

Developing a 3SI Holistic Educational Leadership Model Using Sequential Mixed-Methods SEM-PLS: Evidence from Disadvantaged Schools in Indonesia

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ABSTRACT: This study addresses the limited integration of spiritual, service-oriented, and innovation-based leadership in schools located in disadvantaged regions of Indonesia. Existing leadership models tend to emphasize managerial and transformational dimensions while overlooking holistic and context-sensitive approaches. This study aims to develop and validate a holistic educational leadership model, namely the 3SI model (Self, Spirit, Service, Innovation), using a sequential exploratory mixed-methods design. Qualitative data were collected through in-depth interviews, observations, and document analysis, leading to the construction of the 3SI framework. The model was then quantitatively tested using SEM-PLS involving 50 principals and 150 teachers. The results indicate that holistic leadership significantly affects educational service quality ($\beta = 0.773$, $p < 0.001$) and teacher job satisfaction ($\beta = 0.567$, $p < 0.001$). Service and innovation dimensions show the strongest effects. The model demonstrates high validity ($AVE > 0.5$) and reliability ($CR > 0.9$). This study contributes a novel integrative leadership model that combines spiritual, relational, and adaptive dimensions, offering a contextually grounded framework for improving school performance in resource-constrained settings.

Keywords: Holistic leadership; SEM-PLS; mixed-methods; educational service quality; teacher job satisfaction; disadvantaged schools.

ABSTRAK: Studi ini membahas terbatasnya integrasi kepemimpinan spiritual, berorientasi pelayanan, dan berbasis inovasi di sekolah-sekolah yang terletak di daerah-daerah kurang mampu di Indonesia. Model kepemimpinan yang ada cenderung menekankan dimensi manajerial dan transformasional sambil mengabaikan pendekatan holistik dan kontekstual. Studi ini bertujuan untuk mengembangkan dan memvalidasi model kepemimpinan pendidikan holistik, yaitu model 3SI (Diri, Rohani, Pelayanan, Inovasi), menggunakan desain metode campuran eksploratif sekuensial. Data kualitatif dikumpulkan melalui wawancara mendalam, observasi, dan analisis dokumen, yang mengarah pada pembangunan kerangka kerja 3SI. Model tersebut kemudian diuji secara kuantitatif menggunakan SEM-PLS yang melibatkan 50 kepala sekolah dan 150 guru. Hasil menunjukkan bahwa kepemimpinan holistik secara signifikan mempengaruhi kualitas pelayanan pendidikan ($\beta = 0,773$, $p < 0,001$) dan kepuasan kerja guru ($\beta = 0,567$, $p < 0,001$). Dimensi pelayanan dan inovasi menunjukkan pengaruh terkuat. Model ini menunjukkan validitas tinggi ($AVE > 0,5$) dan reliabilitas ($CR > 0,9$). Studi ini memberikan kontribusi berupa model kepemimpinan integratif baru yang menggabungkan dimensi spiritual, relasional, dan adaptif, menawarkan kerangka kerja yang berlandaskan konteks untuk meningkatkan kinerja sekolah di lingkungan dengan keterbatasan sumber daya.

Kata kunci: Kepemimpinan holistik; SEM-PLS; metode campuran; kualitas layanan pendidikan; kepuasan kerja guru; sekolah kurang mampu.

INTRODUCTION

Education is a key pillar of national development. However, the gap in education quality between developed and underdeveloped regions in Indonesia remains a serious issue that has not been fully addressed. Field realities show that schools in underdeveloped, frontier, and outermost regions often face various structural and cultural barriers to optimally implementing the educational process. Limited infrastructure, a shortage of qualified teaching staff, and a weak educational management system are some of the factors contributing to the low quality of educational services in these regions (Maulana et al., 2021). In this context, principal leadership plays a strategic role as a key driver of school transformation, particularly in creating a conducive learning climate and supporting continuous improvement in educational quality.

Various studies have shown that the quality of principal leadership is directly proportional to the level of learning effectiveness and student achievement (Leithwood et al., 2008; Hallinger & Heck, 2010). However, a leadership approach that solely emphasizes administrative and managerial dimensions is no longer adequate to address the complex challenges of education today, especially in environments rife with limitations such as underdeveloped regions. Therefore, a new paradigm in educational leadership is needed that is more adaptive, integrative, and contextual, capable of holistically combining spiritual, social, and innovative dimensions.

