Confirmatory Validation of a Multidimensional Islamic Educational Leadership Model: Integrating Principals' Instructional Practices, the Ulul Albab Paradigm, and Holistic Student Outcomes in Malaysian Secondary Schools

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ABSTRACT

This article presents the confirmatory validation of a multidimensional leadership model that integrates Principals' Instructional Leadership, the Ulul Albab educational paradigm, and holistic student development outcomes within the context of Malaysian secondary education. Drawing on a sample of 384 respondents from Terengganu state schools, the research employs Structural Equation Modeling (SEM) via Confirmatory Factor Analysis (CFA) and Pooled CFA using IBM SPSS AMOS 21.0. Eight domains of instructional leadership and three foundational dimensions of the Ulul Albab framework—Quranic, Encyclopedic, and Ijtihadic—were empirically tested. All constructs met established thresholds for model fit (RMSEA < 0.08; CFI > 0.90; $\chi^2/df <$ 3.0) and demonstrated robust construct validity, internal consistency (CR > 0.7), and discriminant validity (inter-construct correlations < 0.85). The results confirm the theoretical distinctiveness and empirical reliability of the integrated model. This article contributes to the advancement of Islamic educational leadership theory by operationalizing the Ulul Albab framework through psychometrically validated constructs. It further offers a methodological benchmark for future leadership evaluation in value-based schooling contexts. The validated instrument holds practical utility for leadership development, policy formulation, and institutional transformation aligned with holistic national education goals.

Keywords— Islamic educational leadership, instructional leadership, Ulul Albab model, Confirmatory Factor Analysis, holistic student development, structural equation modeling

INTRODUCTION

Instructional leadership has emerged as a pivotal leadership style in school administration, particularly in navigating the dynamic changes in 21st-century education, such as evolving curriculum demands [1]. According to [2], educational leadership encompasses behaviors, skills, attitudes, and knowledge that demonstrate the capacity to influence, guide, and empower school personnel and the broader community in achieving institutional objectives.

Reference [3] defines instructional leadership as a set of principal-led behaviors directed toward enhancing teaching and learning processes, involving collaboration among teachers, students, parents, and school administrators. This leadership model emphasizes school-wide improvement through structured planning, effective resource utilization, and the development of a learning-centered school culture. Instructional leadership also enables school leaders to respond proactively to reform pressures and the complexities of today's educational environment [4].

Workplace conditions—such as school culture, collegial relationships, and leadership—are critical determinants of teacher satisfaction, organizational commitment, and retention [5]. Prior research has consistently shown that principal leadership significantly influences school structure, the quality of teaching and learning, and ultimately, student achievement [6].

In Malaysia, educational leadership is further enriched by spiritual and moral dimensions embedded in the national education philosophy. The Ulul Albab approach, developed under the Malaysian Integrated Education Model, seeks to integrate intellectual, spiritual, and ethical development through three interrelated dimensions: Quranic, Encyclopedic, and Ijtihadic.

While conceptual models of Islamic educational leadership are well-developed, there remains a shortage of empirical research validating such frameworks using robust statistical techniques. This study addresses this gap by applying Confirmatory Factor Analysis (CFA) to test the validity and reliability of a measurement model capturing both instructional leadership practices and the Ulul Albab approach. The objective is to determine whether leadership practices grounded in Islamic values effectively support student development in selected Terengganu secondary schools.

This study aligns with national educational reform efforts that emphasize holistic student development, leadership effectiveness, and institutional accountability. The validated model offers a strategic tool for evidence-based policy implementation and leadership training across Islamic educational institutions in Malaysia.

RESEARCH METHODOLOGY

The research method used is quantitative and uses research instruments that have been adapted according to the suitability of factors Principal's Instructional Leadership (based on Formulating School Goals, Delivering the School's Curriculum Goals, Instructional Supervision and Evaluation, Coordinating Curriculum, Monitoring Student Progress, Protecting PdPc Time, Maintaining Attendance, Providing Incentives to Students) and Ulul Albab Approach on Occurrence Student among Terengganu state secondary school. Data were analyzed using Structural Equation Modeling (SEM) with the help of the IBM-SPSS-AMOS version 21.0 program. SEM is formed with two (2) main models namely Measurement Model and Structural Model. Before the SEM test is performed, an adaptation test should be conducted to ensure that the indicators tested truly represent the construct being measured. Confirmatory Factor Analysis (CFA) is a measurement model test to ensure that each construct meets procedures such as validity and reliability for each construct tested [7], [8]. The fit of the measurement model is very important to ensure that each latent construct in this study has fit with the data studied before SEM can continue [7].

Using the CFA method can assess the extent to which the observed factors are significant to the latent construct used. This evaluation is done by examining the value of the strength of the regression structure path from the factor to the observed variable (ie Factor Loading value) instead of the relationship between the factors [9]. Through the use of CFA, any item that does not fit the measurement model is dropped from the model. This discrepancy is due to the low value of the load factor. Researchers need to perform the CFA process on all the constructs involved in the model, either separately or in a pooled CFA model [10]. The suitability of the tested hypothesis model was verified by using Fitness Indexes to see the value of Root Mean Square Error of Approximation (RMSEA<0.08), Comparative Fit Index (CFI>0.90) and Chi Square/Degrees of Freedom (chisq/df<5.0). According to [8] if the $\chi 2$ value is less than 2.00 but significant, then it is necessary to state whether the sample size is large or vice versa. A sample size that exceeds 200 can cause the $\chi 2$ value to be significant. Because of that, Hair and his colleagues suggested two other indices namely CFI and RMSEA to ensure that the CFA analysis forms the unidimensionality of the study model. If the CFI value exceeds 0.90 and the RMSEA is less than 0.08, it is said that there is unidimensionality for the formation of each construct.

Research Design

This study employed a quantitative research design using Confirmatory Factor Analysis (CFA) within the Structural Equation Modeling (SEM) framework. SEM comprises two core components: the measurement

model, which validates the relationships between latent variables and their observed indicators, and the structural model, which assesses the relationships among latent constructs [7], [11]. CFA was conducted in two phases—initially through individual model testing to assess construct unidimensionality, followed by pooled CFA to validate the full measurement model across all constructs.

Population and Sampling

The study targeted teachers from secondary schools in Terengganu that implement the Ulul Albab program. Using stratified random sampling, 384 respondents were selected, a sample size deemed adequate for CFA and SEM, as recommended in methodological literature [11].

