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# Principal Leadership, Work Motivation, and Professional Competence as Predictors of Primary School Teachers' Performance in Semarang

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**KEYWORDS**

**Keywords:**

Principal leadership; Work motivation; Professional competence; Teacher performance; Ability-Motivation-Opportunity framework.

**Conflict of Interest Statement:**

The author(s) declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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**ABSTRACT**

**Purpose:** To examine the individual and joint associations of principal leadership, work motivation, and professional competence with teacher performance in public primary schools in the Dwarawati School Cluster, Banyumanik District, Semarang City.

**Research Method:** A quantitative cross-sectional explanatory survey included all 36 classroom teachers from six public primary schools through census sampling. Data were collected using 51 questionnaire items on a five-point Likert scale and analyzed using multiple linear regression. Instrument assessment employed corrected item-total correlations and Cronbach's alpha.

**Results and Discussion:** All constructs exhibited high internal consistency (α = 0.908–0.946). The regression model was significant, $F(3, 32) = 15.877$, $p < 0.001$, explaining 59.8% of the variance in teacher performance. Principal leadership (β = 0.503, $p < 0.001$), work motivation (β = 0.385, $p = 0.002$), and professional competence (β = 0.356, $p = 0.005$) showed positive, significant associations. Principal leadership demonstrated the strongest association.

**Implications:** Educational human resource management should integrate leadership development, motivational support, and continuing professional development. Future longitudinal studies should examine temporal relationships across broader school contexts.

**Originality:** The study integrates leadership, motivation, and competence within the Ability-Motivation-Opportunity framework to provide contextual evidence from a public primary school cluster.

## *1)* Introduction

The quality of primary education is a fundamental pillar in developing competent, adaptable, and competitive human resources. Teachers play a strategic role in planning, implementing, evaluating, and improving educational processes. Teacher performance involves not only delivering subject matter but also managing classrooms effectively, applying appropriate instructional strategies, conducting assessments, providing feedback, and consistently fulfilling professional responsibilities. These activities are shaped by both individual factors and the organizational conditions of schools. Liebowitz and Porter (2019) found that principals' leadership behaviors are associated with teachers' instructional practices, teacher well-being, and school organizational conditions. Likewise, Leithwood et al. (2020) emphasized the importance of school leadership in creating conditions conducive to improved instructional quality. Improving teacher performance therefore requires an integrated understanding of professional competence, work motivation, and organizational support.

Improving teacher performance has become increasingly challenging as education places greater emphasis on literacy, numeracy, critical thinking, and educational technology. Teachers are expected not only to master subject content but also to develop instruction responsive to students' characteristics and needs. School leadership plays an important role in fostering an environment that supports teacher professionalism. In a meta-analysis of 68 quantitative studies, Hallinger et al. (2025)

identified positive associations between principals' instructional leadership and teachers' professional attitudes, including trust, self-efficacy, commitment, and job satisfaction. Eryilmaz and Strietholt (2025), meanwhile, reported a positive association between leadership support and teachers' job satisfaction, although the relationship with students' academic achievement was not consistently similar. These findings suggest that the effectiveness of school leadership involves complex relationships among organizational characteristics, teachers' psychological conditions, and professional practices.

These issues are relevant to public primary schools in the Dwarawati School Cluster, Banyumanik District, Semarang City. According to preliminary information documented in the research proposal, six schools exhibited differences in educational quality indicators in 2025. School-level education report scores ranged from 64 to 78 for literacy, 59 to 74 for numeracy, and 61 to 76 for instructional quality. Initial teacher performance assessment scores ranged from 76 to 91, with a mean of 83.4. Academic supervision records and instructional planning documentation also varied among schools. These conditions indicate differences in educational management and professional practices that warrant further examination. However, school-level education indicators cannot directly establish individual teachers' performance or its causes. Teacher-level analysis is therefore necessary to examine more specifically how principal leadership, work motivation, and professional competence relate to teacher performance.

Principal leadership is an organizational factor that helps establish conditions conducive to teacher performance. Effective leadership encompasses more than administrative competence; it includes strategic direction, role modeling, academic supervision, individual support, and the facilitation of professional development. In a study of 220 public primary school teachers in Brebes Regency, Zamzami and Wahyudin (2026) found that principal leadership was positively associated with teacher performance, with work motivation serving as a partial mediator. In contrast, Makrus and Wahyudin (2026), examining senior and vocational high school teachers in Jepara Regency, found a positive relationship between principal leadership and performance but a negative relationship between leadership and work motivation, without evidence of motivational mediation. Such differences suggest that the relationship among leadership, motivation, and performance depends on the characteristics of educational organizations. Investigating this relationship in primary schools can therefore broaden existing empirical evidence.

Beyond leadership, work motivation is a psychological factor associated with teachers' willingness to exert effort, persevere, and discharge professional responsibilities. It may be expressed through achievement striving, willingness to improve skills, responsibility, and collaboration toward educational goals. In research involving Malaysian primary school teachers, Khun-Inkeeree et al. (2022) reported that identified and intrinsic motivation were related to school effectiveness. This indicates that different forms of teacher motivation may contribute differently to educational outcomes. Moreover, a meta-analysis of 43 studies involving 9,216 participants by Klassen and Tze (2014) found an association between teacher self-efficacy and externally evaluated teaching effectiveness. Although self-efficacy is conceptually distinct from work motivation, the findings highlight the importance of individual psychological factors. Work motivation should therefore be examined alongside organizational factors and professional competence.

Professional competence encompasses subject-matter mastery, understanding of disciplinary knowledge, contextual development of learning materials, technology integration, and continuing professional development. It is a prerequisite for effective instruction that responds to curriculum requirements and students' needs. König et al. (2021) found that teachers' pedagogical competence was associated with instructional quality and mathematics achievement. Although pedagogical and professional competence differ conceptually, this finding emphasizes the role of teacher knowledge and skills. In Indonesia, Putra and Negara (2021) reported that professional competence and work motivation contributed to primary school teacher performance; Triyani et al. (2022) likewise identified a positive and significant relationship between professional competence and teacher performance in Palembang. In a meta-analysis of 60 causal studies, Kraft et al. (2018) found that teacher coaching improved instructional practices and student achievement. Together, these studies underscore the relevance of developing teachers' professional capacity.

Previous research has investigated combinations of leadership, motivation, and competence in explaining teacher performance. Romy et al. (2021) reported associations of pedagogical competence, principal leadership, and work motivation with teacher performance in public primary schools in Medan. Setyaningrum and Irambona (2024) examined principal leadership, work competence, and work motivation among primary school teachers in Yogyakarta and found positive and significant relationships with performance. These studies support a multivariate perspective. Nevertheless, differences in the operationalization of competence, sample characteristics, and school contexts warrant further examination specifically focused on professional competence.

Comparing the relative contributions of the predictors is also necessary to determine which variable has the strongest statistical association with performance after accounting for the others.

The relationships among these variables can be interpreted through the Ability–Motivation–Opportunity (AMO) framework. This framework proposes that individual performance is associated with the ability to perform tasks, motivation to exert effort, and organizational opportunities to apply that ability. Reviewing 104 quantitative articles, Bos-Nehles et al. (2023) showed how AMO can explain links among individual characteristics, human resource management practices, and performance. Professional competence represents the ability dimension through teachers' knowledge and skills; work motivation captures their drive and willingness to fulfill professional duties; and principal leadership is understood as one organizational source of opportunity through supervision, feedback, professional development support, and opportunities to use competence. This mapping is interpretive, since principal leadership does not encompass the full opportunity dimension of AMO.