In this study, a holistic educational leadership model, known as the 3SI model (Self, Spirit, Service, Innovation), is developed. This model is based on the belief that effective leadership in schools is determined not only by technical skills, but also by the personal qualities, spiritual integrity, spirit of service, and ability to innovate possessed by the principal. Holistic leadership offers a comprehensive approach to viewing the role of the principal, not merely as a manager of an educational institution, but as an agent of change capable of inspiring, empowering, and humanizing the entire school community.

Conceptually, holistic leadership overlaps with various contemporary leadership theories such as transformational leadership, spiritual leadership, servant leadership, and innovative leadership. Transformational leadership emphasizes the importance of vision, inspiration, and motivation for change (Bass & Avolio, 1994). Spiritual leadership emphasizes transcendental values such as sincerity, honesty, and meaningful work (Fry, 2003). Servant leadership, meanwhile, positions leaders as servants who prioritize the interests of others (Greenleaf, 1977), and innovative leadership requires leaders to think creatively and respond dynamically to change (Mumford et al., 2002). In the 3SI model, these four approaches are combined into a conceptual whole that is mutually reinforcing and relevant for application in the context of education in underdeveloped areas.

Although the literature on school leadership is quite developed in Indonesia, studies specifically addressing the holistic leadership model based on the 3SI model in the context of underdeveloped regions are still very limited. Most previous research has focused solely on transformational or managerial leadership (Fitriah et al., 2020; Nurlina, 2021), without deeply exploring the integration of

spirituality, service, and innovation in principal leadership practices. This indicates a research gap that needs to be filled through comprehensive and contextual studies. Furthermore, the complexity of educational issues in the 3T (outlying and remote) regions demands solutions that are not partial, but rather systemic and based on the noble values entrenched in the local community.

Despite the growing body of literature on educational leadership, most studies tend to focus on singular leadership paradigms such as transformational or instructional leadership without integrating multiple dimensions into a unified framework. In addition, limited empirical studies have employed mixed-methods approaches combined with SEM-PLS analysis to validate leadership models in disadvantaged educational contexts. This indicates a critical gap in the development of a comprehensive, context-sensitive, and empirically validated holistic leadership model that integrates self-awareness, spirituality, service orientation, and innovation.

This study offers a novel contribution by proposing and empirically validating a holistic leadership model (3SI) that integrates four key dimensions: Self, Spirit, Service, and Innovation, within a single framework. Unlike previous models, this approach is developed through a sequential exploratory mixed-methods design, ensuring both contextual relevance and statistical robustness.

Therefore, this study aims to: (1) identify effective principal leadership practices in disadvantaged educational contexts; (2) develop a holistic leadership model based on empirical findings; and (3) examine the structural relationships between leadership dimensions, educational service quality, and teacher job satisfaction using SEM-PLS.

Theoretically, this study is expected to contribute to the development of educational leadership theory, particularly in the context of developing countries. The resulting 3SI model can serve as a conceptual alternative for policymakers and education practitioners in designing strategies to improve educational quality based on holistic values. Practically, this model can be used by principals as a guide in developing more humane, contextual, and impactful leadership. Furthermore, the results of this study can also be used by principal training and professional development institutions to enrich training materials relevant to field needs. Thus, this research is not only academically significant but also highly relevant to national education transformation efforts, particularly in accelerating equitable education quality across Indonesia. In a constantly changing global environment, education in underdeveloped regions requires leaders who are not only intellectually intelligent but also spiritually strong, caring for others, and open to innovation. Holistic leadership is the answer to the demands of the times, which require a holistic leadership approach, oriented toward sustainability, and able to bridge local values with global challenges.

Leadership in education plays a highly strategic role in determining the direction, process, and outcomes of education delivery in schools. In the context of modern educational management, the principal's leadership is no longer merely defined as administrative management but has shifted to being an agent of change and a key inspirator in creating a healthy organizational culture and meaningful

learning (Bush, 2008). In an increasingly complex environment, particularly in underdeveloped regions, the role of leadership becomes even more crucial because limited resources require leaders who are not only technically competent but also possess a deep vision, social sensitivity, and high moral integrity. This underlies the importance of a holistic leadership approach in addressing the challenges of educational transformation.