Instrumentation

The research instrument was designed to measure eight core dimensions of Principal Instructional Leadership: (1) Formulating School Goals, (2) Delivering the School Curriculum, (3) Instructional Supervision and Evaluation, (4) Curriculum Coordination, (5) Monitoring Student Progress, (6) Safeguarding Instructional Time, (7) Monitoring Attendance, and (8) Providing Student Incentives. These were integrated with the three domains of the Ulul Albab educational philosophy: Quranic, Encyclopedic, and Ijtihadic dimensions. Each item was rated on a 10-point Likert scale to ensure a wide response range.

Data Analysis

Data were analyzed using IBM SPSS AMOS version 21.0. The CFA process examined factor loadings to determine the strength of relationships between observed variables and their latent constructs. Items with standardized loadings below 0.60 were removed to maintain construct validity and ensure model parsimony [9], [12].

Fit indices were used to evaluate the adequacy of the measurement model. These included the Root Mean Square Error of Approximation (RMSEA < 0.08), Comparative Fit Index (CFI > 0.90), and Chi-square to degrees of freedom ratio (ChiSq/df < 5.00), as suggested by [11]. Given that large sample sizes (n > 200) can result in significant Chi-square values even with good model fit, greater emphasis was placed on CFI and RMSEA to establish unidimensionality and model validity.

Composite Reliability (CR) and Average Variance Extracted (AVE) were computed to assess internal consistency and convergent validity. Discriminant validity was confirmed when the square root of each construct's AVE exceeded its correlations with other constructs [13]. CFA was applied both individually for each construct and collectively via pooled CFA to ensure the robustness and coherence of the full measurement model [10].

FINDINGS

Confirmatory Factor Analysis (CFA)

In conducting Structural Equation Modeling (SEM), two essential components are analyzed: the Measurement Model and the Structural Model. According to [12], and further supported by [14], SEM involves a two-step procedure:

1. Validating the Measurement Model of all constructs using Confirmatory Factor Analysis (CFA), and

2. Integrating the validated constructs into the Structural Model to conduct full SEM analysis.

The fitness of the Measurement Model is critical to the validity of the SEM results. If the measurement model does not exhibit a good fit with the empirical data, any structural relationships derived from the model become questionable. Therefore, the first analytical step focuses on evaluating how well the proposed measurement model aligns with the actual data using CFA.

Evaluation of Measurement Model Validity and Reliability

Before advancing to the structural model, the measurement model must satisfy the criteria of unidimensionality, validity, and reliability.

Unidimensionality is achieved by systematically removing items with low factor loadings (i.e., below 0.60), which are considered inadequate in representing the latent construct [9], [12].

Construct Validity refers to the degree to which a measurement instrument accurately measures the intended latent construct. It is achieved when all fit indices for a construct meet the minimum required thresholds [11]. Table I shows fit indices are grouped into three main categories:

1. Absolute Fit Indices: RMSEA (< 0.08), GFI (> 0.90)

2. Incremental Fit Indices: AGFI, CFI, IFI, TLI, NFI (all > 0.90)

3. Parsimonious Fit Index: Chi-square/df (< 3.0)

TABLE I THREE CATEGORIES OF MATCHING INDEXES AND RECOGNIZED INDEX TYPES

Name of Category	Name of Index	Level of Acceptance
Absolute Fit Index	RMSEA	RMSEA < 0.08
	GFI	GFI > 0.90
Incremental Fit Index	AGFI	AGFI > 0.90
	CFI	CFI > 0.90
	IFI	IFI > 0.90
Parsimonious Fit Index	Chisq/df	Chi-Square/ df < 3.0

Convergent Validity assesses whether items intended to measure the same construct are strongly correlated. This is achieved when the Average Variance Extracted (AVE) for each construct exceeds 0.50, indicating that the majority of variance is captured by the construct itself rather than error [11], [13].

Discriminant Validity ensures that each construct is distinct and not a redundant representation of another construct in the model. This is validated when the square root of the AVE (displayed on the diagonal of the correlation matrix) is greater than the inter-construct correlations [12], [14].

Composite Reliability (CR) is used to evaluate internal consistency. A CR value above 0.60 confirms that the latent construct is measured reliably by its observed indicators [11], [14].

Together, these tests confirm that the measurement model is both valid and reliable, providing a robust foundation for further structural analysis using SEM.

CFA Analysis of the Measurement Model for the 'Formulating School Goals' Construct

Composite The Confirmatory Factor Analysis (CFA) for the "Formulating School Goals" construct was conducted to assess the unidimensionality and construct validity of the measurement model. As shown in Table 2, the construct met the recommended thresholds for model fit based on Absolute, Incremental, and Parsimonious fit indices. This confirms that the measurement items for this construct reliably represent a single underlying factor. Construct Validity is deemed satisfactory when the measurement model achieves acceptable values across key fit indices, including the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and the Chi-square to degrees of freedom ratio (ChiSq/df). These indicators collectively demonstrate how well the hypothesized model fits the observed data [9], [11]. The fit indices obtained for the

"Formulating School Goals" construct are as shown in Table II.

TABLE II CFA FIT INDICES FOR THE 'FORMULATING SCHOOL GOALS' CONSTRUCT

Index Name	Index Value	Result
RMSEA	0.012	Meets required threshold
CFI	0.999	Meets required threshold
ChiSq/df	1.221	Meets required threshold

These results indicate that the model exhibits excellent fit, with RMSEA well below the 0.08 threshold, CFI significantly exceeding 0.90, and ChiSq/df below 3.0. Accordingly, the construct has achieved Construct Validity, confirming that the included items effectively measure the underlying latent construct of "Formulating School Goals" [12], [14]. The measurement model, depicted in Fig. 1, illustrates the standardized loadings of all items, each of which exceeded the 0.60 benchmark, reinforcing the unidimensionality and reliability of the construct.