The synthesis of prior studies reveals three research gaps. First, although leadership, motivation, and teacher competence have been associated with performance, variations in findings and school contexts justify further examination in a more specific primary school setting (Makrus & Wahyudin, 2026; Zamzami & Wahyudin, 2026). Second, differences among pedagogical competence, general work competence, and professional competence call for clearer operationalization to support meaningful comparisons (Putra & Negara, 2021; Romy et al., 2021; Setyaningrum & Irambona, 2024). Third, applying AMO requires conceptual and measurement clarity regarding ability, motivation, and opportunity in relation to performance (Bos-Nehles et al., 2023). Integrating these three predictors into a regression model interpreted through AMO can therefore provide a more systematic understanding of individual and organizational factors associated with teacher performance.

The contribution of this study lies in examining the relative roles of principal leadership, work motivation, and professional competence in teacher performance within the Dwarawati School Cluster in Banyumanik, Semarang, using AMO as an interpretive framework. The three-variable combination itself is not claimed to be novel, as similar models have been examined previously. Rather, the contribution consists of a more specific operationalization of professional competence, simultaneous and partial analyses of predictors, and identification of the strongest standardized regression coefficient in this particular primary school context. The study thus seeks to extend evidence concerning professional capacity, motivation, leadership support, and teacher performance.

Accordingly, this study aims to analyze the partial and simultaneous relationships between principal leadership, work motivation, professional competence, and the performance of public primary school teachers in the Dwarawati School Cluster, Banyumanik, Semarang, and to identify the predictor with the strongest relative standardized coefficient. Theoretically, it contributes to educational human resource management by applying AMO to the relationships among individual ability, motivation, organizational support, and teacher performance. Practically, it seeks to inform principals, school supervisors, and education stakeholders in strengthening leadership, managing motivation, and developing teachers' professional competence.

## *2)* Literature Review and Hypothesis Development

### 2.1. Theoretical Framework and Research Constructs

Teacher performance reflects professional capabilities and behaviors in fulfilling educational responsibilities and attaining learning objectives. It includes lesson planning, instructional delivery, classroom management, assessment, feedback, and professional accountability. From an educational human resource management perspective, performance is associated not only with teachers' knowledge and skills but also with individual motivation and organizational support. Liebowitz and Porter (2019) linked principal leadership behaviors to instructional practices, teacher well-being, and organizational health, while Leithwood et al. (2020) highlighted leadership's role in establishing conditions that support learning. These perspectives emphasize the importance of a multidimensional approach to teacher performance.

This study adopts the Ability–Motivation–Opportunity (AMO) framework to interpret the relationships among principal leadership, work motivation, professional competence, and teacher performance. AMO identifies three key components: the ability to perform tasks, motivation to expend effort, and opportunities through which ability and motivation can translate into work behavior. Based on a review of 104 quantitative studies, Bos-Nehles et al. (2023) described AMO's utility for examining individual attributes, human resource practices, and performance, while stressing the importance of clearly defining and measuring its dimensions to avoid conceptual overlap.

In primary education, ability is represented by teachers' professional competence, including subject and competency-standard mastery, development of instructional materials, professional

reflection, and educational technology use. Professional competence helps teachers adapt instruction to learners' needs. Motivation is represented by work motivation, including achievement striving, affiliation and collaboration, responsibility, and willingness to contribute to school goals. Motivation relates to the direction, intensity, and persistence of teachers' professional efforts.

Opportunity is interpreted through organizational support embodied in principal leadership. Leaders who provide clear direction, role modeling, intellectual stimulation, supervision, and individual support may create conditions in which teachers can exercise competence and motivation. However, principal leadership is not a comprehensive measure of opportunity: resources, professional autonomy, school policy, and participation in decisions also shape work opportunities. Mapping leadership to opportunity is therefore a conceptual interpretation rather than a complete operationalization of that AMO dimension (Bos-Nehles et al., 2023).

Together, these dimensions suggest that teacher performance is associated with the ability to work, willingness to make an effort, and organizational conditions that enable both. Principal leadership (X1), work motivation (X2), and professional competence (X3) are treated as independent variables, with teacher performance (Y) as the dependent variable. Partial and simultaneous relationships are examined using multiple linear regression. AMO guides the choice and interpretation of variables; the regression does not directly test interactions, mediation, or causal mechanisms.

### 2.2. Principal Leadership and Teacher Performance

Principal leadership is the ability to influence, guide, facilitate, and coordinate educational resources to achieve school goals. Beyond administrative duties, effective leadership entails role modeling, a shared vision, encouragement of instructional innovation, academic supervision, and appropriate professional support. Leithwood et al. (2020) linked successful school leadership with setting organizational direction, developing people, and improving organizational conditions that facilitate instruction. Principal leadership can thus be understood as a form of organizational support relevant to teacher performance.

Several mechanisms may explain this relationship. Clear direction helps teachers recognize instructional standards and priorities. Academic supervision and feedback provide information for improving instruction. Intellectual stimulation and individual support can encourage professional development and adaptive teaching, while exemplary conduct and integrity may foster accountability. In their systematic review and meta-analysis of 51 studies, Liebowitz and Porter (2019) found associations between principals' behaviors and teachers' instructional practices, well-being, and school organizational conditions. These findings point to several ways leadership may relate to professional practice.

In Indonesia, Hendriyati and Somantri (2021) observed relationships among principal leadership, work motivation, and teaching performance at public senior high schools in Bengkulu. Zamzami and Wahyudin (2026), studying 220 public primary school teachers in Brebes, also found a positive association between leadership and performance, with motivation acting as a partial mediator. Such evidence suggests that leadership may relate to teacher performance through both direct organizational support and associated psychological factors.

Nevertheless, findings are not uniform. In a study involving 230 senior and vocational high school teachers in Jepara, Makrus and Wahyudin (2026) reported that leadership was positively associated with performance but negatively and significantly related to work motivation; motivation did not mediate the leadership–performance relationship. This variation indicates that leadership effectiveness may depend on organizational characteristics, leadership behaviors, and teaching contexts, warranting examination of its association with performance after controlling for motivation and professional competence.

Under AMO, principal leadership is expected to provide support and opportunities that enable teachers to apply their professional capabilities. Clear direction, academic supervision, intellectual stimulation, and individual support may be associated with stronger teacher performance. Prior evidence generally supports this expected direction, although relationship strengths vary by context. Accordingly, the first hypothesis is proposed:

**H1:** Principal leadership has a positive effect on teacher performance.

### 2.3. Work Motivation and Teacher Performance

Work motivation is a psychological condition associated with the direction, intensity, and persistence of an individual's efforts toward work objectives. Among teachers, it entails willingness to fulfill instructional responsibilities, improve teaching, develop competence, and contribute to school success. Motivation is important because professional capability does not automatically translate into effective practice without sufficient willingness to perform the work.

