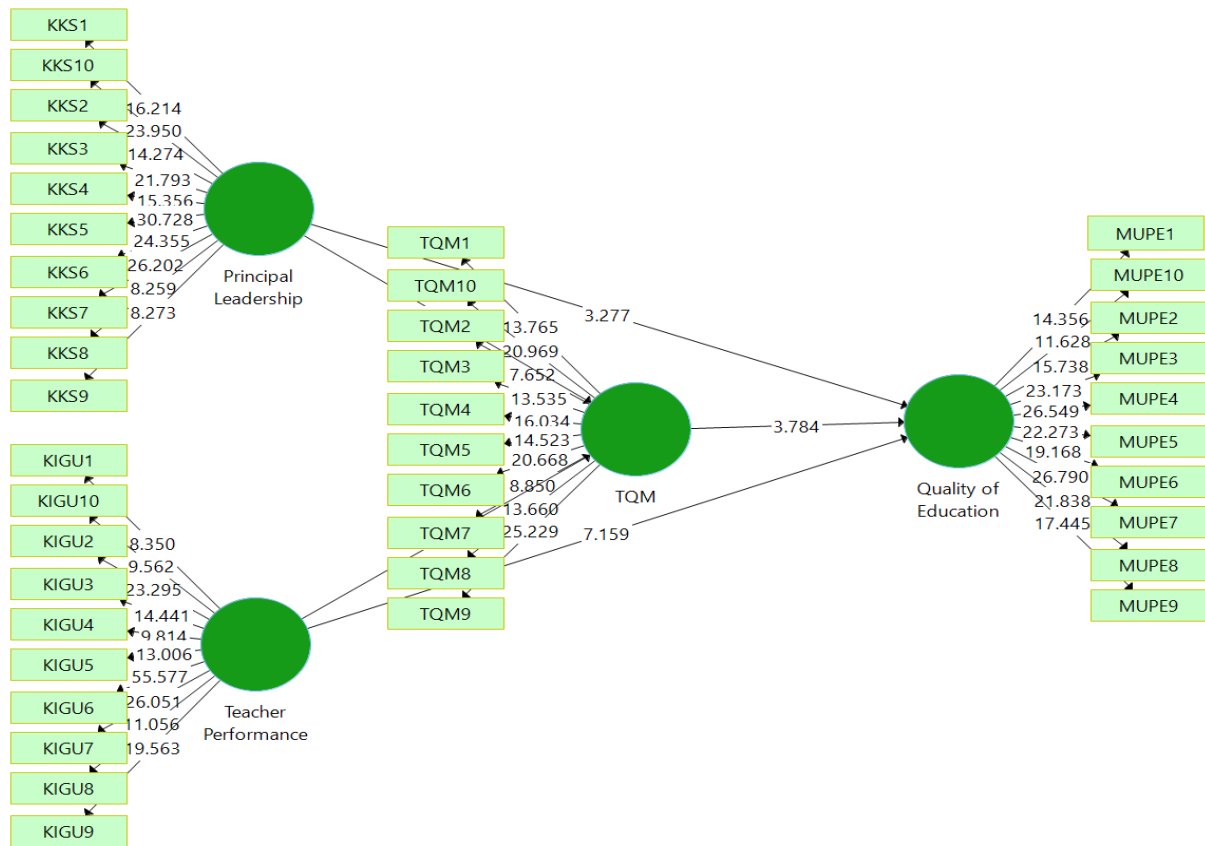
Figure 2. Path Analysis Testing

Based on Table 6, a hypothesis can be accepted with significant criteria if it has a T-statistics value above 1.96. Meanwhile, the hypothesis can be accepted with a positive or negative influence if the β-value coefficient results indicate a positive or negative direction of influence. In hypothesis H (Internal Risk Factors (X1) → Adolescent Resilience (Y1) obtained β-values = 0.327 (positive decimal), T-statistics = 10.357 (>1.96) and ϱ-values = 0.000 (<0.05). It shows that the Internal Risk Factor variable (X1) positively and significantly affects Adolescent Resilience (Y1). It can be concluded that the data for these two variables accepts the hypothesis (Hypothesis 3 is accepted). It can be interpreted that when the Internal Risk Factor variable (X1) increases, the Youth Resilience variable (Y1) will also increase and vice versa.