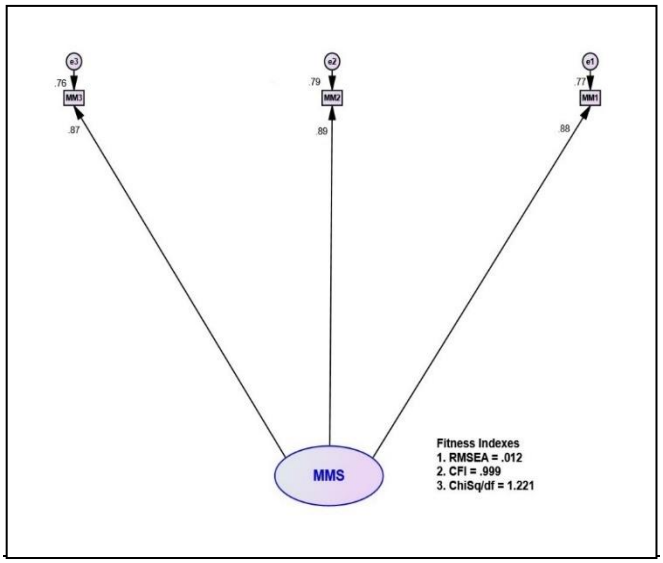

Fig. 1 The Measurement Model of Formulating School Goals Construct

CFA Analysis of the Measurement Model for the 'Delivering the School's Curriculum Goals' Construct

The Confirmatory Factor Analysis (CFA) for the "Delivering the School's Curriculum Goals" construct was conducted to assess its structural validity. Table III presents the fit indices, all of which meet the recommended thresholds. These results confirm that the measurement model is well specified and statistically reliable. The analysis employed the same key fit indices as established in prior CFA literature: RMSEA for Absolute Fit, CFI for Incremental Fit, and Chi-square to degrees of freedom ratio (ChiSq/df) for Parsimonious Fit. These indices collectively assess how well the hypothesized measurement model aligns with the observed data [9], [11].

TABLE III CFA FIT INDICES FOR THE 'DELIVERING THE SCHOOL'S CURRICULUM GOALS' CONSTRUCT

Index Name	Index Value	Result
RMSEA	0.031	Meets required threshold
CFI	0.995	Meets required threshold
ChiSq/df	1.531	Meets required threshold

All three indicators fall within the recommended acceptance ranges: RMSEA < 0.08, CFI > 0.90, and ChiSq/df < 3.0. Thus, the construct has achieved Construct Validity according to the accepted standards in SEM methodology [12], [14]. In addition to model fit, all standardized factor loadings exceeded the 0.60 benchmark, confirming that each item makes a strong and meaningful contribution to the measurement of the latent construct. This outcome provides further evidence of the construct's unidimensionality and internal consistency. The validated measurement model for this construct is depicted in Fig. 2, illustrating the strength of each observed item in relation to the latent variable.

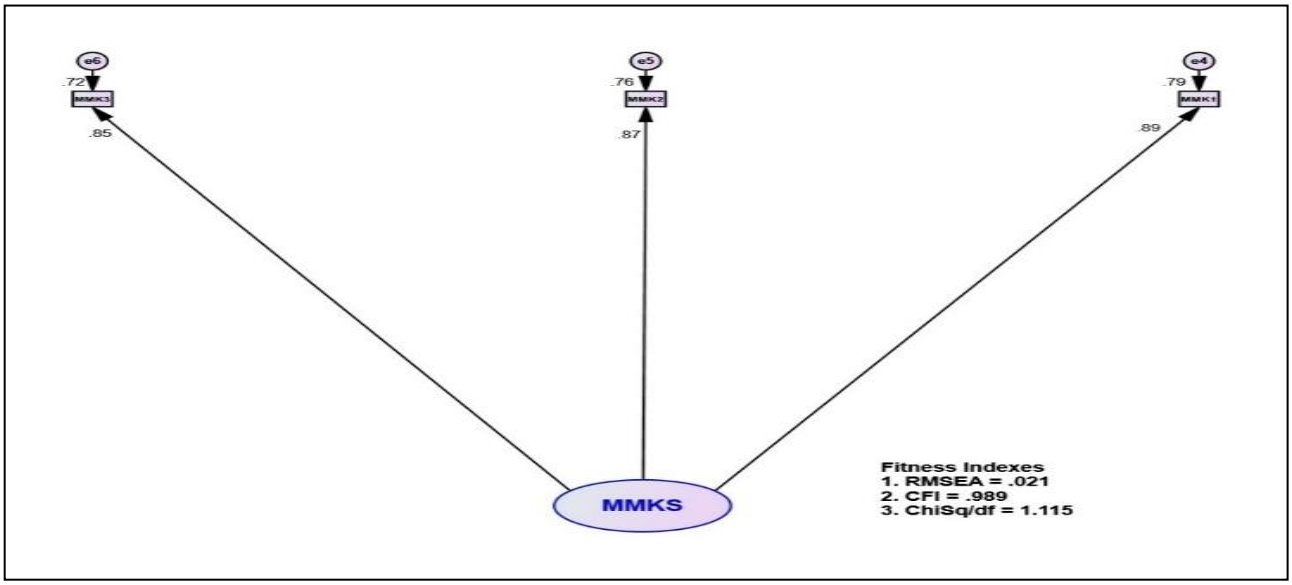

Fig. 2 The Measurement Model of Delivering the School's Curriculum Goals Construct

CFA Analysis of the Measurement Model for the 'Instructional Supervision and Evaluation' Construct

The Confirmatory Factor Analysis (CFA) for the "Instructional Supervision and Evaluation" construct was undertaken to evaluate the model's fit and the effectiveness of its items in measuring the latent variable. The fit indices shown in Table IV indicate that the model achieved satisfactory fit across all standard criteria. The evaluation of the measurement model focused on three categories of fit indices: RMSEA for Absolute Fit, CFI for Incremental Fit, and Chi-square to degrees of freedom ratio (ChiSq/df) for Parsimonious Fit. These indices are widely accepted in SEM research for assessing model adequacy [9], [11].

TABLE IV CFA FIT INDICES FOR THE 'INSTRUCTIONAL SUPERVISION AND EVALUATION' CONSTRUCT

Index Name	Index Value	Result
RMSEA	0.024	Meets required threshold
CFI	0.998	Meets required threshold
ChiSq/df	1.308	Meets required threshold

All index values meet the thresholds established in SEM literature: RMSEA < 0.08, CFI > 0.90, and ChiSq/df < 3.0. These results confirm that the model demonstrates Construct Validity and is a good representation of the theoretical structure [12], [14]. Furthermore, all standardized factor loadings for the construct's items were above the 0.60 criterion, supporting their significant contributions to the construct. This result affirms the unidimensionality and reliability of the construct, ensuring that the items function cohesively in measuring "Instructional Supervision and Evaluation." Fig. 3 visually depicts the measurement model, including standardized loadings and inter-item relationships, providing further evidence of model fit and construct coherence.