The relationship between work motivation and teacher performance may also be interpreted using Self-Determination Theory (SDT). Ryan and Deci (2020) explained that intrinsic motivation and autonomously internalized forms of extrinsic motivation are associated with positive educational outcomes. Intrinsic motivation arises from interest or satisfaction in the activity itself, whereas extrinsic motivation involves objectives or consequences distinct from the activity. For teachers, internalized motivation may support commitment, professional growth, and persistence when facing instructional challenges. However, the achievement, affiliation, and responsibility dimensions used here do not directly correspond to SDT classifications; SDT therefore provides a supplementary perspective.

Motivation may be associated with performance through the allocation of energy, attention, and effort to teaching. Achievement-oriented teachers may prepare lessons more systematically, evaluate learning objectives, and seek solutions to instructional problems. Affiliation and cooperation can facilitate knowledge exchange and collaboration; professional responsibility may support consistent instructional delivery and assessment. Work motivation is therefore expected to relate to performance through effort and persistence.

Empirical evidence supports the relevance of motivation in education. Khun-Inkeeree et al. (2022) found that identified and intrinsic motivation were related to school effectiveness among Malaysian primary school teachers, suggesting that motivational forms differ in their associations with educational outcomes. In Indonesia, Putra and Negara (2021) reported that work motivation and professional competence contributed to primary school teacher performance. Rahmayanti et al. (2021) likewise linked motivation, professional competence, and work discipline to teacher performance at senior high schools in Pemalang.

More recent studies reinforce this association. Zamzami and Wahyudin (2026) found a positive relationship between motivation and primary school teacher performance, with motivation partially mediating the leadership–performance link. Makrus and Wahyudin (2026) also reported a positive significant association between motivation and teacher performance, with motivation displaying the largest relative coefficient in their model. The mixed evidence regarding the leadership–motivation relationship highlights the need to examine individual and organizational predictors together.

Within AMO, motivation reflects the willingness to deploy one's capabilities at work. More motivated teachers are expected to invest greater effort and persistence in planning, delivering, and evaluating instruction. A positive association is thus expected even after accounting for principal leadership and professional competence. The second hypothesis is proposed:
**H2:** Work motivation has a positive effect on teacher performance.

### 2.4. Professional Competence and Teacher Performance

Professional competence is the teacher's capacity to master disciplinary knowledge and competency standards, develop instructional materials, and apply professional knowledge and skills to educational duties. It supports teachers' readiness to respond to curricula, student characteristics, and educational technology. Under AMO, professional competence represents ability: the individual capacity to perform work in accordance with required standards and responsibilities.

Professional competence is relevant to teacher performance because mastery of instructional content underpins coherent and meaningful teaching. Knowledgeable teachers are expected to identify essential concepts, relate material to students' lives, and design appropriate learning resources. Professional reflection helps them evaluate teaching practices and pursue continuous improvement, while educational technology can support learning resources, instruction, and assessment. Professional competence thus involves both possessing and applying or developing professional knowledge.

König et al. (2021) found associations between pedagogical competence, instructional quality, and mathematics achievement. Although pedagogical and professional competence are distinct constructs, the study highlights the relevance of teacher knowledge and skills. In addition, a meta-analysis of 60 causal studies by Kraft et al. (2018) found positive effects of teacher coaching on instructional practice and student achievement. This suggests the value of professional development, without directly establishing a causal link between self-reported professional competence and all dimensions of teacher performance.

In Indonesia, Putra and Negara (2021) found that professional competence and work motivation contributed to primary school teacher performance. Triyani et al. (2022), studying 34 teachers at SD IBA Palembang, likewise reported a positive significant relationship between professional competence and performance. Rahmayanti et al. (2021) found that professional competence, motivation, and work discipline were associated with senior high school teacher performance both partially and simultaneously.

Previous studies also demonstrate the importance of distinguishing competence constructs. Romy et al. (2021) investigated pedagogical competence among primary school teachers in Medan, while Setyaningrum and Irambona (2024) examined work competence together with leadership and motivation in Yogyakarta. These measures are not necessarily interchangeable. The present study therefore focuses specifically on subject mastery, development of instructional content, professional reflection, and technology use to enable clearer interpretation of the professional competence–performance relationship.

In AMO, professional ability is a resource required for effective performance. More professionally competent teachers are expected to teach more effectively, solve instructional problems, and engage in continuous improvement. A positive association is expected after accounting for leadership and motivation. The third hypothesis is therefore proposed:

**H3:** Professional competence has a positive effect on teacher performance.

### 2.5. Simultaneous Relationships of Principal Leadership, Work Motivation, and Professional Competence with Teacher Performance

Teacher performance is multidimensional, encompassing individual capability, psychological motivation, and organizational conditions. AMO suggests that performance cannot be explained adequately by ability or motivation alone without considering organizational opportunities to apply them. Bos-Nehles et al. (2023) stressed the importance of clearly defining AMO dimensions and examining complex relationships. Principal leadership is expected to reflect organizational support, motivation the willingness to exert effort, and professional competence the ability to undertake instructional responsibilities.

Effective principal leadership may provide direction, supervision, and professional development opportunities. Motivation concerns the willingness to work consistently, while competence supplies the knowledge and skills necessary for instruction. These factors play distinct yet interrelated roles. Highly competent teachers may not perform optimally when motivation or organizational support is inadequate; conversely, motivation without sufficient competence may not ensure instructional quality. A combined model is therefore needed to assess their contributions more comprehensively.

Multivariate evidence has been reported previously. Romy et al. (2021) found that pedagogical competence, leadership, and motivation jointly explained 28.7% of teacher performance variation in public primary schools in Medan. Setyaningrum and Irambona (2024) reported significant associations of leadership, work competence, and motivation with primary school teacher performance in Yogyakarta. Rahmayanti et al. (2021) similarly found that professional competence, motivation, and discipline were simultaneously related to performance among senior high school teachers in Pemalang. Together, these studies support a multivariate approach.

Nevertheless, differences in settings, samples, and construct operationalization can influence coefficient magnitudes. This study combines principal leadership, work motivation, and professional competence in a model of public primary school teachers in the Dwarawati School Cluster, Semarang. Multiple linear regression enables the examination of partial relationships and the collective explanatory capacity of the three predictors. The overall F-test assesses whether at least one population regression coefficient differs from zero; a significant overall model does not necessarily imply that every predictor is individually significant.

Drawing on AMO and prior evidence, principal leadership, work motivation, and professional competence are expected to be jointly associated with teacher performance. The fourth hypothesis is proposed:

**H4:** Principal leadership, work motivation, and professional competence simultaneously have a significant effect on teacher performance.