Conceptually, holistic leadership refers to a leadership approach that views leaders as whole individuals capable of integrating personal, spiritual, social, and innovative aspects in their leadership practices (Milliman et al., 2003; Senge et al., 2004). This leadership focuses not only on achieving organizational goals but also on developing the potential of all organizational members as a whole. In the educational context, this approach enables principals to foster a humanistic, collaborative, and reflective school climate.

The holistic leadership model developed in this study is known as the 3SI model, which consists of four main dimensions: Self (self-awareness and personal reflection), Spirit (spiritual and moral values), Service (service orientation to the school community), and Innovation (the ability and courage to innovate). The Self dimension emphasizes the importance of principals having high self-awareness, recognizing their strengths and weaknesses, and possessing emotional resilience in navigating organizational dynamics (Avolio & Gardner, 2005). The Spirit dimension refers to the internalization of spiritual values in leadership, such as honesty, sincerity, empathy, and genuineness in carrying out the role of leader (Fry, 2003). Meanwhile, Service reflects a servant leadership approach that places the interests of teachers, students, and the community at the center of every leadership decision (Greenleaf, 1977). Finally, the Innovation dimension requires principals to be adaptive to change, encourage creativity, and create breakthroughs in educational governance (Mumford et al., 2002).

The integration of these four dimensions reflects a systemic perspective of leadership, where personal awareness, moral integrity, relational engagement, and innovation capacity interact dynamically. This holistic configuration is particularly relevant in disadvantaged educational contexts, where leadership effectiveness depends not only on technical skills but also on values, adaptability, and community engagement.

Although these leadership theories provide valuable insights, they tend to operate in isolation, emphasizing specific dimensions such as vision (transformational), morality (spiritual), or service (servant leadership). Few studies have attempted to integrate these dimensions into a comprehensive framework that simultaneously addresses personal, relational, moral, and adaptive capacities of school leaders. As a result, existing models remain fragmented and insufficient to address complex educational challenges, particularly in disadvantaged contexts.

Table 1. Comparison of Leadership Models in Education

Model	Key Focus	Strength	Limitation
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Transformational	Vision & motivation	Drives change	Lacks spirituality
Servant	Service to others	Builds trust	Weak innovation
Spiritual	Meaning & values	Strong ethics	Hard to operationalize
Instructional	Teaching quality	Academic focus	Narrow scope
3SI Model	Integrated approach	Holistic	—

To address these limitations, this study proposes a holistic leadership model that integrates four essential dimensions: Self (self-awareness), Spirit (spiritual values), Service (relational orientation), and Innovation (adaptive capacity). This integrative approach is expected to provide a more comprehensive framework for understanding and improving leadership practices in disadvantaged educational settings.

Table 2. Description of Dimensions and Indicators of the 3SI Holistic Leadership Model (Source: Processed by Researchers, 2025)

Dimension	Indicator	Indicator Dimension
Self	Self-Awareness	The principal is able to recognize personal strengths and weaknesses in leadership.
	Self-Control	The principal is able to manage emotions and actions in difficult situations.
	Personal Reflection	The principal regularly evaluates his or her leadership behavior and decisions
Spirit	Spiritual values	Leadership is based on sincerity, honesty, and exemplary behavior.
	Transcendental Vision	The principal has a goal orientation that transcends personal interests.
	Faith-Based Motivation	Decision-making is based on ethical and religious values.
Service	Caring for the school community	The principal actively listens to and serves the needs of teachers, students, and parents.
	Participatory Leadership	The principal involves the entire school community in the decision-making process.
	Collective Service	The principal encourages a spirit of mutual cooperation and collaboration.
Innovation	Creative problem-solving	The principal seeks innovative solutions to school problems.

	Adaptation to Change	The principal quickly responds to changes in educational policies and contexts.
	Learning Innovation	The principal encourages teachers to develop new, context-appropriate learning methods.

Several studies support a positive relationship between a holistic leadership approach and improved quality of educational services. Leithwood et al. (2008) stated that leaders who integrate moral vision with professional competence have been shown to be more successful in creating a positive school climate. A study by Yammarino et al. (2008) found that leadership that integrates spiritual and service dimensions has a significant impact on teacher job satisfaction and engagement in the learning process. In Indonesia, a study by Suryani and Wahyudi (2020) showed that principals who apply transformational and servant leadership principles tend to be more successful in improving teacher discipline, student engagement, and parent participation.