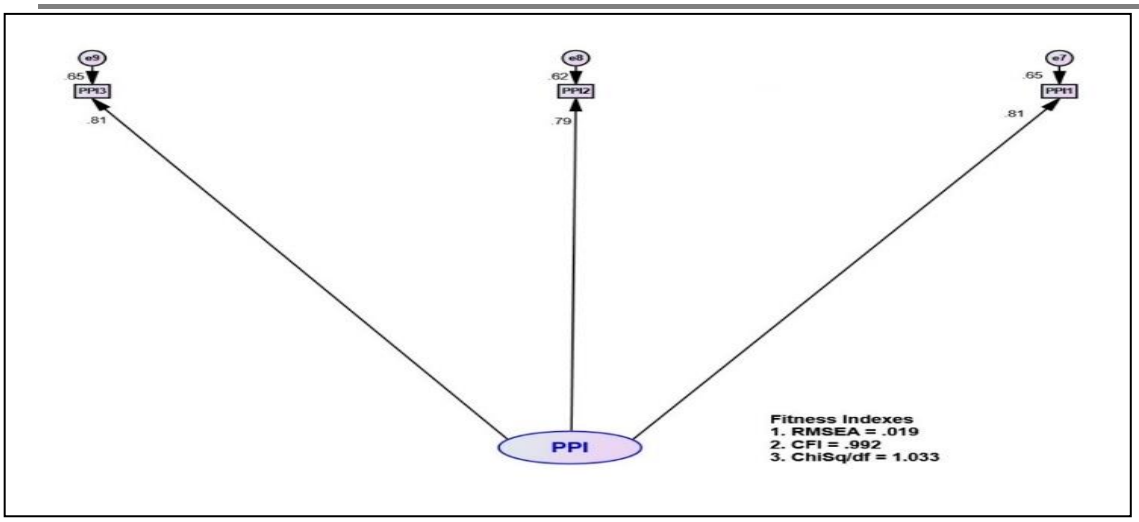

Fig. 3 The Measurement Model of Instructional Supervision and Evaluation Construct

CFA Analysis of the Measurement Model for the 'Coordinating Curriculum' Construct

The Confirmatory Factor Analysis (CFA) for the "Coordinating Curriculum" construct was conducted to assess the adequacy of the measurement model in capturing the underlying latent variable. As shown in Table V, the model achieved excellent fit across all key indices, signifying strong construct validity. Following established SEM practices, model fit was evaluated using Absolute Fit (RMSEA), Incremental Fit (CFI), and Parsimonious Fit (ChiSq/df) indices [9], [11]. These metrics ensure that the proposed construct structure is both statistically valid and theoretically sound.

TABLE V CFA FIT INDICES FOR THE 'COORDINATING CURRICULUM' CONSTRUCT

Index Name	Index Value	Result
RMSEA	0.018	Meets required threshold
CFI	0.997	Meets required threshold
ChiSq/df	1.406	Meets required threshold

All fit indices satisfy the benchmark values: RMSEA below 0.08, CFI above 0.90, and ChiSq/df below 3.0. These values indicate that the model provides a strong statistical representation of the "Coordinating Curriculum" construct [12], [14]. Additionally, all items demonstrated standardized factor loadings above 0.60, confirming their substantial contribution to the construct. This supports the model's unidimensionality and indicates that the construct is measured with internal consistency and clarity. The validated structure is illustrated in Fig. 4, showing each item's loadings and the coherence of the measurement model for this domain of instructional leadership.

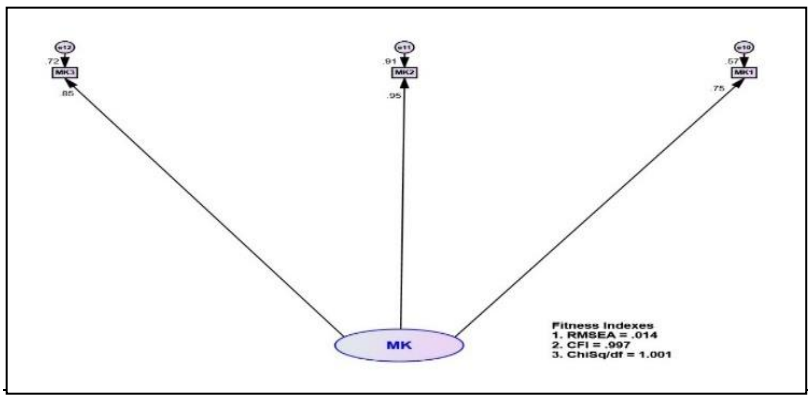

Fig. 4 The Measurement Model of Coordinating Curriculum Construct

CFA Analysis of the Measurement Model for the 'Monitoring Student Progress' Construct

The Confirmatory Factor Analysis (CFA) for the "Monitoring Student Progress" construct was conducted to assess how effectively the measurement model captures the intended latent variable. As presented in Table VI, the fit indices demonstrate that the construct meets all statistical criteria for model adequacy and construct validity. Model fit was evaluated using the Root Mean Square Error of Approximation (RMSEA) for Absolute Fit, the Comparative Fit Index (CFI) for Incremental Fit, and the Chi-square to degrees of freedom ratio (ChiSq/df) for Parsimonious Fit. These indices are recognized as standard benchmarks in SEM literature [9], [11].

TABLE VI CFA FIT INDICES FOR THE 'MONITORING STUDENT PROGRESS' CONSTRUCT

Index Name	Index Value	Result
RMSEA	0.023	Meets required threshold
CFI	0.996	Meets required threshold
ChiSq/df	1.477	Meets required threshold

The values achieved—RMSEA < 0.08, CFI > 0.90, and ChiSq/df < 3.0—confirm that the model demonstrates a high level of Construct Validity and aligns well with the data structure [12], [14]. Moreover, all items within this construct yielded standardized factor loadings greater than 0.60, supporting the unidimensionality and internal reliability of the measurement model. These indicators ensure that each observed variable significantly contributes to the measurement of the "Monitoring Student Progress" latent construct. Fig. 5 presents the visual representation of the measurement model, detailing the factor loadings and illustrating the coherence of the construct within the CFA framework.