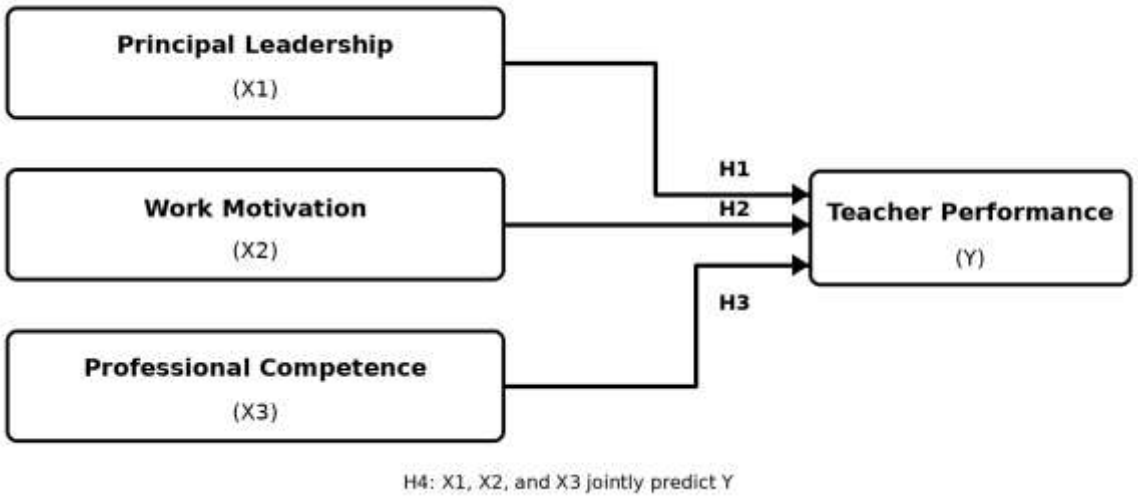



**Figure 1.** Conceptual Framework

## 3) Research Method

### 3.1. Research Design and Approach

The study was designed using a quantitative approach, an explanatory survey, and a cross-sectional design. Quantitative methods were selected to examine the relationships of principal leadership, work motivation, and professional competence with teacher performance using statistical hypothesis testing. The cross-sectional design involves measuring variables within a single data-collection period without manipulating participants or administering an intervention. It can identify associations but cannot establish causal relationships definitively. Reporting of the observational research design, participant selection, variable measurement, and statistical procedures draws on the transparency principles of von Elm et al. (2007).

Principal leadership (X1), work motivation (X2), and professional competence (X3) were specified as independent variables, and teacher performance (Y) as the dependent variable. Their selection was guided by the Ability–Motivation–Opportunity framework. Professional competence represents ability, work motivation represents the willingness to undertake professional responsibilities, and principal leadership is interpreted as organizational support related to the opportunity to apply those capabilities.

### 3.2. Population, Sample, and Unit of Analysis

The study was designed to encompass six public primary schools in the Dwarawati School Cluster, Banyumanik District, Semarang City: SDN Ngesrep 01, SDN Ngesrep 02, SDN Ngesrep 03, SDN Tinjomoyo 01, SDN Tinjomoyo 02, and SDN Tinjomoyo 03. The unit of analysis was the classroom teacher responsible for grades I–VI.

The target population consisted of 36 classroom teachers, with six teachers from each school. A census, also termed total population sampling, was planned to include all eligible teachers. This sampling strategy was selected because the target population was relatively small and could be covered in its entirety. The intended sample thus comprised 36 teachers, or 100% of the target population.

The census was intended to represent the classroom teachers at the selected schools rather than to permit statistical generalization to all primary school teachers in Semarang. Teachers were nested within six schools, raising the possibility that colleagues at the same school shared organizational characteristics. This clustering must be considered in interpreting regression results, particularly the independence of observations and the accuracy of standard errors. Cameron and Miller (2015) showed that within-cluster residual correlation can affect regression inference.

### 3.3. Research Instrument and Operationalization of Variables

The research instrument was a closed-ended questionnaire developed from the operational indicators of each variable. Items were measured on a five-point Likert scale, ranging from strongly disagree (1), disagree (2), neutral (3), and agree (4) to strongly agree (5). The scale assessed teachers' perceptions of principal leadership, work motivation, professional competence, and their own professional performance.

The questionnaire included 51 items across four constructs: 14 items for principal leadership, 13 for work motivation, 14 for professional competence, and 10 for teacher performance. Instrument design and evaluation followed principles of construct measurement in social and behavioral research. Boateng et al. (2018) emphasized that robust scale development requires clear conceptual definitions, relevant indicators, item-level checks, and evidence of validity and reliability.

**Table 1.** Operationalization of Research Variables

| Variable | Code | Measurement dimensions/indicators | Number of items |
|---|---|---|---|
| Principal leadership | X1 | Role modeling and integrity; direction and encouragement; intellectual stimulation; individual support and supervision | 14 |
| Work motivation | X2 | Achievement; affiliation and cooperation; responsibility and influence | 13 |
| Professional competence | X3 | Subject and standard mastery; instructional-material development; professional reflection; technology use | 14 |
| Teacher performance | Y | Lesson planning; instruction; classroom management; assessment and feedback; professional responsibility | 10 |
| Total | | | 51 |

***Source**: Adapted from Ifica's (2026) research instrument and operational definitions.*

Principal leadership (X1) was operationalized through teachers' perceptions of role modeling, integrity, organizational direction, encouragement of instructional improvement, intellectual stimulation, individual support, and academic supervision. Work motivation (X2) assessed achievement striving, affiliation and cooperation, responsibility, and the desire to have a positive influence at work. Professional competence (X3) addressed subject-matter and competency-standard mastery, development of instructional materials, professional reflection, and educational technology use. Teacher performance (Y) concerned perceived quality in lesson planning, instructional delivery, classroom management, assessment and feedback, and professional responsibilities.

Eleven negatively worded items required reverse coding before constructing composite scores. Reverse scoring used the formula new score = 6 − original score, ensuring consistent direction across all items. Each construct score was the mean of its component items. Mean scoring retained the common 1–5 scale; higher values indicated higher levels of the construct.

### 3.4. Instrument Quality Assessment

Instrument quality was evaluated through item consistency and internal reliability. Corrected item–total correlation (CITC), the correlation between an item and its construct total excluding that item, was used to examine item consistency. A CITC threshold of 0.30 served as an initial practical screening criterion. Items falling below this threshold would require closer examination of content and measurement characteristics. CITC was not considered sufficient evidence of construct validity on its own, since content validity and the conceptual correspondence of indicators must also be assessed (Boateng et al., 2018).

Internal reliability was assessed using Cronbach's alpha, originally proposed by Cronbach (1951) as a measure of internal consistency among test items. An alpha of 0.70 was used as an initial practical benchmark for acceptable reliability. Interpretation nevertheless considered the number of items, the nature of constructs, and the possibility of redundant statements. Tavakol and Dennick (2011) noted that a high alpha coefficient does not automatically establish unidimensionality or optimal measurement quality.

Instrument assessments informed the suitability of composite scores for correlation and regression analyses. Since all four variables were measured through questionnaires completed by the same respondents, common-method bias remained a concern. Podsakoff et al. (2003) explained that shared data sources and measurement methods can generate variance attributable to the method rather than substantive relationships among constructs. The results were therefore interpreted with the limitations of self-report measures in mind.

### 3.5. Data Analysis

Data analysis was designed to proceed through checks for missing values, construction of composite scores, descriptive statistics, Pearson correlations, tests of regression assumptions, and multiple linear regression estimation. Descriptive statistics included the mean, standard deviation, minimum, and maximum for each variable. Pearson correlation was intended to examine the

direction and strength of bivariate linear relationships between each predictor and teacher performance.

Regression assumptions were evaluated to assess whether the data were consistent with the requirements of the estimated model. Residual normality was examined using the Shapiro–Wilk test (Shapiro & Wilk, 1965). The test was applied to model residuals rather than requiring all raw variable scores to be normally distributed. A p-value greater than 0.05 was interpreted as insufficient evidence to reject normality, not proof that residuals were normally distributed.

