

The Influence of Management Information Systems and Organizational Support on Principal Competence Through Transparency as a Mediating Variable in Public Junior High Schools in Sub-District 6, Pandeglang Regency

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ABSTRACT

Principal competence is a key determinant of the quality of school management, yet performance appraisal data from several public junior high schools in Pandeglang Regency still show unsatisfactory results. This study aims to examine the effects of management information systems and organizational support on principal competence, both directly and indirectly through transparency as a mediating variable. A quantitative explanatory survey design was applied to 144 civil servant teachers from 24 public junior high schools in Sub-District 6, Pandeglang Regency, selected through proportionate stratified random sampling. Data were collected using a Likert-scale questionnaire and analyzed using Partial Least Squares Structural Equation Modeling. The results show that management information systems and organizational support have positive and significant effects on both transparency and principal competence. Transparency also has a positive and significant effect on principal competence and acts as a partial mediator in both tested effect paths. The research model explains 71.4 percent of the variance in principal competence. These findings confirm that strengthening school leadership competence is more optimal when the use of information systems and institutional support is accompanied by an open and accountable school management culture.

Article Information

Keywords:

sistem informasi manajemen; dukungan organisasi; transparansi; kompetensi kepala sekolah; Structural Equation Modeling

ABSTRACT

Kompetensi kepala sekolah menjadi penentu utama mutu pengelolaan satuan pendidikan, namun data penilaian kinerja pada sejumlah Sekolah Menengah Pertama Negeri di Kabupaten Pandeglang masih menunjukkan capaian yang belum memuaskan. Penelitian ini bertujuan menguji pengaruh sistem informasi manajemen dan dukungan organisasi terhadap kompetensi kepala sekolah, baik secara langsung maupun melalui transparansi sebagai variabel mediasi. Penelitian menggunakan pendekatan kuantitatif dengan desain survei eksplanatori pada 144 guru Pegawai Negeri Sipil di 24 Sekolah Menengah Pertama Negeri Rayon 6 Kabupaten Pandeglang yang dipilih melalui proportionate stratified random sampling. Data dikumpulkan menggunakan kuesioner berskala Likert dan dianalisis dengan Structural Equation Modeling berbasis Partial Least Square. Hasil penelitian menunjukkan bahwa sistem informasi manajemen dan dukungan organisasi berpengaruh positif dan signifikan terhadap transparansi maupun terhadap kompetensi kepala sekolah. Transparansi juga terbukti berpengaruh positif dan signifikan terhadap kompetensi kepala sekolah serta berperan sebagai mediator parsial pada kedua jalur pengaruh yang diuji. Model penelitian mampu menjelaskan 71,4 persen variasi kompetensi kepala sekolah. Temuan ini menegaskan bahwa penguatan kompetensi kepemimpinan sekolah akan lebih optimal apabila pemanfaatan sistem informasi dan dukungan kelembagaan diiringi dengan budaya pengelolaan sekolah yang terbuka dan akuntabel.

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1. Introduction

The quality of education in a nation depends greatly on the quality of leadership at the educational institution level. Principals serve not only as administrative implementers but also as key drivers who shape the learning climate, instructional quality, and overall direction of school development. The Indonesian government responded by issuing the Regulation of the Minister of Education, Culture, Research, and Technology No. 13 of 2021 on Standards for Heads of Educational Institutions, which stipulates five mandatory dimensions of principal competence: managerial competence, supervisory competence, personality competence, social competence, and entrepreneurial competence (Ministry of Education, Culture, Research, and Technology, 2021). These standards serve as the basis for periodic principal performance appraisal.

Field conditions have not yet fully aligned with the expectations of the regulation. The results of performance appraisal at fifteen public junior high schools in Pandeglang Regency from 2023 to 2024 revealed concerning conditions. Four schools, or approximately 26,67 percent, received a poor rating, with mean scores below 65, while the remaining eleven schools, or 73,33 percent, achieved only a satisfactory rating. No school received a very good rating. The weakest competency component was personality competence, with a mean score of 62,9, followed by supervisory competence at 66,2 and managerial competence at 69,3, all substantially below the national minimum standard of 75 (Kementerian Pendidikan dan Kebudayaan, 2022). This condition was also reflected in school accreditation outcomes, with only 15,65 percent of schools attaining Accreditation A, whereas nearly 40 percent held Accreditation C or remained unaccredited (Badan Akreditasi Nasional Sekolah/Madrasah, 2023).