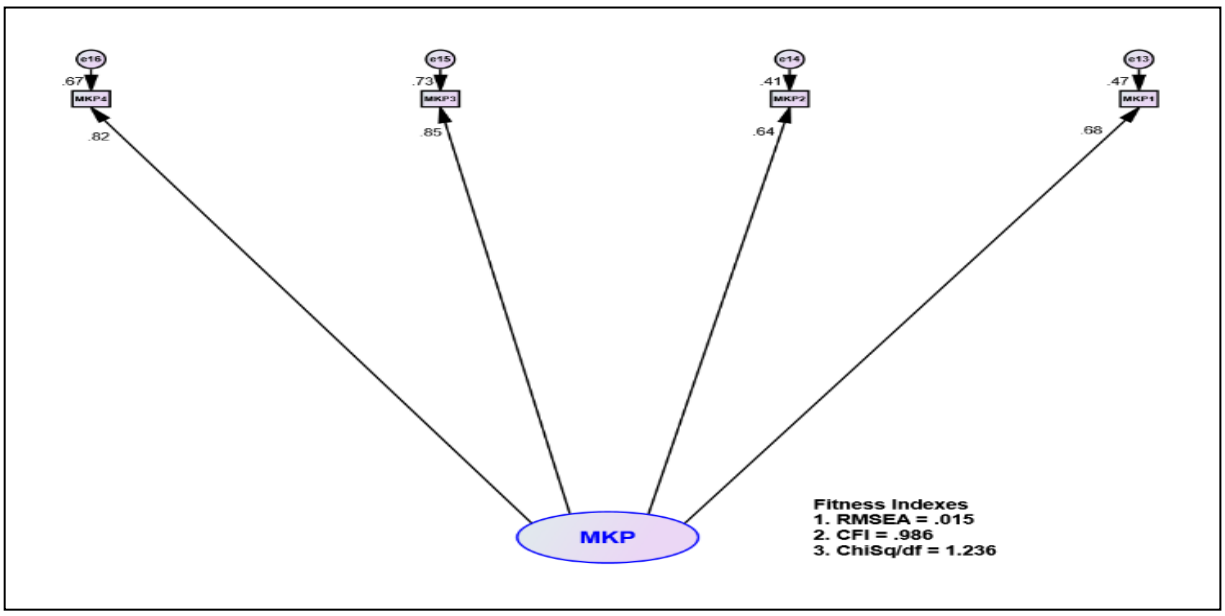

Fig. 5 The Measurement Model of Monitoring Student Progress Construct

CFA Analysis of the Measurement Model for the 'Safeguarding Instructional Time' Construct

Confirmatory Factor Analysis (CFA) was conducted for the "Safeguarding Instructional Time" construct to validate its measurement model and ensure that the observed indicators effectively capture the latent dimension. The results presented in Table VII demonstrate that the construct meets the acceptable criteria for model fit and construct validity. In accordance with best practices in SEM, model fit was evaluated using the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and the Chi-square to degrees of freedom ratio (ChiSq/df) [9], [11].

TABLE VII CFA FIT INDICES FOR THE 'SAFEGUARDING INSTRUCTIONAL TIME' CONSTRUCT

Index Name	Index Value	Result
RMSEA	0.027	Meets required threshold
CFI	0.993	Meets required threshold
ChiSq/df	1.529	Meets required threshold

These results confirm excellent model fit, with RMSEA well below 0.08, CFI above the 0.90 threshold, and ChiSq/df below 3.0. This supports the model's Construct Validity as recommended by [12], [14]. Furthermore, all items in the construct demonstrated factor loadings exceeding 0.60, affirming that each item contributes meaningfully to the latent construct. This also substantiates the unidimensionality and internal consistency of the model. The construct's measurement model is illustrated in Fig. 6, showing the robust item-to-construct relationships and validating the integrity of the "Safeguarding Instructional Time" dimension.

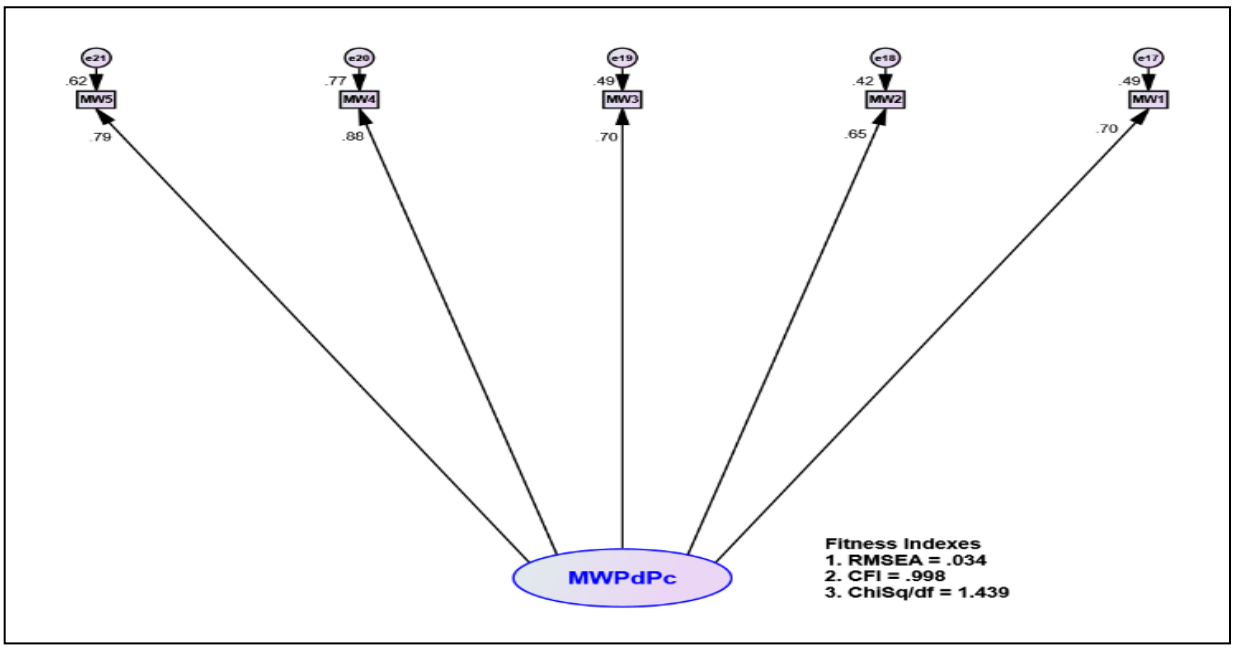

Fig. 6 The Measurement Model of Protecting PdPc Time Construct

CFA Analysis of the Measurement Model for the 'Monitoring Attendance' Construct

The Confirmatory Factor Analysis (CFA) for the "Monitoring Attendance" construct was performed to evaluate the model's fit and the adequacy of its indicators in measuring the latent variable. The results in Table VIII indicate that the measurement model exhibits strong statistical validity. Model fit was assessed using three core indicators: the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), and the Chi-square to degrees of freedom ratio (ChiSq/df), as recommended in structural modeling literature [9], [11].