Multicollinearity was evaluated using tolerance and the variance inflation factor (VIF). Tolerance greater than 0.10 and VIF below 10 were used as preliminary practical guidelines for severe multicollinearity. These thresholds were not applied mechanically, however, because O'Brien (2007) cautioned against rigid VIF rules. Interpretation also considered data characteristics, relationships among predictors, and coefficient precision.

Heteroskedasticity was examined using the Glejser test, in which absolute regression residuals are related to the predictors (Glejser, 1969). A p-value above 0.05 indicates insufficient statistical evidence of the tested relationship. Functional specification was also evaluated using the Ramsey Regression Equation Specification Error Test (RESET). Ramsey (1969) developed specification tests to identify possible functional-form errors or model misspecification. A p-value above 0.05 was interpreted as insufficient evidence against the tested functional specification.

The preliminary analytical plan also reported the Durbin–Watson statistic to examine residual autocorrelation (Durbin & Watson, 1950). As the data were cross-sectional and lacked a natural temporal ordering, however, the statistic was not treated as primary evidence of independence. Particular attention was given to possible within-school dependence among respondents. With only six schools, conventional cluster-robust standard-error adjustments would also require caution, since a very small number of clusters may affect statistical inference (Cameron & Miller, 2015).

### 3.6. Regression Model and Hypothesis Testing

Hypotheses were tested using multiple linear regression estimated by ordinary least squares (OLS). The model estimated partial and simultaneous relationships of principal leadership, work motivation, and professional competence with teacher performance. It was specified as follows:

$$Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \varepsilon_i$$

Where:
$Y_i$ = teacher performance score for teacher i
$\alpha$ = regression intercept
$\beta_1$, $\beta_2$, $\beta_3$ = regression coefficients for the respective predictors
$X_{1i}$ = principal leadership score
$X_{2i}$ = work motivation score
$X_{3i}$ = professional competence score
$\varepsilon_i$ = error term or model residual

Hypotheses were tested at a significance level of 5% ($\alpha = 0.05$), with 95% confidence intervals. H1, H2, and H3 were evaluated using t-tests of individual regression coefficients; a hypothesis was considered statistically supported when its coefficient was positive as proposed and $p < 0.05$. H4 was evaluated using the overall F-test. The simultaneous hypothesis was regarded as supported when the model F-test yielded $p < 0.05$.

Model explanatory capacity was evaluated using the coefficient of determination ($R^2$) and adjusted $R^2$. $R^2$ is the share of variance in teacher performance scores explained by the predictors; adjusted $R^2$ accounts for sample size and the number of predictors. Standardized regression coefficients ($\beta$) were also used to compare the relative sizes of partial associations within the same model.

The results were interpreted as statistical associations, not proof of causation. Given the cross-sectional design and self-reported measures, the analysis acknowledges omitted variables, common measurement sources, and the limited number of teachers and schools. Conclusions are therefore bounded by the research design and the quality and scope of the analyzed data.

## 4) Results and Discussion

### a) Analysis Results

**Overview of the Analytical Data**

The analysis included data for 36 classroom teachers from six public primary schools in the Dwarawati School Cluster, Banyumanik District, Semarang City: SDN Ngesrep 01, SDN Ngesrep 02, SDN Ngesrep 03, SDN Tinjomoyo 01, SDN Tinjomoyo 02, and SDN Tinjomoyo 03. Each school contributed six teachers, equivalent to 16.7% of the sample, providing equal coverage across schools. The data were used to examine the associations between principal leadership, work motivation, professional competence, and teacher performance.

Initial screening showed complete information for all 36 respondents across 51 questionnaire items and four composite constructs. No missing values were detected, and neither case deletion nor imputation was needed. Eleven negatively phrased items were reverse-coded to standardize measurement direction. Construct scores were then calculated as averages of their component items, retaining a uniform scale from 1 to 5.

Respondent characteristics were described in terms of school distribution because gender, age, educational attainment, and teaching tenure were not included in the dataset. Subsequent analyses covered instrument quality, descriptive statistics, regression assumptions, and multiple linear regression to examine partial and simultaneous associations among the study variables.

**Item Consistency and Instrument Reliability**

Instrument quality was evaluated through corrected item–total correlations (CITC) and Cronbach's alpha. A CITC value above 0.30 served as the initial item-acceptance criterion, and alpha above 0.70 indicated adequate internal consistency. The four constructs assessed were principal leadership, work motivation, professional competence, and teacher performance. Results are presented in Table 2.

**Table 2.** Summary of Item Consistency and Construct Reliability

| Construct | Number of items | Minimum CITC | Maximum CITC | Cronbach's α | Decision |
|---|---|---|---|---|---|
| Principal leadership (X1) | 14 | 0.529 | 0.727 | 0.918 | Meets criteria |
| Work motivation (X2) | 13 | 0.312 | 0.825 | 0.908 | Meets criteria |
| Professional competence (X3) | 14 | 0.618 | 0.826 | 0.946 | Meets criteria |
| Teacher performance (Y) | 10 | 0.734 | 0.861 | 0.946 | Meets criteria |

***Source**: Data processing results, 2026.*

As shown in Table 2, every item exceeded the CITC threshold of 0.30. CITC values ranged from 0.529 to 0.727 for principal leadership, from 0.312 to 0.825 for work motivation, from 0.618 to 0.826 for professional competence, and from 0.734 to 0.861 for teacher performance. Thus, each item showed a positive and acceptable correlation with its corrected construct total.

The lowest CITC occurred in the work motivation construct (0.312). Although acceptable under the screening rule, it indicates an item more weakly associated with its construct than most other items. Substantive item content should be considered alongside statistical correlations. Meeting the CITC threshold supports item consistency but does not, by itself, establish comprehensive construct validity.

All constructs yielded Cronbach's alpha coefficients above 0.90: 0.918 for principal leadership, 0.908 for work motivation, and 0.946 each for professional competence and teacher performance. These values indicate very high internal consistency within the analyzed dataset, although they should also be considered in light of potential similarity or redundancy between items.

Overall, the internal checks support using composite scores in subsequent analyses. Nevertheless, reliability and item correlations do not substitute for broader evidence of content and construct validity. The interpretation of regression findings depends on the conceptual correspondence and measurement quality of the indicators.

**Descriptive Statistics**

Descriptive statistics were calculated to describe central tendencies and dispersion for each construct, including the number of observations, mean, standard deviation, minimum, and maximum.

All constructs used averaged 1–5 scores, enabling comparison of their relative score levels. Table 3 presents the summary.

**Table 3.** Descriptive Statistics of Research Variables

| Variable | n | Mean | Standard deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| Principal leadership (X1) | 36 | 3.688 | 0.432 | 2.714 | 4.500 |
| Work motivation (X2) | 36 | 3.684 | 0.451 | 2.692 | 4.692 |
| Professional competence (X3) | 36 | 3.754 | 0.550 | 1.857 | 4.786 |
| Teacher performance (Y) | 36 | 3.681 | 0.646 | 2.600 | 4.900 |

***Source**: Data processing results, 2026.*

Table 3 shows means above the midpoint of the scale for all four constructs. Professional competence had the highest mean (3.754) and a standard deviation of 0.550. Its values ranged from 1.857 to 4.786, indicating noticeable variation across observations despite a generally above-midpoint score level.