However, the literature on principal leadership in Indonesia largely focuses on two main poles: transformational leadership and instructional leadership. This approach emphasizes the importance of the principal as the visionary and controller of the learning process (Hallinger, 2011). While this approach has made positive contributions, it does not fully address the complex challenges faced by schools in disadvantaged areas, which have different social, cultural, and economic contexts than schools in urban areas. This is where holistic leadership plays a strategic role as a more comprehensive approach rooted in local values.

In the context of underdeveloped regions in Indonesia, education faces various obstacles such as limited availability of facilities and infrastructure, limited access to teacher training, weak supervision, and low student motivation due to social and economic pressures (Maulana et al., 2021; Directorate General of Primary and Secondary Education, 2022). Principals are required not only to function as bureaucratic managers but also as community leaders capable of building strong social relationships, exploring local potential, and motivating the school community to collectively create change. In this context, the spiritual and service dimensions are crucial, as they serve as sources of moral and ethical strength in carrying out leadership duties. Furthermore, the innovation dimension also plays a crucial role in leadership in underdeveloped regions. Various studies have shown that leadership innovation can overcome resource constraints through alternative strategies such as utilizing simple technology, community-based resource management, and creating contextual learning programs relevant to students' lives (Zhao, 2012; Winarti et al., 2019). An innovative principal can be a catalyst for change who is able to create leaps of progress even in very limited conditions.

The concept of educational service quality is also a key point in this discourse. According to Parasuraman et al. (1985), service quality encompasses five main dimensions: reliability, responsiveness, assurance, empathy, and

tangibles. In the school context, these dimensions are translated into professional service from teachers, open communication with students and parents, the provision of a safe and comfortable learning environment, and the accessibility of educational services for all levels of society. Principal leadership significantly influences this service quality, as school leaders play a role in managing resources, motivating teachers, communicating with stakeholders, and ensuring effective program implementation (Ng, 2015).

The literature also demonstrates a strong relationship between leadership quality and teacher job satisfaction. Teachers who feel valued, supported, and involved in decision-making processes tend to have higher work motivation and commitment to their duties (Klassen & Chiu, 2010). Therefore, the 3SI leadership model developed in this study has significant potential to increase teacher job satisfaction as part of a strategic effort to improve the quality of educational services in underdeveloped regions.

Although the holistic leadership approach has been widely discussed in the international literature, it is rarely integrated into the practical context of educational leadership, especially in regions with limited conditions such as Indonesia. Studies by Milliman et al. (2003) and Reave (2005) emphasize that a holistic approach requires a deep understanding of the local context and sensitivity to socio-cultural dynamics. In this regard, an overly universalistic approach can fail to address the real needs of the community. Therefore, the 3SI model, developed through a grounded and contextual approach, makes an important contribution to broadening the horizons of educational leadership practice in developing countries. Based on the theoretical and empirical review, the following hypotheses are proposed:

- H1: Holistic leadership (3SI) has a significant positive effect on educational service quality.
- H2: Holistic leadership has a significant positive effect on teacher job satisfaction.
- H3: Educational service quality has a significant positive effect on teacher job satisfaction.

Methodologically, the approach used in developing this model is based on a sequential exploratory mixed-methods design, which combines the strengths of qualitative data in capturing social realities with the precision of quantitative data in examining relationships between variables. This approach supports the importance of data triangulation and more comprehensive analysis in developing a model that is not only theoretical but also applicable (Creswell & Plano Clark, 2018). Through narrative analysis of the experiences of principals and teachers, dimensions of holistic leadership were formulated, then their validity was tested through quantitative measurements using the SEM-PLS technique.

Referring to various literature and previous empirical findings, it can be concluded that the development of a holistic leadership model based on the 3SI (Three Signs of Success) is a relevant and strategic response to the need for

educational transformation in Indonesia's underdeveloped regions. This model not only strengthens principal leadership from a technical perspective but also builds a solid moral and social foundation for creating high-quality, inclusive, and sustainable schools. The integration of spiritual values, a spirit of service, self-awareness, and innovation is a key strength in addressing the multidimensional challenges of education in this era of disruption.

The conceptual framework of this study positions holistic leadership (3SI) as an exogenous variable influencing educational service quality and teacher job satisfaction. Educational service quality also acts as a mediating variable. Based on the results of the literature review and analysis of the educational context in underdeveloped regions, the conceptual model of holistic leadership based on the 3SI was formulated, as shown in Figure 1.