TABLE VIII CFA FIT INDICES FOR THE 'MONITORING ATTENDANCE' CONSTRUCT

Index Name	Index Value	Result
RMSEA	0.025	Meets required threshold
CFI	0.994	Meets required threshold
ChiSq/df	1.482	Meets required threshold

All three indices fall within the accepted standards—RMSEA < 0.08, CFI > 0.90, and ChiSq/df < 3.0—

indicating that the measurement model for "Monitoring Attendance" demonstrates excellent Construct Validity [12], [14]. In addition, each item in this construct displayed a standardized factor loading above the 0.60 benchmark, which confirms their strong contributions to the latent construct. This also supports the model's unidimensionality and reliability. The finalized structure is depicted in Fig. 7, illustrating the factor loadings and internal relationships of the items within the construct.

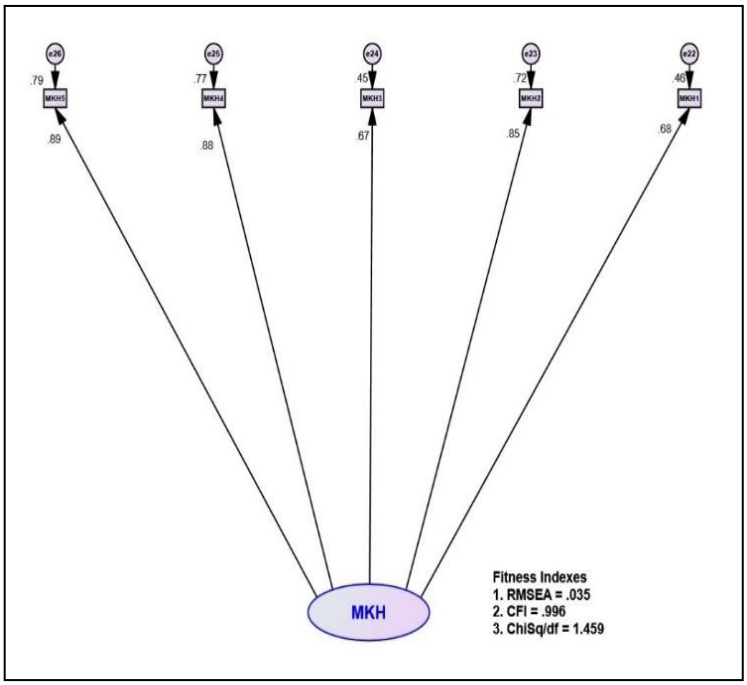

Fig. 7 The Measurement Model of Maintaining Attendance Construct

CFA Analysis of the Measurement Model for the 'Providing Student Incentives' Construct

Confirmatory Factor Analysis (CFA) was conducted to evaluate the measurement model for the "Providing Student Incentives" construct. The objective was to determine whether the observed items validly and reliably reflect the underlying latent variable. Table IX presents the fit indices, all of which meet the established criteria for model adequacy and construct validity. Consistent with structural equation modeling best practices, model fit was evaluated using the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and the Chi-square to degrees of freedom ratio (ChiSq/df), as recommended by [9], [11].

TABLE IX CFA FIT INDICES FOR THE 'PROVIDING STUDENT INCENTIVES' CONSTRUCT

Index Name	Index Value	Result
RMSEA	0.030	Meets required threshold
CFI	0.991	Meets required threshold
ChiSq/df	1.416	Meets required threshold

The results confirm that the model meets all necessary criteria for Construct Validity, with RMSEA well below 0.08, CFI exceeding 0.90, and ChiSq/df under 3.0 [12], [14]. All measurement items demonstrated factor loadings above the 0.60 threshold, confirming their significant contribution to the latent construct. This reinforces the model's unidimensionality and internal consistency, ensuring the construct is measured accurately and reliably.

The complete measurement model is illustrated in Fig. 8, highlighting the interrelationships and loadings for the "Providing Student Incentives" items.

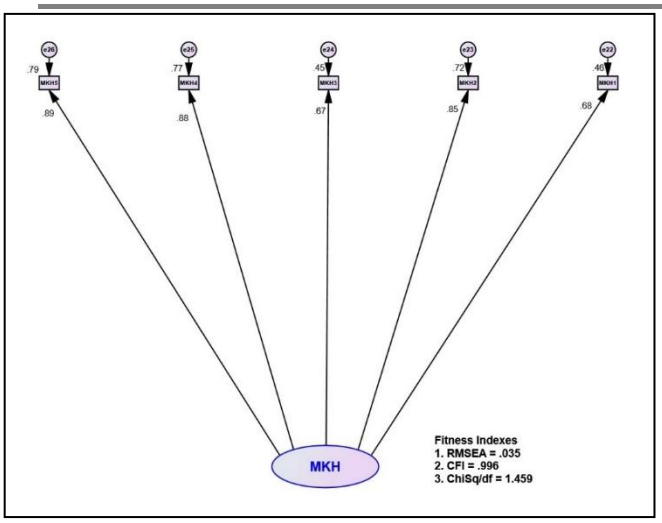

Fig. 8 The Measurement Model of Ulul Albab Approach Construct

CFA Analysis for the Measurement Model of the Ulul Albab Approach Construct

Confirmatory Factor Analysis (CFA) was conducted to validate the measurement model for the Ulul Albab Approach construct. The analysis of the model fit indices, as presented in Table X, indicates that the measurement model satisfies all required thresholds for model adequacy. Specifically, the Root Mean Square Error of Approximation (RMSEA) value of 0.024 falls well below the 0.08 benchmark for acceptable fit. Likewise, the Comparative Fit Index (CFI) of 0.984 exceeds the recommended minimum of 0.90, and the Chi-square to degrees of freedom ratio ($\chi^2/df = 1.879$) remains within the acceptable range of less than 3.0.

These results confirm that the construct validity of the Ulul Albab Approach measurement model has been achieved, ensuring that the observed indicators adequately represent the latent construct [12], [14].

TABLE X MODEL FIT INDICES FOR THE ULUL ALBAB APPROACH CONSTRUCT

Index Name	Index Value	Result
RMSEA	0.024	Meets required threshold
CFI	0.984	Meets required threshold
ChiSq/df	1.879	Meets required threshold

The complete measurement model is illustrated in Fig. 9, confirm that the measurement model for the Ulul Albab Approach meets all statistical criteria for construct validity and can be reliably utilized in subsequent structural analyses.