Principal leadership had a mean of 3.688 and a standard deviation of 0.432, indicating scores more tightly concentrated around the mean than for the other constructs. Scores ranged from 2.714 to 4.500, reflecting some differences in perceived leadership but relatively limited dispersion.

Work motivation had a mean of 3.684, a standard deviation of 0.451, and a range of 2.692–4.692. Its mean was almost identical to that of principal leadership, differing by only 0.004 points. This similarity in descriptive averages does not mean that the constructs have identical conceptual characteristics or statistical contributions.

Teacher performance had the lowest mean (3.681), though the difference from the other means was small. It also had the largest standard deviation (0.646), with scores ranging from 2.600 to 4.900. Greater dispersion in the dependent variable creates variation for the model to relate to principal leadership, work motivation, and professional competence.

Differences in construct means alone do not establish statistical significance or the magnitude of any predictor's effect. The analysis therefore proceeded to multiple linear regression, subject to checks of the model assumptions.

**Testing Multiple Regression Assumptions**

Before interpreting regression coefficients, residual characteristics and relationships among predictors were examined. The diagnostics included the Shapiro–Wilk test for residual normality, tolerance and VIF for multicollinearity, the Glejser test for heteroskedasticity, and Ramsey RESET for functional specification. Durbin–Watson was also reported as supplemental information concerning residual patterns in the order of observations. Results are summarized in Table 4.

**Table 4.** Summary of Regression Assumption Tests

| Assumption | Indicator | X1 | X2 | X3/Model |
|---|---|---|---|---|
| Residual normality | Shapiro–Wilk | - | - | W = 0.959; p = 0.195 |
| Multicollinearity | Tolerance | 0.865 | 0.953 | 0.884 |
| Multicollinearity | VIF | 1.155 | 1.049 | 1.131 |
| Heteroskedasticity | Glejser test p-value | 0.538 | 0.216 | 0.667 |
| Functional specification | Ramsey RESET | - | - | F = 1.948; p = 0.173 |
| Serial correlation by observation order | Durbin–Watson | - | - | 2.020 |

*Source: Data processing results, 2026.*

Table 4 reports a Shapiro–Wilk statistic of W = 0.959 with p = 0.195. Because the p-value exceeded 0.05, there was insufficient statistical evidence to reject residual normality. This does not demonstrate perfect normality, but the test did not detect a statistically significant departure.

Tolerance was 0.865 for principal leadership, 0.953 for work motivation, and 0.884 for professional competence; corresponding VIF values were 1.155, 1.049, and 1.131. All VIF values were close to 1, with relatively high tolerance values. Thus, the predictors did not show indications of serious linear multicollinearity or substantial variance inflation.

Glejser test p-values were 0.538 for principal leadership, 0.216 for work motivation, and 0.667 for professional competence. All exceeded 0.05, providing insufficient statistical evidence of heteroskedasticity under this test. Nevertheless, heteroskedasticity not detected by the procedure cannot be ruled out entirely.

Ramsey RESET yielded F = 1.948 and p = 0.173. There was therefore insufficient evidence to reject the tested functional specification. The test does not, however, guarantee that all nonlinear patterns or omitted relevant predictors have been identified.

The Durbin–Watson value was 2.020, close to 2. Because the dataset is cross-sectional with no natural chronological ordering, this statistic cannot establish independence of all observations. In addition, teachers from the same school may exhibit correlated residuals, which should be considered when interpreting model inference.

Overall, the diagnostics did not identify statistically significant assumption violations using the specified procedures. The model can therefore be used to examine associations in the dataset, while acknowledging the small number of observations and the nesting of teachers within schools.

**Multiple Linear Regression Results and Hypothesis Tests**

Multiple linear regression was used to estimate relationships of principal leadership, work motivation, and professional competence with teacher performance. Ordinary least squares estimation treated teacher performance as the dependent variable. The analysis examined the direction, magnitude, and statistical significance of each predictor after controlling for the other two, as well as the overall explanatory capacity of the model.

The full model was statistically significant, $F(3, 32) = 15.877$, $p < 0.001$. The multiple correlation coefficient ($R = 0.773$) indicated a relatively strong association between fitted and observed teacher performance scores. The coefficient of determination ($R^2 = 0.598$) indicated that the predictors jointly explained 59.8% of the variance in performance scores, whereas adjusted $R^2 = 0.560$ took account of sample size and predictor count. The standard error of the estimate was 0.428. Table 5 reports the regression coefficients.

**Table 5.** Multiple Linear Regression Coefficients for Teacher Performance

| Predictor | B | SE | ß | t | p | 95% CI for B |
|---|---|---|---|---|---|---|
| Intercept | -2.690 | 0.963 | – | -2.792 | 0.009 | [-4.653; -0.727] |
| Principal leadership (X1) | 0.751 | 0.180 | 0.503 | 4.172 | < 0.001 | [0.384; 1.117] |
| Work motivation (X2) | 0.552 | 0.164 | 0.385 | 3.355 | 0.002 | [0.217; 0.887] |
| Professional competence (X3) | 0.418 | 0.140 | 0.356 | 2.988 | 0.005 | [0.133; 0.703] |

*Source: Data processing results, 2026.*

As shown in Table 5, all three predictors had positive coefficients statistically significant at the 5% level. Principal leadership had an unstandardized coefficient of $B = 0.751$, $t = 4.172$, $p < 0.001$. Its 95% confidence interval (0.384–1.117) excluded zero, indicating a positive partial association with teacher performance after adjusting for work motivation and professional competence.

Work motivation had $B = 0.552$, $t = 3.355$, $p = 0.002$, and a 95% confidence interval of 0.217–0.887. Professional competence had $B = 0.418$, $t = 2.988$, $p = 0.005$, with a 95% confidence interval of 0.133–0.703. Both predictors were positively associated with performance after accounting for the others.

Using the unstandardized coefficients, the estimated regression equation was:

$$Y = -2.690 + 0.751X1 + 0.552X2 + 0.418X3$$

Holding the other predictors constant, a one-unit increase in principal leadership was associated with a 0.751-unit increase in predicted teacher performance; equivalent increases in work motivation and professional competence were associated with increases of 0.552 and 0.418 units, respectively.

The intercept of −2.690 is the mathematical prediction when all predictors equal zero. Since the three predictors were measured on scales from 1 to 5, that condition is outside the observed range. The intercept thus has no direct substantive interpretation regarding teacher performance.

Among standardized coefficients, principal leadership was largest (ß = 0.503), followed by work motivation (ß = 0.385) and professional competence (ß = 0.356). Leadership therefore showed the largest standardized partial association in this model. However, these values neither establish universal causal predominance nor demonstrate statistically significant differences between coefficients without additional testing.

To clarify decisions on the proposed hypotheses, Table 6 summarizes the partial and simultaneous regression results.

**Table 6.** Summary of Hypothesis Tests

| Hypothesis | Variable relationship | ß/Model statistic | p | Decision |
|---|---|---|---|---|
| H1 | X1 → Y | ß = 0.503 | < 0.001 | Supported |
| H2 | X2 → Y | ß = 0.385 | 0.002 | Supported |
| H3 | X3 → Y | ß = 0.356 | 0.005 | Supported |
| H4 | X1, X2, X3 → Y | $R^2$ = 0.598 | < 0.001 | Supported |

*Source: Data processing results, 2026.*

Table 6 indicates support for H1, H2, and H3 because all corresponding coefficients were positive and statistically significant at p < 0.05. Principal leadership had the largest standardized coefficient, followed by motivation and competence. H4 was also supported by the significant overall F-test, indicating that at least one predictor coefficient in the model differs from zero.
The results reveal positive relationships between each predictor and teacher performance. Differences in coefficient size suggest distinct partial associations, which should be interpreted in light of the constructs and their roles. The discussion that follows compares the findings with prior evidence and the study's theoretical framework.