Table 6. Path Analysis: Direct Effects

Hyp.	Path Analysis	β-values (+)/ (-)	Sample Mean	SDV	T-statistics (≥1.96)	ϱ-values (≤0.00)	Decision
H-DIR1	PL → EQ	-0.616	-0.643	0.196	3.146	0.002	Rejected
H-DIR2	TP → EQ	0.867	0.877	0.120	7,228	0.000	Accepted
H-DIR3	PL → TQM	0.744	0.752	0.142	5.226	0.000	Accepted
H-DIR4	TP → TQM	-0.067	-0.060	0.164	0.410	0.682	Rejected
H-DIR5	TQM → EQ	0.534	0.555	0.147	3.633	0.000	Accepted

Analysis of Indirect Effects (Mediation Role)

In Hypothesis H7, the results of testing the moderating effect of the Teacher Performance variable (X2) can be concluded that there is a negative influence (β-values = -0.036) and is less significant (T-value 0.382) >1.96) and ϱ-values = 0.703 >0.05) through the TQM variable (Z) towards improving the quality of education (Y). So H7, which states that there is an insignificant influence between Teacher Performance (X2) on improving the Quality of Education (Y) in Aliyah,

cannot be accepted if it is through the mediator variable TQM in improving the quality of education. It can be seen that the direct effect on hypothesis H7 is that the Teacher Performance Factor (X2) on improving the quality of education (Y) has a positive and significant influence with β-values = 0.867. So, the β-values between H7 indirectly have a more significant effect. Small compared to the H2 indirect effect. It can be concluded that the role of the mediator in the TQM variable (Z) is not needed to improve the quality of education (Y). Hypothesis H1 states a direct and significant negative influence (β-values = - 0.616) from the principal's leadership (X1) on raising educational standards. Hypothesis H6 results from testing the effect of the principal's leadership variable (X1) in improving the quality of education (Y) through the TQM mediator variable (Z), which has a value of β-values= 0.397, which states that the role of TQM in principal's leadership is a full mediator in improving quality education.

Table 7. Path Analysis: Indirect Effects

Hyp.	Path Analysis	β-values (+)/ (-)	STDEV	T-statistics ($\geq$1.96)	Q-values ($\leq$0.00)	Decision	Mediating Role
H-IND1	PL → TQM → EQ	0.397	0.150	2,650	0.008	Accepted	Full Mediation
H-IND2	TP → TQM → EQ	-0.036	0.094	0.382	0.703	Rejected	Full Mediation

Discussion

This research shows that the highest indicator of the principal's leadership variable is personal ability, with a loading factor of 0.909. It states that the school principal must have good characteristics and behavior. This research is not in line with (Berkovich & Eyal, 2017), which shows that indicators of decision-making ability have a significant influence. It means that school principals cannot carry out a SWOT analysis before determining a program that will be implemented at the school (Ken et al., 2023). Apart from that, the dominant factor that influences the principal's leadership is the indicator of intellectual ability. Based on this research, school principals need to gain extensive experience and knowledge to understand the school climate and know the desires of their subordinates. So, the results of this research align with (Safrida et al., 2023), who stated that school principals can reward teaching staff for their work achievements.

This research shows that the highest indicator of the teacher performance variable is carrying out learning activities with a loading factor of 0.932. It states that teachers must be able to carry out learning activities according to the objectives set. The results of this research are not in line with (Afdal et al., 2023), who show that indicators for planning learning activities have a significant influence. It means that a teacher must be able to plan, including materials, methods, and learning media. Apart from that, the dominant factor influencing teacher performance is the indicator of organizing learning activities. Based on this research, teachers must be able to manage the class so that the learning process runs effectively. So, the results of this research align with research by (Van Waeyenberg et al., 2022), which states that a teacher must try to give students time to share material according to the applicable curriculum after class hours are finished.