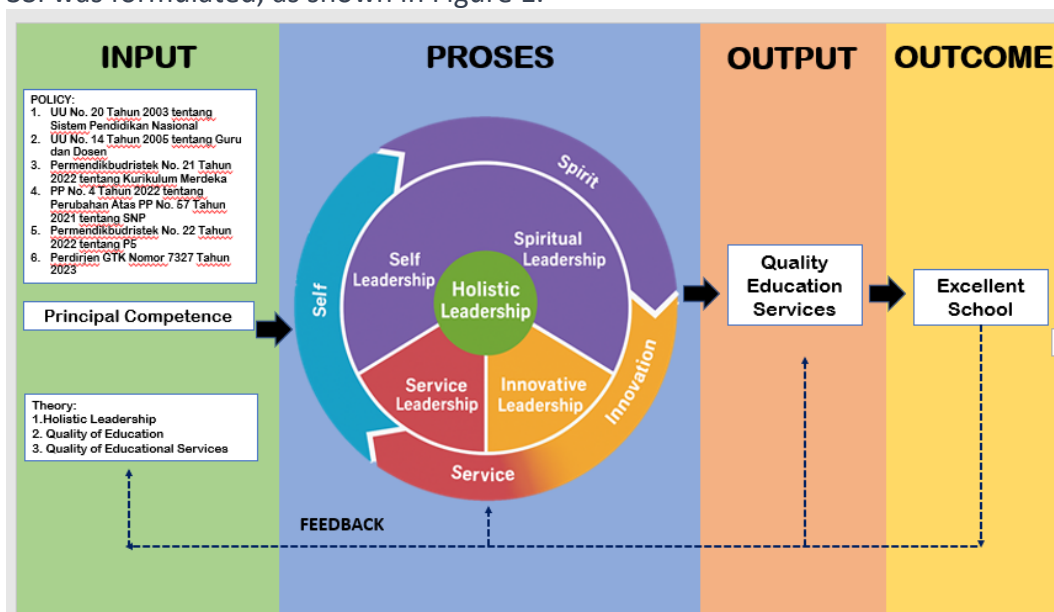


Figure 1. 3SI Conceptual Model of Holistic Leadership (Source: Processed by Researcher)

RESEARCH METHOD

Research Design

This study employed a sequential exploratory mixed-methods design, in which qualitative data collection and analysis were conducted in the first phase to explore leadership practices and develop the conceptual model, followed by quantitative analysis to test and validate the model using Structural Equation Modeling–Partial Least Squares (SEM-PLS). This design was selected to ensure that the proposed model was grounded in empirical field data before being statistically examined (Creswell & Plano Clark, 2018).

The use of a mixed-methods approach allows for a more comprehensive understanding of leadership phenomena by integrating the depth of qualitative insights with the generalizability of quantitative findings. This approach is particularly relevant in complex educational settings, such as disadvantaged

regions, where contextual and socio-cultural factors significantly influence leadership practices.

Research Setting and Participants

The study was conducted in junior high schools located in disadvantaged areas of Rokan Hilir Regency, Riau Province, Indonesia. These schools were selected due to their representation of 3T (underdeveloped, frontier, and outermost) characteristics, including limited infrastructure, teacher shortages, and low community participation.

In the qualitative phase, participants were selected using purposive sampling, consisting of school principals, teachers, and school supervisors who were actively involved in school leadership practices and able to provide in-depth information.

In the quantitative phase, a total of 200 respondents participated, comprising 50 school principals and 150 teachers. The sample was selected using stratified cluster sampling based on school status (public and private) and geographical distribution. This sample size meets the recommended minimum requirements for SEM-PLS analysis, which is suitable for complex models with relatively small sample sizes (Hair et al., 2021).

Instrument Development

The research instrument was developed based on qualitative findings and supported by relevant theoretical frameworks in educational leadership. The qualitative phase generated key themes that formed the basis for constructing a structured questionnaire.

A Likert-scale questionnaire was developed to measure the four dimensions of the 3SI model: Self, Spirit, Service, and Innovation, along with outcome variables including educational service quality and teacher job satisfaction. Each construct was operationalized into several indicators derived from both empirical findings and prior studies.

Prior to the main data collection, the instrument was reviewed by experts in educational leadership and pilot-tested to ensure clarity, relevance, and content validity. Necessary revisions were made based on feedback from the pilot study.