The researchers' preliminary observations, conducted from October to November 2024 through unstructured interviews with fifteen teachers at three sample schools, reinforced this picture. A total of 73 percent of teachers reported that principals rarely used digital data as a basis for decision-making, 67 percent perceived that training and mentoring support from the education office remained limited, and 80 percent stated that information regarding school budgets and work programs was never communicated openly. These preliminary findings point to three interrelated factors presumed to shape principal competence: the utilization of management information systems, the strength of organizational support, and the degree of transparency in school management.

In the educational context, a management information system comprises a set of procedures, technologies, and resources used to collect, process, and distribute information for organizational decision-making. Farid dkk. (2025) emphasized that the optimal implementation of management information systems in educational institutions can improve work efficiency while

strengthening principals' managerial capacity because the availability of accurate data enables faster and more accountable decision-making. Adhikari dkk. (2024) added that management information systems play an important role in supporting school administration, although their use in many schools remains limited to routine administrative functions and has not extended to strategic aspects of decision-making. A similar condition was reported by Baetisalamah dkk. (2024), who noted that digital transformation in education requires schools to adapt continuously to changes in information technology.

The second factor presumed to play an important role is organizational support. Drawing on organizational support theory, organizational support refers to individuals' perceptions of the extent to which an organization values their contributions and is concerned with their well-being (Kurtessis dkk., 2023). When principals perceive adequate support from education offices, school committees, and other stakeholders, they tend to be more confident and motivated in carrying out their leadership responsibilities. Chu dkk. (2024) demonstrated that organizational support contributes significantly to improved task performance through various psychological mechanisms, whereas Kubota dkk. (2024) found that perceived organizational support can promote learning motivation and work engagement among educational personnel.

The third factor is transparency, defined as openness in the management of information, budgets, and decision-making processes for all members of the school community. Piotrowski (2023) explained that organizational transparency is closely associated with accountability and constitutes a prerequisite for the development of trust between leaders and organizational members. In the school context, Sholeh (2023) found that transparency and accountability play important roles in building a positive image of educational institutions, whereas Atukunda (2025) emphasized that transparent school governance contributes to leadership effectiveness and public trust in educational institutions. Through a meta-analysis spanning thirty-five years, Sun dkk. (2023) also demonstrated that teacher trust, which is partly shaped by openness in school leadership, is strongly correlated with student learning outcomes.

A review of previous research indicates that these three variables have generally been examined separately. For example, Hidayat dan Machali (2023) demonstrated a positive correlation between management information systems and principal performance but did not include transparency as a mediating variable. Juharyanto dkk. (2023) examined principals' entrepreneurial competence in remote areas of Indonesia without relating it to management information systems. Other studies by Malik dkk. (2024) and Shobri (2024) indicated that management information systems play an important role in supporting the transparency and accountability of educational institutions, but their research subjects did not

directly concern principals' leadership competence. These conditions indicate an empirical and methodological gap: no study has simultaneously examined management information systems, organizational support, and transparency within an integrated causal model, particularly in the context of public junior high schools in Pandeglang Regency.

Based on this rationale, this study was designed to examine the effects of the management information system and organizational support on principal competence, both directly and through transparency as a mediating variable. Seven hypotheses were proposed. First, the management information system has a positive effect on transparency. Second, organizational support has a positive effect on transparency. Third, the management information system has a positive effect on principal competence. Fourth, organizational support has a positive effect on principal competence. Fifth, transparency has a positive effect on principal competence. Sixth, transparency mediates the effect of the management information system on principal competence. Seventh, transparency mediates the effect of organizational support on principal competence. This study is expected to make a theoretical contribution to the development of mediation models in educational management while providing practical guidance for principals, education offices, and school supervisors in designing more targeted policies to improve leadership competence.

Theoretical Review and Conceptual Framework

Competence is a fundamental concept in the study of human resource development. Cao et al. (2024) define competence as an individual's underlying characteristic that has a causal relationship with performance effectiveness in a specific job, encompassing five dimensions: motives, personality traits, self-concept, knowledge, and skills. In the context of school leadership, principal competence can be understood as the overall set of professional capabilities used to manage an educational institution effectively, efficiently, and accountably. Abunaser et al. (2025) add that effective school leadership competence includes the ability to provide instructional leadership, plan strategically, build effective communication, and continuously develop staff capacity. This study adopts the five dimensions of principal competence stipulated in Regulation of the Minister of Education, Culture, Research, and Technology No. 13 of 2021 on Standards for Heads of Educational Institutions: managerial competence related to planning and managing school resources; supervisory competence related to fostering teacher performance; personality competence related to integrity and role modeling; social competence related to the ability to build relationships with various stakeholders; and entrepreneurial competence related to the ability to innovate and create opportunities for school advancement.