Teacher competency contributes to forming a culture of sustainable learning in schools. Competent teachers tend to advocate best practices, share knowledge, and collaborate with their colleagues. By implementing TQM, schools can strengthen a student-centered learning culture and be oriented towards continuous improvement (Mateos-Ronco & Hernández Mezquida, 2018). Teacher competency also influences the effectiveness of professional development programs. Teachers tend to be more open to ongoing training and learning and more able to apply acquired skills in daily teaching practice. Professional development programs can be designed and evaluated continuously through a TQM approach to ensure their relevance and effectiveness.

This research shows that the highest indicator of the TQM variable is employee development, with a loading factor of 0.841. It shows that TQM must always pay attention to

employee development so that human resources in an institution become professional. This research does not align with (Ali et al., 2024) research, which shows that continuous improvement indicators have a significant influence. It means that madrasah policies must lead to continuous improvement. Apart from that, the indicator of long-term commitment is the dominant factor that influences TQM. Based on this research, all human resources in an educational institution must have a committed intention so that no teachers come in and out or stop by to fill their free time. So, the results of this research align with research (Ahmed & Idris, 2020), which states that madrasah policies always look at the impact on customers.

This research shows that the highest indicator of improving the quality of education is graduate competency standards, with a loading factor of 0.906. It states that the school can implement superior programs supporting students' academic and non-academic achievements. This research aligns with research x, which shows that content standard indicators significantly influence (Hwang & Choi, 2019). It means that schools must innovate in developing learning media by utilizing technology. Apart from that, the dominant factor influencing the quality of education is the standard indicator of graduate competency. Based on this research, schools need to include students in competitions. So, the results of this research are different from research (2024), which states that schools must prepare accreditation plans and make maximum efforts to achieve the quality of education planned effectively and efficiently. TQM emphasizes continuous performance measurement and continuous improvement. By monitoring performance indicators and using data to make decisions, schools can identify problems, implement improvements, and evaluate their impact on overall quality education (Kamrat et al., 2022). TQM encourages the involvement of all stakeholders, including students, parents, teachers, school staff, and local communities. Involving all parties involved in the educational process can improve understanding of their needs and expectations, enabling more effective solutions.

The implications of TQM's importance in mediating teacher performance's influence on the quality of education include various aspects that contribute to improving the education system as a whole. TQM helps assess teacher performance based on input, the teaching process, and student learning outcomes (Bektiarso et al., 2023). Thus, teachers are encouraged to plan more effectively and improve their teaching methods to achieve better results continuously. TQM promotes a learning culture in schools, where teachers are invited to continually improve their teaching practices through reflection, training, and collaboration. It creates an environment where innovation is encouraged and staff feel supported in professional development (Dwaikat, 2020).

TQM emphasizes the importance of using data and evidence when making decisions related to teaching and learning. Teachers are encouraged to use evaluation and assessment data to identify student weaknesses and design appropriate interventions to improve learning outcomes (Nogueiro & Saraiva, 2023). TQM provides a framework for continuous professional development for teachers. Teachers can continuously improve their skills in supporting student learning through training, mentoring, and exchanging best practices. TQM encourages the active involvement of students and parents in the educational process. Teachers are expected to collaborate with parents to support learning at home and to involve students in setting learning goals and evaluating their progress (Hanaysha et al., 2023).

CONCLUSION

The principal's leadership does not significantly affect the quality of education if it is not through TQM at MA Darul Falah Sukorejo. In addition, teacher performance significantly influences the quality of education, if not through TQM. It shows the importance of TQM in mediating the influence of school principal leadership on improving education quality. By applying TQM principles in his leadership, a school principal can bring positive and sustainable changes to the quality of education in schools. School principals should also encourage teacher performance so

that it continues to improve. A teacher must be able to continuously evaluate, improve, and encourage a culture of continuous learning. By applying TQM principles in teaching practice, teachers can improve their performance and provide a better educational experience for their students.

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