Data Collection Procedures

Data collection was conducted in two sequential phases. In the first phase, qualitative data were collected through in-depth interviews, participant observation, and document analysis. Interviews were conducted using semi-structured guidelines focusing on leadership practices, values, and challenges faced by school principals in disadvantaged contexts. Observations were used to capture leadership behaviors in natural settings, while documents such as school reports and policies were analyzed to support data triangulation.

In the second phase, quantitative data were collected using a structured questionnaire distributed to principals and teachers. The data collection process ensured adequate representation across different school types and locations.

Qualitative Data Analysis

Qualitative data were analyzed using thematic analysis, involving three stages: open coding, axial coding, and selective coding. In the open coding stage, raw data were broken down into meaningful units. For example, statements such as “the principal consistently listens to teachers’ concerns” were coded as participatory leadership. In the axial coding stage, these codes were grouped into broader categories, such as the service dimension. Finally, in the selective coding stage, core themes were identified and integrated into the overarching concept of holistic leadership (3SI model). This systematic coding process ensured the identification of patterns, relationships, and key constructs that informed the development of the research model.

Quantitative Data Analysis

Quantitative data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the SmartPLS 3.3 software. This method was chosen due to its suitability for complex models, predictive analysis, and relatively small sample sizes. The analysis involved two main stages: evaluation of the measurement model and evaluation of the structural model.

Measurement Model Evaluation

- Convergent validity was assessed through factor loadings (> 0.70) and Average Variance Extracted ($AVE > 0.50$).
- Discriminant validity was evaluated using the Heterotrait–Monotrait ratio ($HTMT < 0.90$).
- Reliability was assessed using Cronbach’s Alpha and Composite Reliability (> 0.70).

Structural Model Evaluation

- Coefficient of determination (R^2) was used to measure the explanatory power of the model.
- Effect size (f^2) was calculated to evaluate the contribution of each exogenous variable.
- Predictive relevance (Q^2) was assessed using the blindfolding procedure.
- Path coefficients and significance levels were evaluated using bootstrapping techniques.

Validity and Reliability

To ensure the rigor of the study, both validity and reliability were systematically assessed. Convergent validity was confirmed through AVE values exceeding 0.50, while discriminant validity was established using the HTMT criterion. Internal consistency reliability was ensured through Cronbach’s Alpha and Composite Reliability values above the recommended threshold. Additionally, methodological triangulation was applied by integrating qualitative and quantitative findings, enhancing the credibility and robustness of the research results.

Ethical Considerations

Ethical considerations were strictly observed throughout the research process. All participants were informed about the purpose of the study and provided informed consent prior to participation. Confidentiality and anonymity were maintained, and participants were assured of their right to withdraw from the study at any time. The study adhered to ethical standards in educational research, ensuring that no harm was caused to participants and that all data were used solely for academic purposes.

RESULT AND DISCUSSION

Qualitative Findings: Emergence of the 3SI Leadership Dimensions

The qualitative phase aimed to explore leadership practices in disadvantaged educational contexts. Data obtained from in-depth interviews, observations, and document analysis revealed four dominant dimensions of holistic leadership, which were subsequently conceptualized as the 3SI model: Self, Spirit, Service, and Innovation.

The Self dimension reflects principals' capacity for self-awareness, emotional regulation, and reflective practice. Participants emphasized the importance of understanding personal strengths and limitations in leading schools under challenging conditions. The Spirit dimension highlights the role of spiritual and moral values, such as sincerity, integrity, and a sense of purpose, in guiding leadership decisions. Many respondents indicated that ethical considerations and religious values strongly influenced their leadership behavior. The Service dimension captures the relational orientation of principals, particularly their commitment to serving teachers, students, and the community. This includes participatory decision-making, empathy, and collaborative problem-solving. The Innovation dimension represents principals' ability to develop adaptive strategies and creative solutions despite limited resources. Examples include the use of simple technologies, community-based programs, and context-relevant learning innovations. These qualitative findings provided the empirical foundation for constructing the measurement model used in the quantitative phase.

Measurement Model Evaluation

The measurement model was evaluated to assess the validity and reliability of the constructs.

Convergent Validity

Convergent validity was assessed based on factor loadings and Average Variance Extracted (AVE). All indicator loadings exceeded the threshold of 0.70, indicating strong item reliability. Furthermore, all constructs achieved AVE values above 0.50, confirming adequate convergent validity.

Reliability Analysis

Internal consistency reliability was evaluated using Cronbach's Alpha and Composite Reliability (CR). As shown in Table 3, all constructs demonstrated high reliability, with values exceeding the recommended threshold of 0.70.