A management information system is understood as a set of procedures and technologies used by organizations to collect, process, store, and distribute information to support decision-making (Stair and Reynolds, 2023). In the educational context, UNESCO (2023) emphasizes that the appropriate use of information technology can improve the efficiency of school management while expanding access to information for all education stakeholders. When academic, financial, and personnel data are accurately available and easily accessible, principals can formulate more targeted policies and communicate more openly about accountability in school management to teachers, parents, and the community.

Organizational support is explained through organizational support theory, developed by Eisenberger and reinforced by Kurtessis et al. (2023) in a meta-analytic study that concluded that perceived organizational support is closely associated with employee commitment, job satisfaction, and performance. Caesens and Stinglhamber (2023) explain that organizational support is formed by three main elements: procedural justice, supervisor support, and recognition of work contributions. These three elements are relevant to the context of principalship, in which support from education offices, school supervisors, and school committees plays an important role in fostering a sense of psychological safety that encourages principals to work more openly and with a stronger results orientation. Robbins and Judge (2023) further emphasize that positively perceived organizational support increases work engagement and reduces employees' tendency to conceal problems encountered in their work.

In public administration studies, transparency is understood as an organization's openness in communicating information regarding processes, decisions, and resource use to relevant stakeholders (Piotrowski, 2023). Grimmeliikhuijsen et al. (2023) demonstrated through a cross-national experiment that organizational transparency affects the level of public trust in institutions. In the school context, transparency is reflected in the open communication of budget information, work programs, and decision-making processes to teachers and other members of the school community. Tosun and Çelik (2024) found that organizational transparency is correlated with organizational trust and school effectiveness, whereas Zuo (2025) demonstrated that transparent communication in school management strengthens teachers' organizational trust in school leaders.

Several studies indicate that the relationship among information systems, organizational support, and transparency is not always a simple linear one. Baetisalamah et al. (2024) noted that the successful implementation of a management information system is strongly influenced by the readiness of human resources and a supportive organizational culture; thus, the availability of technology alone does not automatically

increase openness without institutional support. This finding reinforces the argument that organizational support and management information systems need to operate in tandem and that both require transparency as a medium through which their effects on principal competence can be meaningfully realized. Fatimah et al. (2023) also found that a conducive school organizational climate, one characteristic of which is open communication, plays an important role in improving competence and work motivation in the school environment, thereby strengthening the position of transparency as a relevant mediating variable in this study.

Based on this theoretical review, this study develops a conceptual framework in which management information systems and organizational support constitute two organizational resources that can directly improve principal competence; however, the benefits of both resources are expected to be optimized when channeled through transparency practices in school management. In other words, transparency serves as a bridge linking the availability of information resources and institutional support to improvements in school leadership competence. This conceptual framework provides the basis for formulating the seven research hypotheses presented in the introduction, comprising five direct-effect hypotheses and two mediation hypotheses.

2. Research Methods

This study used a quantitative approach with an explanatory survey research design aimed at explaining causal relationships among variables through hypothesis testing based on field data (Creswell and Creswell, 2023). The study involved four variables: a management information system and organizational support as exogenous variables, transparency as the mediating variable, and principal competence as the endogenous variable. Data were collected cross-sectionally at a single point in time through the distribution of questionnaires to the study respondents.

Population and Sample

The population of this study comprised all civil servant teachers assigned to 24 public junior high schools in Sub-District 6, Pandeglang Regency, during the 2025–2026 academic year, with an accessible population of 251 individuals. Teachers, rather than principals, were selected as respondents because their positions enabled more objective assessments of school leadership practices observed on a daily basis. After excluding the 24 principals from the accessible population, the eligible population consisted of 227 teachers.

The sample size was determined using the Slovin formula with a 5 percent margin of error, resulting in a minimum sample size of 144 participants. Sampling was conducted using proportionate stratified random sampling, a random sampling

technique that considers the proportion of teachers at each school, with each school serving as a stratum, thereby ensuring that each school was proportionally represented (Sugiyono, 2023). The respondent criteria included active civil servant teachers who had served for at least one full year at the school where the study was conducted and were willing to complete the questionnaire voluntarily. Teachers who were on leave, undertaking study assignments, or had served for less than one year were not included in the study.