*b)* **Discussion**

**Principal Leadership and Teacher Performance**

The first hypothesis was supported: principal leadership was positively and significantly associated with teacher performance (ß = 0.503, p < 0.001). Its standardized coefficient was the largest among the three predictors. Differences in perceived principal leadership were associated with differences in teacher performance even after controlling statistically for motivation and professional competence. H1 thus highlights leadership as a relevant organizational factor explaining performance variation.

This association may be interpreted in terms of leadership functions: establishing work direction, modeling professional conduct, facilitating development, and conducting academic supervision. Clear communication of learning goals can help teachers understand professional standards and priorities. Supervision accompanied by constructive feedback can support evaluation of lesson planning, instruction, and assessment. Individual support and intellectual stimulation can also foster reflection and better use of professional skills. These are plausible conceptual mechanisms consistent with the observed relationship, but they were not directly tested as mediating pathways.

The pattern is consistent with Hendriyati and Somantri (2021), who identified associations of leadership and motivation with teaching performance in Bengkulu senior high schools. Pratiwi et al. (2021) similarly reported relationships among school leadership, motivation, and teacher performance at the primary level. Both studies support leadership's relevance in different educational settings.

Broader evidence is available from Liebowitz and Porter (2019), whose systematic review and meta-analysis of 51 studies linked principal behaviors with instructional practices, educator well-being, and school organizational conditions. Leadership therefore goes beyond administrative oversight to shaping the professional environment that supports teaching quality. Likewise, Leithwood et al. (2020) emphasized the value of organizational direction, educator capacity development, and improved school conditions.

Zamzami and Wahyudin (2026) found a positive relationship between principal leadership and public primary school teacher performance in Brebes, with work motivation functioning as a partial mediator. This suggests that psychological processes may accompany leadership–performance associations. However, the present model specifies leadership, motivation, and competence as direct predictors only; it cannot establish a mediating role for motivation.

Hallinger et al. (2025) also reinforced leadership's significance in a meta-analysis of 68 quantitative studies linking instructional leadership to teacher trust, self-efficacy, commitment, and job satisfaction. Although these attitudes do not directly represent every performance dimension examined here, they illustrate the relational and psychological features of leadership relevant to teachers' professional work.

Under the Ability–Motivation–Opportunity framework, principal leadership can be understood as organizational support that enables teachers to use their professional competence and motivation. Bos-Nehles et al. (2023) identified opportunity as an important component linking ability and motivation to performance. Thus, the positive leadership–performance association may reflect a

school environment characterized by supervision, professional support, and opportunities for development.

The relatively large standardized leadership coefficient suggests a stronger association within the specified model, but should not be equated directly with the effectiveness of school development interventions. Practically, it underscores the potential value of better academic supervision, organizational communication, individualized mentoring, and teacher participation in instructional development. Leadership focused on professional support should be viewed as integral to teacher performance management rather than merely an administrative activity.

**Work Motivation and Teacher Performance**

The second hypothesis was supported: work motivation was positively and significantly associated with teacher performance (β = 0.385, p = 0.002). Higher motivation scores corresponded to higher teacher performance scores after accounting for principal leadership and professional competence. H2 thus reinforces the relevance of individual psychological factors.

Work motivation concerns willingness to exert effort, sustain persistence, and fulfill professional duties. In primary schools, achievement striving may foster careful lesson preparation, evaluation of learning outcomes, and instructional improvement. Affiliation and cooperation may encourage collaborative practices, while professional responsibility may support consistent teaching and assessment. Motivation can therefore help account for variation in teachers' professional effort and engagement.

This result accords with Putra and Negara (2021), who found that work motivation and professional competence contributed to primary school teacher performance. Rahmayanti et al. (2021) likewise associated work motivation with teacher performance in senior high schools in Pemalang when competence and discipline were included. The consistent positive direction across different school levels suggests that motivation remains relevant under diverse organizational conditions.

Makrus and Wahyudin (2026) offer a useful comparison: work motivation was the strongest predictor in their model of senior and vocational high school teacher performance in Jepara. In the present model, principal leadership had the largest standardized coefficient. Such differences may reflect respondent characteristics, education level, measurement approaches, and model specification. The relative magnitude of one predictor should therefore not be generalized without regard to research context.

Self-Determination Theory offers an additional interpretation. Ryan and Deci (2020) linked intrinsic and autonomously internalized extrinsic motivation to positive educational outcomes. Values and professional goals may support teachers' sustained participation in instructional activities. However, the present instrument measures achievement, affiliation, cooperation, responsibility, and influence, not SDT's precise motivational categories; the theory thus serves as a supplementary lens rather than a directly tested classification.

In AMO, motivation represents the willingness to deploy one's capabilities. Professional competence provides the capacity for instruction, but realizing that capacity also requires effort. The positive motivation coefficient is consistent with the importance of the motivation dimension. As Bos-Nehles et al. (2023) observed, ability and motivation must also be interpreted in relation to organizational opportunities for performance.

The result highlights the importance of psychological conditions in teacher management. Recognition of professional achievements, development opportunities, collaborative work environments, and clear responsibility allocation may support motivation. Their effectiveness would still require direct evaluation because these approaches were not tested as interventions. Work motivation should therefore complement, rather than replace, leadership and competence development.

**Professional Competence and Teacher Performance**

The third hypothesis was supported: professional competence was positively and significantly associated with teacher performance (β = 0.356, p = 0.005), even after adjustment for leadership and work motivation. Although its standardized coefficient was smaller than those of the other predictors, competence remained a statistically significant component of the model.

Professional competence encompasses disciplinary knowledge, understanding of competency standards, instructional-material development, professional reflection, and educational technology use. Teachers with stronger mastery may be better positioned to explain concepts clearly, connect content to students' circumstances, and develop relevant learning resources. Reflective practice may support ongoing improvement. Professional competence therefore constitutes an important individual resource for fulfilling teaching responsibilities.

The pattern agrees with Putra and Negara (2021), who found contributions of professional competence and motivation to primary school teacher performance. Triyani et al. (2022) similarly reported a positive significant association at SD IBA Palembang, with professional competence explaining 37.7% of performance variance in a simple regression model. Their $R^2$ should not be compared directly with that of the present multiple regression because the number of predictors, respondents, and analytical structures differ.

Rahmayanti et al. (2021) likewise reported that professional competence was associated with teacher performance when motivation and work discipline were included. Their results suggest that professional competence remains relevant even when other individual factors are statistically controlled.

Kraft et al. (2018) provide further context through a meta-analysis of 60 causal studies of teacher coaching, which found positive effects on instruction and student achievement. Coaching interventions are conceptually different from questionnaire-based professional competence, but their findings highlight the importance of developing teachers' professional practice and capacity.