Table 3. Construct Validity and Reliability Test Results (Source: Processed by Researchers, 2025)

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Self	0.923	0.930	0.940	0.723
Spirit	0.889	0.889	0.931	0.818
Service	0.952	0.955	0.962	0.809
Innovation	0.915	0.918	0.946	0.855

Discriminant Validity

Discriminant validity was assessed using the Heterotrait–Monotrait ratio (HTMT). All HTMT values were below the threshold of 0.90, indicating that each construct was empirically distinct and measured different concepts.

Structural Model Evaluation

The structural model was analyzed to examine the relationships among variables and test the proposed hypotheses.

Coefficient of Determination (R^2)

The results indicate that holistic leadership explains a substantial proportion of variance in the endogenous variables: 1) Educational Service Quality: $R^2 = 0.59$ (moderate); 2) Teacher Job Satisfaction: $R^2 = 0.47$ (moderate). These values suggest that the model has adequate explanatory power.

Hypothesis Testing

Hypothesis testing was conducted using bootstrapping procedures. The results are presented in Table 4.

Table 4. Path Coefficients and Hypothesis Testing (Source: Processed by Researchers, 2025)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Leadership -> Teacher Job Satisfaction	0.567	0.617	0.141	4.009	0.000
Leadership -> Service Quality	0.773	0.777	0.079	9.841	0.000

Service Quality -> Teacher Job Satisfaction	0.420	0.367	0.151	2.778	0.005
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Effect Size (f^2)

Effect size analysis showed that the influence of holistic leadership on educational service quality was strong, while its effect on teacher job satisfaction was moderate. Educational service quality also demonstrated a moderate effect on teacher job satisfaction.

Predictive Relevance (Q^2)

The Q^2 values obtained through blindfolding procedures were above zero, indicating that the model has predictive relevance for both endogenous variables.

Discussion

This study aimed to develop and validate a holistic educational leadership model (3SI) that integrates self-awareness, spirituality, service orientation, and innovation in the context of disadvantaged schools. The findings provide strong empirical support for the proposed model and offer important insights into how leadership can drive school transformation under resource constraints.

First, the findings confirm that holistic leadership significantly influences educational service quality. This result reinforces previous studies highlighting the critical role of leadership in shaping school effectiveness (Leithwood et al., 2008; Hallinger & Heck, 2010). However, unlike prior studies that primarily emphasize transformational or instructional leadership, this study demonstrates that leadership effectiveness is enhanced when multiple dimensions, personal, moral, relational, and adaptive, are integrated into a unified framework. This suggests that leadership in disadvantaged contexts cannot rely solely on managerial or instructional competencies but must also incorporate deeper humanistic and value-based dimensions.

Second, the study shows that holistic leadership has a significant positive effect on teacher job satisfaction. This finding is consistent with Klassen and Chiu (2010), who argue that leadership support is a key determinant of teacher motivation and well-being. However, this study extends previous research by demonstrating that job satisfaction is not only influenced by organizational support but also by leaders' spiritual integrity, empathy, and service orientation. In contexts where material resources are limited, these non-material dimensions become critical sources of motivation and professional fulfillment for teachers.

Third, the results indicate that educational service quality significantly affects teacher job satisfaction, suggesting a mediating mechanism between leadership and teacher outcomes. This finding aligns with the SERVQUAL framework (Parasuraman et al., 1988), which emphasizes the importance of reliability, responsiveness, and empathy in service delivery. In the school context, improved service quality—such as effective communication, supportive learning

environments, and responsive leadership—enhances teachers' perceptions of their work conditions, ultimately increasing their job satisfaction.

From a dimensional perspective, the Service and Innovation components emerged as the strongest predictors of both service quality and job satisfaction. This finding highlights the importance of relational leadership and adaptive capacity in disadvantaged settings. Servant leadership principles, as proposed by Greenleaf (1977), are particularly relevant in fostering trust, collaboration, and community engagement. At the same time, innovation plays a crucial role in overcoming resource limitations, supporting Zhao's (2012) argument that adaptive and creative leadership is essential in rapidly changing educational environments.

The Self and Spirit dimensions, while slightly less dominant statistically, remain fundamental to the integrity of the model. Self-awareness enables leaders to regulate emotions and make reflective decisions (Avolio & Gardner, 2005), while spiritual values provide ethical guidance and a sense of purpose (Fry, 2003). These dimensions form the internal foundation of leadership, ensuring that external actions (service and innovation) are grounded in strong personal and moral principles.