Operational Definitions and Research Instruments

Principal competence was measured based on five dimensions adopted from Regulation of the Minister of Education, Culture, Research, and Technology No. 13 of 2021 on Standards for Heads of Educational Institutions: managerial competence, supervisory competence, personality competence, social competence, and entrepreneurial competence. Management information system was measured using indicators of data availability, information accuracy, ease of access, and the use of data for decision-making. Organizational support was measured with reference to the concept of perceived organizational support (Kurtessis dkk., 2023), encompassing recognition of contributions, concern for well-being, and the availability of assistance when needed. Transparency was measured through indicators of budget information openness, work program openness, and information accessibility for school community members. All variables were measured using a five-point Likert-scale questionnaire, ranging from strongly disagree to strongly agree, which was developed based on 20 indicators for which content validity had been assessed through expert review before data collection.

Data Analysis Techniques

The data were analyzed using path analysis within the Partial Least Squares Structural Equation Modeling framework with the assistance of SmartPLS software. This approach was selected for several methodological considerations. First, Partial Least Squares does not strictly require normally distributed data, unlike covariance-based Structural Equation Modeling, which requires the assumption of multivariate normality (Hair dkk., 2023). Second, Partial Least Squares is suitable for predictive research models involving mediating variables and relatively moderate sample sizes. Third, this approach allows the simultaneous evaluation of the measurement model, or outer model, and the structural model, or inner model, within a single integrated analysis (Hair dkk., 2024).

The outer model was evaluated through convergent validity testing based on outer loading and average variance extracted values, discriminant validity testing based on the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio (Henseler dkk., 2023), and reliability testing based on composite reliability and Cronbach's alpha values. The inner model was evaluated

through tests of the coefficient of determination, or R Square; effect size, or F Square, using Cohen's criteria; predictive relevance, or Q Square, using the blindfolding procedure; and model fit using the Standardized Root Mean Square Residual value. Hypothesis testing was conducted using a bootstrapping procedure with 5,000 subsamples, with the null hypothesis rejected when the t-statistic exceeded 1,96 and the p-value was less than 0,05 at a 5 percent significance level. Mediation effect testing followed the approach developed by Preacher and Hayes (2023), in which an indirect effect was considered significant when the confidence interval from the bootstrapping procedure did not include zero.

3. Results and Discussion

Measurement Model Evaluation

Before hypothesis testing, the research model was evaluated through the outer model stage to ensure that all indicators were valid and reliable measures of the intended constructs. The results of data processing using SmartPLS showed that all indicators across the four study variables—management information system, organizational support, transparency, and principal competence—had outer loading values above the required threshold and were therefore considered convergently valid. The average variance extracted values for all four constructs were also above 0,5, indicating that each construct explained more than half of the variance in its indicators. Discriminant validity testing using the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio indicated that each construct demonstrated sufficient distinctiveness from the other constructs. The composite reliability and Cronbach's alpha values for all variables exceeded 0,7; thus, the research instrument was considered reliable and suitable for structural model testing in the subsequent stage.

Structural Model Evaluation

The structural model evaluation began with a test of the coefficient of determination, or R Square, to determine the extent to which the exogenous variables explained the endogenous variables. The test results are presented in Table 1.

Table 1. R Square and Adjusted R Square Values

Endogenous Variable	R Square	Adjusted R Square	Category
Principal Competence	0,714	0,708	Strong
Transparency	0,665	0,661	Moderate to Strong

The R Square value of 0,714 for the principal competence variable indicates that 71,4 percent of the variation in principal competence could be jointly explained by management information system, organizational support, and transparency, while the remaining 28,6 percent was explained by factors outside this research model, such as work motivation or

transformational leadership. This value falls within the strong category according to the criteria of Hair et al. (2024). The R Square value of 0,665 for the transparency variable indicates that 66,5 percent of its variation was explained by management information system and organizational support.

Next, an effect size test, or F Square, was conducted to determine the relative contribution of each effect path to its endogenous variable. The test results are presented in Table 2.

Table 2. F Square Values (Effect Size)

Effect Path	F Square	Category
Management Information System to Transparency	0,487	Large
Organizational Support to Transparency	0,396	Large
Transparency to Principal Competence	0,243	Medium
Management Information System to Principal Competence	0,141	Medium
Organizational Support to Principal Competence	0,063	Small

Table 2 shows that the management information system made the largest contribution to transparency, followed by organizational support; both were in the large category according to Cohen's criteria, as cited by Hair et al. (2023). The effect of transparency on principal competence was in the moderate category, as was the direct effect of the management information system on principal competence. Meanwhile, the effect of organizational support on principal competence was in the small category, although it remained statistically significant, as described in the hypothesis testing section.