Within AMO, professional competence corresponds to ability, or the knowledge and skills required to perform work. Yet competence should be interpreted jointly with motivation and organizational support. The significant positive coefficient is compatible with the theoretical importance of individual capacity, without suggesting that it alone determines teacher performance.

A smaller competence coefficient does not mean that professional development should be a lower priority in all educational settings. It describes only the standardized partial association in this model. Improving subject mastery, reflective teaching, educational technology skills, instructional materials, and professional mentoring remains relevant, particularly when development activities respond to teachers' actual needs and performance assessments.

**Simultaneous Relationships of Leadership, Motivation, and Competence with Teacher Performance**

The fourth hypothesis was supported: principal leadership, work motivation, and professional competence jointly showed a significant association with teacher performance, $F(3, 32) = 15.877$, $p < 0.001$. The model explained 59.8% of the variance in the analyzed teacher performance scores ($R^2 = 0.598$); the remaining 40.2% was not explained by the predictors and was included in the residual component. That unexplained share cannot be assigned to particular factors without further analysis.

The result supports a multidimensional view of teacher performance. Leadership relates to organizational conditions and support, motivation to willingness and effort, and competence to the capacity to teach. Each showed a positive partial association, and together they formed a significant model. The significant overall result, however, does not establish that the variables interact or that their relationships are causal.

This pattern is consistent with Romy et al. (2021), who linked pedagogical competence, leadership, and motivation to teacher performance in public primary schools in Medan. Their study supports consideration of ability-related, leadership, and motivational factors together. However, their competency construct was pedagogical competence, whereas the present research focuses specifically on professional competence.

Setyaningrum and Irambona (2024) likewise found significant positive relationships of principal leadership, work competence, and motivation with primary school teacher performance in Yogyakarta. Similar predictor structures strengthen the case for multivariate models, although differences in construct operationalization and sample characteristics prevent direct equivalence of regression coefficients.

The simultaneous findings can be interpreted through AMO, which connects ability, motivation, and opportunity to work performance. Bos-Nehles et al. (2023) stressed that these dimensions and associated organizational practices require careful conceptual delineation. Professional competence represents ability; motivation reflects willingness to exert effort; and principal leadership is interpreted as organizational support related to opportunity. The three positive associations are conceptually consistent with AMO, although their interaction was not tested directly.

These results imply that managing teacher performance should integrate individual and organizational considerations. Professional development may be more meaningful when schools also provide opportunities to apply new skills. Motivation initiatives should likewise be aligned with leadership support and professional needs. An integrated management approach thus has a broader conceptual foundation than one focused solely on a single predictor.

**Theoretical and Practical Implications and Interpretive Limitations**

Theoretically, the model demonstrates how teacher performance may be analyzed through individual ability, psychological motivation, and organizational support. All three predictors were positively and significantly associated with performance, although their partial associations differed in magnitude. The pattern illustrates the use of AMO in educational human resource management. Nevertheless, principal leadership is only one aspect of opportunity: autonomy, participation, resource access, and decision-making opportunities also matter.

Practically, the model emphasizes an integrated teacher management strategy. Leadership development may focus on constructive academic supervision, clear educational goals, feedback, and individual mentoring. Motivation initiatives may recognize professional achievements, encourage collaboration, and support responsibility and self-development. Competence development can emphasize subject mastery, reflective practice, educational technology, and instructional-resource development. Such conceptual implications should be evaluated against the needs and performance evidence of each school.

Interpretation must consider the study's design and scope. The research involved 36 teachers at six public primary schools in the Dwarawati School Cluster, Semarang, limiting generalizability to broader teacher populations. Teachers within the same school may share working conditions that affect their responses. Furthermore, the cross-sectional design examines associations observed at one time and cannot establish cause and effect. Regression coefficients should therefore be interpreted as conditional associations rather than causal estimates. Generalization to other contexts would require additional research with broader samples, more schools, and varied designs.

Because the same respondents completed questionnaires for all variables, common-method bias remains possible (Podsakoff et al., 2003). Self-assessed performance is also not identical to classroom observation or independent appraisal. Moreover, the 36 observations nested within six schools may limit precision and generate within-school dependence not fully captured by ordinary regression. Interpretations should therefore remain consistent with the measurement process, analytical assumptions, and dataset characteristics.

Overall, the analysis revealed positive associations between principal leadership, work motivation, professional competence, and teacher performance. Leadership had the largest standardized coefficient, while motivation and competence retained positive partial associations. Their inclusion in one model offers a framework for analyzing teacher performance from individual and organizational perspectives. The strength and practical relevance of the model should be understood within the available evidence and methodological constraints.

## *5)* Concluding Remarks and Recommendation

The results indicate that principal leadership, work motivation, and professional competence are positively and significantly associated with primary school teacher performance, both individually and jointly. Principal leadership shows the strongest relative association, while motivation and professional competence also help explain performance differences. These findings highlight the importance of leadership quality as an organizational factor supporting teachers' professional duties. Overall, they emphasize educational human resource management that integrates school leadership, work motivation, and professional competence as complementary factors for teacher performance.

From a theoretical perspective, the findings support the relevance of the Ability–Motivation–Opportunity (AMO) framework for understanding associations among individual characteristics, psychological conditions, organizational support, and teacher performance. Professional competence represents teachers' ability to master and develop instructional content; work motivation captures their willingness to fulfill professional responsibilities; and principal leadership represents organizational support providing guidance, supervision, and opportunities to use competence. Together, these dimensions enrich the understanding of performance in primary education. However, the study did not test interactions or causal mechanisms among AMO dimensions, so its theoretical contribution chiefly concerns the interpretation of associations among the variables.

In practice, the findings provide considerations for principals and education stakeholders seeking integrated strategies to enhance teacher performance. Leadership initiatives should emphasize effective academic supervision, clear communication of instructional goals, constructive feedback, role modeling, and mentoring tailored to teachers' needs. Motivation can be supported through recognition of professional achievements, collaborative working conditions, participation in decision making, and fair allocation of responsibilities. Professional competence development should emphasize content mastery, instructional innovation, educational technology, reflective practice,

and the use of assessment results to improve teaching. These efforts should be sustained and tailored to school characteristics.

The study has limitations related to design, measurement, and participant coverage. Its cross-sectional approach cannot establish causality because variables were measured during the same period. Questionnaires completed by the same respondents may generate common-method bias, particularly because self-rated performance was not corroborated through classroom observation or independent assessment. The focus on the Dwarawati School Cluster also restricts generalization to schools with different characteristics. Within-school clustering may affect observation independence, and the model omits potentially relevant factors such as teaching experience, workload, organizational climate, well-being, and instructional resources.

Future research should include a wider range of schools and teacher characteristics to develop a more comprehensive understanding of performance. Combining questionnaires with classroom observations, principal evaluations, and professional records could strengthen measurement and reduce reliance on self-report. Longitudinal or multilevel designs may help clarify changing relationships and account for school-level characteristics. Expanding the model to include job satisfaction, self-efficacy, school climate, and professional development support could further advance theory and yield more context-sensitive recommendations. Thus, improving teacher performance calls for policies that develop individual capacity alongside supportive leadership, sustained motivation, and a professional environment conducive to quality instruction.

## Statement of Use of Generative AI

During the preparation of this work, the author used ChatGPT to assist in improving clarity and readability of the text. The author reviewed and edited the output and takes full responsibility for the content of the publication.

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