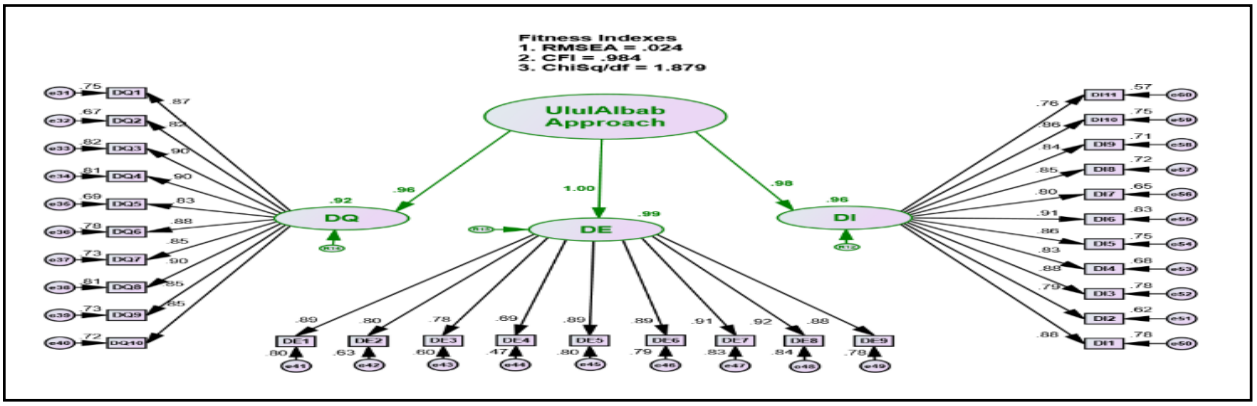

Fig. 9 The Measurement Model of Ulul Albab Approach Construct

CFA Analysis of the Measurement Model for the 'Holistic Student Outcomes' Construct

The Confirmatory Factor Analysis (CFA) was conducted to validate the "Holistic Student Outcomes" construct, representing the multidimensional achievements of students nurtured through the Ulul Albab educational paradigm. This construct encapsulates key attributes such as spiritual commitment, cognitive excellence, socio-cultural engagement, and career readiness—outcomes aligned with the goals of Islamic holistic education. As presented in Table XI, the CFA results confirm excellent model fit across the major categories of goodness-of-fit indices.

TABLE XI CFA FIT INDICES FOR THE 'HOLISTIC STUDENT OUTCOMES' CONSTRUCT

Index Name	Index Value	Result
RMSEA	0.049	Meets required threshold
CFI	0.981	Meets required threshold
ChiSq/df	1.415	Meets required threshold

These values indicate that the model meets all conventional SEM thresholds [11], [12]. The RMSEA is below 0.08, the CFI exceeds 0.90, and the ChiSq/df is well within the acceptable range under 3.0, confirming Construct Validity. All individual indicators exhibited standardized factor loadings above 0.60, affirming the model's internal consistency and unidimensionality. Thus, the "Holistic Student Outcomes" construct is a reliable and coherent measure of student development under the Ulul Albab model. The validated model is visually represented in Fig. 10, illustrating the strength and alignment of contributing dimensions.

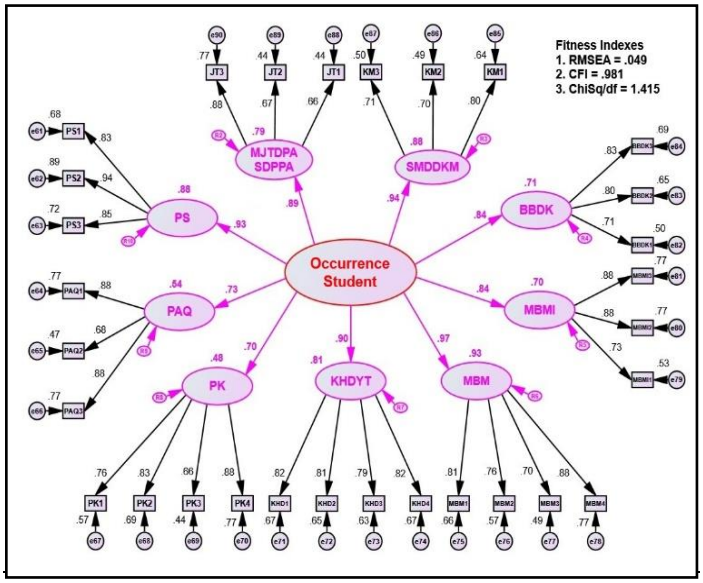

Fig. 10 The Measurement Model of Holistic Student Outcomes

Combined Confirmatory Factor Analysis (Pooled CFA) of All Measurement Models

To assess the overall structural integrity of the full measurement model, a Pooled Confirmatory Factor Analysis (Pooled CFA) was conducted. This approach is essential for verifying the Discriminant Validity of the constructs, ensuring that each construct measures a distinct concept within the model. According to [12], [14], if the correlation between two constructs exceeds 0.85, it indicates redundancy and potential multicollinearity.

In models involving second-order constructs—constructs composed of multiple dimensions—researchers often face challenges combining all sub-constructs in a single model. To overcome this, each sub-construct was reduced to a first-order model using mean item scores per dimension, allowing for an integrated Pooled CFA analysis.

Fig. 11 illustrates the Pooled CFA results, where single-headed arrows represent factor loadings of individual items, and double-headed arrows denote correlations between constructs. The model fit indices in Table XII confirm that the overall measurement model meets the required thresholds across all fit categories:

TABLE XII FIT INDICES FOR POOLED CFA ACROSS ALL CONSTRUCTS

Index Name	Index Value	Result
RMSEA	0.057	Meets required threshold
CFI	0.973	Meets required threshold
ChiSq/df	2.242	Meets required threshold

These results confirm the model's construct validity and support its continued use for further structural modeling.