Predictive relevance testing, or Q Square, using the blindfolding procedure yielded values of 0,531 for the principal competence variable and 0,484 for the transparency variable. Both values were greater than zero, indicating that the research model had good predictive relevance for both endogenous variables. The model fit test showed a Standardized Root Mean Square Residual value of 0,040, which was below the threshold of 0,08; thus, the research model was considered to have a good level of fit and to be suitable as a basis for hypothesis testing.

Hypothesis Testing

Hypothesis testing was conducted using a bootstrapping procedure with 5.000 subsamples. The direct effect test results are presented in Table 3.

Table 3. Results of Direct Effect Hypothesis Testing

Cod e	Effect Path	Coeffici ent	t Statisti c	p Valu e	Decision
H1	Managem ent Information System → Transparen cy	0,486	8,216	0,000	Accepted
H2	Organizatio nal Support → Transparen cy	0,438	8,003	0,000	Accepted
H3	Managem ent Information System → Principal Competenc e	0,295	4,809	0,000	Accepted
H4	Organizatio nal Support → Principal Competenc e	0,191	2,527	0,012	Accepted
H5	Transparen cy → Principal Competenc e	0,456	5,867	0,000	Accepted

Table 4. Results of Indirect-Effect Hypothesis Testing (Mediation)

Cod e	Indirect Effect Path	Coeffici ent	t Statisti c	p Valu e	Decision
H6	Managem ent Information System, Transparen cy, Principal Competence	0,221	4,759	0,000	Accepted
H7	Organizatio nal Support, Transparen cy, Principal Competence	0,200	4,410	0,000	Accepted

All seven hypotheses proposed in this study were accepted. The t-statistic values for all paths were above 1,96, and the p-values were below 0,05; therefore, the null hypotheses were rejected for all tested effect paths, including both direct effects and indirect effects through transparency as a mediator. Because the direct effects of the management information system and organizational support on principal competence remained

significant when transparency was included as a mediator, transparency served as a partial mediator in both paths.

Discussion

The test results showed that the management information system had a positive and significant effect on transparency, with a path coefficient of 0,486, representing the largest effect path in the overall research model. This finding is consistent with the view of Farid dkk. (2025) that the optimal implementation of a management information system strengthens principals' managerial capacity because the availability of accurate data promotes more open decision-making. This finding also reinforces the results of Shobri (2024), who found that educational management information systems play an important role in improving the transparency and accountability of educational institution management. The better the quality and utilization of the management information system in schools, the more open the management of information, budgets, and work programs becomes to school members.

Organizational support was also found to have a positive and significant effect on transparency, with a path coefficient of 0,438. This finding supports the concept of perceived organizational support advanced by Kubota dkk. (2024), according to which individuals' perceptions of the extent to which an organization values their contributions encourage openness and responsibility in carrying out their duties. When principals feel supported by the education office and other stakeholders, they become more confident in managing schools openly without concern about negative evaluations. This finding is also consistent with Chu dkk. (2024), who emphasized the role of organizational support in shaping more positive and accountable work behaviors.

For the direct effect paths to principal competence, the management information system had a path coefficient of 0,295, whereas organizational support had a path coefficient of 0,191. Both findings reinforce the results of Hasanah and Fathoni (2023), who demonstrated that organizational support contributes to principals' managerial competence, although the contribution of organizational support in this study was relatively smaller than that of the management information system. This indicates that, in the context of public junior high schools in Sub-District 6, Pandeglang Regency, the availability and use of data through a management information system play a more decisive role than administrative support alone in shaping principal competence.

Transparency was found to be the variable with the largest direct effect on principal competence, with a path coefficient of 0.456. This finding underscores the central role of openness in shaping school leadership competence, consistent with the views of Atukunda (2025) and Niwagaba (2025) that trust and

openness are fundamental to effective educational governance. Principals who routinely communicate budget information and work programs openly tend to be perceived by teachers as more competent, as such openness reflects the integrity and leadership accountability that form part of the personality competence and social competence dimensions stipulated in Regulation of the Minister of Education, Culture, Research, and Technology No. 13 of 2021 on Standards for Heads of Educational Institutions.