Importantly, this study contributes to the literature by offering a holistic and integrative leadership model that addresses the fragmentation found in existing leadership theories. While transformational, servant, and spiritual leadership models each provide valuable insights, they tend to focus on specific aspects of leadership in isolation. The 3SI model advances this body of knowledge by synthesizing these dimensions into a coherent framework that is both theoretically grounded and empirically validated.

Furthermore, the findings highlight the importance of contextualizing leadership models. In disadvantaged regions, leadership effectiveness is shaped not only by formal competencies but also by socio-cultural values, community relationships, and adaptive strategies. This supports arguments by Reave (2005) and Senge et al. (2004) that leadership must be understood as a holistic and context-dependent phenomenon.

Overall, the study demonstrates that holistic leadership is a powerful driver of school transformation, particularly in environments characterized by limited resources and complex challenges. By integrating self-awareness, spirituality, service, and innovation, school leaders can create more inclusive, responsive, and sustainable educational systems.

CONCLUSION

This study developed and validated a holistic educational leadership model (3SI) that integrates self-awareness, spirituality, service orientation, and innovation in the context of disadvantaged schools. The findings demonstrate that holistic leadership significantly influences educational service quality and teacher job satisfaction, with service and innovation emerging as the most influential dimensions. The results confirm that leadership effectiveness in resource-constrained settings extends beyond managerial competence, requiring a

balanced integration of personal, moral, relational, and adaptive capacities. The 3SI model provides a comprehensive and empirically supported framework for understanding how school leaders can foster meaningful transformation in challenging educational environments. Overall, this study contributes to the advancement of educational leadership theory by offering a context-sensitive and integrative model that responds to the complex realities of disadvantaged regions.

Practical and Theoretical Implications

This study offers several important implications for both theory and practice. From a theoretical perspective, the findings extend existing leadership literature by integrating multiple leadership dimensions into a unified holistic framework. The 3SI model bridges the gap between transformational, spiritual, servant, and innovative leadership, providing a more comprehensive understanding of leadership effectiveness in education.

From a practical perspective, the model can serve as a guideline for school principals in developing leadership practices that are more reflective, value-driven, and adaptive. Training and professional development programs for school leaders can incorporate the 3SI dimensions to enhance leadership capacity, particularly in disadvantaged contexts.

In addition, policymakers may use this model as a reference in designing leadership development policies that emphasize not only technical competence but also ethical values, service orientation, and innovation. This is especially relevant for improving the quality of education in underdeveloped and resource-constrained regions.

Limitations

This study has several limitations that should be acknowledged. First, the research was conducted in a specific regional context (Rokan Hilir Regency), which may limit the generalizability of the findings to other regions with different socio-cultural characteristics. Second, the study employed a cross-sectional design in the quantitative phase, which does not allow for the examination of causal relationships over time. Third, the data relied primarily on self-reported responses from principals and teachers, which may be subject to response bias. Despite these limitations, the study provides a strong empirical foundation for future research on holistic educational leadership.

Directions for Future Research

Future research is recommended to expand and refine the findings of this study. First, the 3SI model should be tested in different geographical and cultural contexts to examine its generalizability. Second, longitudinal studies are needed to explore the long-term impact of holistic leadership on school performance and student outcomes. Third, future studies may incorporate additional variables, such as organizational culture, teacher performance, and student achievement, to develop a more comprehensive model. Finally, qualitative studies with deeper

ethnographic approaches could provide richer insights into how holistic leadership is practiced in diverse educational settings.

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Author Contributions

Eli Karyati: Conceptualization, investigation, data collection, methodology, formal analysis, model development, writing—original draft, and project administration. Aan Komariah: Principal supervision, conceptual guidance, validation, critical review and editing, and overall academic direction. Djam'an Satori: Co-supervision, theoretical validation, methodological review, interpretation of findings, and manuscript review. Sururi: Co-supervision, validation, methodological consultation, critical review, and manuscript improvement. Supiani: Data curation, quantitative data analysis, SEM-PLS analysis, visualization, manuscript editing, publication support, and corresponding author assistance. All authors contributed substantially to the study, reviewed the manuscript critically for important intellectual content, approved the final version for publication, and agreed to be accountable for the integrity and accuracy of the work.

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