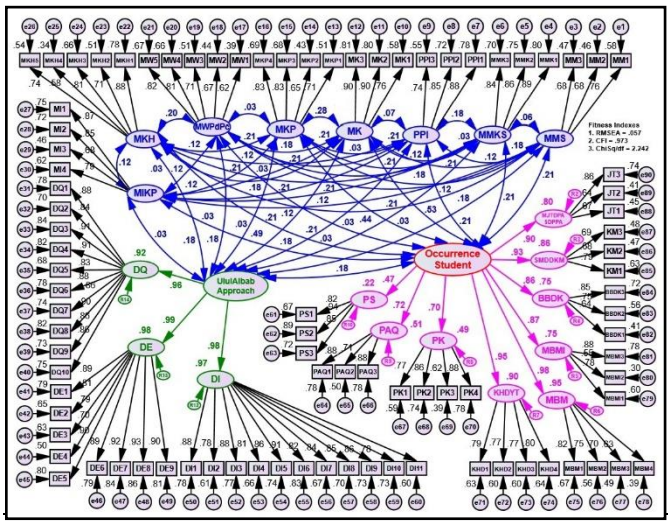

Fig. 11 Pooled CFA Analysis Findings

Discriminant Validity Analysis

Discriminant Validity ensures that each construct is statistically distinct from others, avoiding multicollinearity and redundancy [12]. Table XIII presents the Discriminant Validity Index Summary, where the diagonal elements represent the square root of the Average Variance Extracted (AVE) for each construct, and the off-diagonal elements represent the correlation coefficients between constructs.

TABLE XIII DISCRIMINANT VALIDITY INDEX SUMMARY

Constructs	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Formulating School Goals (a)	**0.88**									
Delivering the School Curriculum (b)	0.06	**0.87**								
Instructional Supervision &	0.12	0.18	**0.80**							

Evaluation (c)										
Coordinating Curriculum (d)	0.21	0.12	0.07	**0.85**						
Monitoring Student Progress (e)	0.21	0.21	0.03	0.28	**0.82**					
Safeguarding Instructional Time (f)	0.21	0.21	0.21	0.18	0.03	**0.81**				
Monitoring Attendance (g)	0.03	0.03	0.12	0.12	0.12	0.20	**0.86**			
Providing Student Incentives (h)	0.21	0.21	0.18	0.12	0.12	0.12	0.12	**0.85**		
Ulul Albab Approach (i)	0.18	0.21	0.21	0.12	0.03	0.18	0.18	0.03	**0.98**	
Holistic Student Outcomes (j)	0.21	0.21	0.21	0.53	0.03	0.03	0.18	0.18	0.18	**0.86**

According to Fornell and Larcker's criterion, Discriminant Validity is confirmed when the square root of AVE for a construct (diagonal values) exceeds its correlations with all other constructs (off-diagonal values). As demonstrated in Table XIII, each construct meets this criterion, confirming the distinctiveness of each domain within the model.

DISCUSSION

The findings from the Confirmatory Factor Analysis (CFA) and Pooled CFA procedures provide strong empirical support for the validity and reliability of the measurement model constructed in this study. The model was developed to assess the multidimensional nature of Principals' Instructional Leadership, the Ulul Albab Educational Framework, and Holistic Student Outcomes in selected Terengganu state secondary schools.

A. Validation of Constructs

Each construct within the model achieved acceptable thresholds for model fit, including RMSEA, CFI, and ChiSq/df, aligning with established standards in structural equation modeling [7], [11], [12]. Notably, all item loadings exceeded the 0.60 benchmark, affirming the internal consistency and unidimensionality of the constructs. The CFA results affirm that the domains of instructional leadership—ranging from formulating school goals to providing student incentives—are empirically distinguishable yet interrelated, supporting the theoretical foundation proposed by [3], [6]. Likewise, the three dimensions of the Ulul Albab framework (Quranic, Encyclopedic, and Ijtihadic) exhibit internal coherence, reflecting their spiritual-intellectual integration as promoted in Malaysia's Integrated Education Model.

B. Pooled CFA and Discriminant Validity

The pooled CFA confirmed the overall fitness of the combined measurement model. Importantly, none of the

construct correlations exceeded the 0.85 threshold, and the Discriminant Validity Index Summary revealed that all square roots of AVE values were greater than the inter-construct correlations. This confirms that all latent variables measured distinct concepts, free from multicollinearity or redundancy [13], [14].

The successful execution of the Pooled CFA affirms the structural soundness of the integrated model, which is essential for subsequent hypothesis testing and structural modeling phases. The findings provide a validated baseline for future empirical studies on Islamic educational leadership and holistic student development.

C. Theoretical and Practical Implications

From a theoretical perspective, this study contributes to the literature on instructional leadership and Islamic education by operationalizing the Ulul Albab model through psychometrically validated constructs. The study bridges the gap between conceptual frameworks and empirical validation, offering a robust measurement tool for future research.

Practically, the findings support educational leaders and policymakers in adopting a more nuanced, culturally grounded approach to school leadership and student assessment. The validated instrument can inform leadership training programs, school improvement initiatives, and policy interventions aligned with national education goals emphasizing spiritual, intellectual, and ethical excellence.

CONCLUSION AND RECOMMENDATIONS

In conclusion, this study has successfully validated a comprehensive measurement model integrating Principals' Instructional Leadership, the Ulul Albab Educational Framework, and Holistic Student Outcomes through rigorous Confirmatory Factor Analysis (CFA) and Pooled CFA. The empirical results confirm that all constructs achieved acceptable model fit, strong internal reliability, and clear discriminant validity, signifying the robustness of the conceptual framework.

By empirically validating leadership practices aligned with the Ulul Albab paradigm, the research underscores the relevance of integrating spiritual, intellectual, and ethical values into contemporary educational leadership. These findings affirm the multidimensional nature of effective school leadership in Islamic educational contexts and support the use of the model as a diagnostic and developmental tool for enhancing school effectiveness.

Based on the findings of this study, several practical and research-oriented recommendations are proposed. First, it is recommended that educational policymakers, particularly within the Ministry of Education, integrate the validated constructs from this study into national leadership development frameworks. This is particularly pertinent for Islamic education systems where value-based leadership is essential. Second, the eight domains of instructional leadership identified through this model—ranging from curriculum delivery to safeguarding instructional time—should be systematically embedded into leadership training and professional development programs. Such integration would support the cultivation of holistic, ethically grounded, and pedagogically competent school leaders.

Third, future research should extend the validation of this model across diverse educational settings—including public, private, religious, and international schools—to test its generalizability and explore cultural and contextual variations. Fourth, longitudinal studies are recommended to assess the long-term effects and sustainability of leadership practices derived from the Ulul Albab framework, particularly their impact on student outcomes over time. Finally, the validated measurement model holds potential for practical application as a school self-assessment instrument. Schools can employ this model to evaluate their leadership effectiveness and identify areas requiring strategic improvement in pursuit of holistic student development.

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