The mediation test results showed that transparency played a significant role in mediating the effects of both the management information system and organizational support on principal competence, with indirect-effect coefficients of 0.221 and 0.200, respectively. The identified mediation was partial because the direct effects of both exogenous variables remained significant even when transparency was included in the model. This finding provides an additional explanation for the results of Hidayat and Machali (2023) and Arifin (2023), which had not previously included transparency as a mediator, by showing that the benefits of management information systems and organizational support for principal competence are optimized when accompanied by the application of principles of openness in day-to-day school management.

These findings regarding the central role of transparency are also consistent with cross-national studies. For example, Tian et al. (2023) showed that communication gaps and limited openness within organizations may trigger feelings of isolation that ultimately reduce task performance, whereas Chen (2025) demonstrated that work engagement fostered by organizational support and openness also improves educators' job satisfaction. This study identified a similar pattern of relationships, in which transparency not only operates as an independent variable but also functions as a mechanism through which the benefits of organizational support and the management information system are translated into tangible improvements in principal competence. Grimmelikhuijsen et al. (2023) further noted that consistently managed transparency can foster long-term trust, which in turn strengthens leadership legitimacy in the eyes of subordinates and the surrounding community. Thus, the findings of this study enrich the empirical evidence that openness is not merely a normative value but a structural variable that meaningfully affects the quality of educational leadership.

Overall, the findings of this study reinforce the relevance of organizational support theory and the concept of openness-based governance in explaining principal competence. A model that positions only the management information system and organizational support as direct predictors without accounting for the mechanism of transparency may inadequately represent the actual processes occurring in practice. Therefore, future studies of educational management need to give greater consideration to the role of intervening variables such as transparency when developing models to improve school

leadership competence.

Research Implications

The acceptance of all hypotheses in this study reinforces the relevance of organizational support theory and the concept of openness-based governance in explaining principal competence. Theoretically, these findings indicate that a model positioning only the management information system and organizational support as direct predictors, without considering the mechanism of transparency, may inadequately represent the actual processes occurring in practice. Future studies of educational management need to give greater consideration to the role of intervening variables such as transparency when developing models to improve principal competence, rather than merely examining direct effects among variables.

Practically, the finding that the management information system promotes both transparency and principal competence indicates the need to shift the use of information systems from merely administrative functions to strategic functions that support decision-making. Possible measures include providing adequate digital infrastructure, training principals and staff to operate information systems, and developing standard procedures for using data in day-to-day managerial activities. With respect to organizational support, education offices and relevant stakeholders need to ensure the equitable provision of support in the form of training, mentoring, work facilities, and recognition of principals' achievements, particularly for schools that have received limited attention.

Given that transparency was found to make the greatest contribution and to serve as a mediator in two effect paths, strengthening a culture of openness needs to become a primary priority in all efforts to improve principal competence. Possible measures include implementing mechanisms for regularly reporting budgets and work programs to teachers, providing two-way communication channels between principals and school members, and establishing deliberative forums that involve various stakeholders in important decision-making. Accordingly, policies to improve principal competence will be more effective if they are designed in an integrated manner, simultaneously incorporating strengthened information system literacy, institutional support, and a culture of transparency, rather than relying on the general and uniform development approach described in the introduction.

4. Conclusion

This study concludes that the management information system and organizational support have positive and significant effects on transparency and principal competence, both directly and indirectly through transparency as a mediating variable. Transparency was found to be the variable making the greatest contribution to principal competence and to serve as a partial

mediator in both tested effect paths. The research model explained 71.4 percent of the variance in principal competence, indicating that the three variables examined are important predictors of improved principal competence in Sub-District 6, Pandeglang Regency.

These findings imply that strengthening principal competence cannot be separated from two key supporting factors: the availability of an adequate management information system and consistent organizational support. Both have an optimal impact when implemented through transparent school management practices. Education authorities are advised to develop more targeted principal development programs based on assessments of the needs of each school, ensure the equitable provision of information system infrastructure, and promote the regular reporting of budgets and work programs. Principals are advised to enhance their use of management information systems as a basis for strategic decision-making and to establish the practice of openly communicating school information to teachers and members of the school community.

This study was limited by its geographic scope, which covered only Sub-District 6 of Pandeglang Regency, and by its cross-sectional design, which was unable to capture changes in the relationships among variables over time. Future research is recommended to expand the geographic scope or educational level, include additional variables such as work motivation or transformational leadership, and consider longitudinal research designs to strengthen confirmation of the causal relationships identified in this study.

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