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Transformational Leadership and Interpersonal Communication of Principals on Teachers' Innovative Work Behavior in Kesesi Elementary Schools Pekalongan Regency

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Abstract:
Teachers' innovative work behavior is an important prerequisite for improving the quality of learning, yet it depends heavily on the leadership climate and the quality of communication in schools. This study aimed to examine the effect of principals' transformational leadership and interpersonal communication on teachers' innovative work behavior. A quantitative associative approach was employed, using a questionnaire administered to 186 elementary school teachers in Kesesi District, Pekalongan Regency. The data were analyzed with descriptive statistics, Pearson correlation, and simple linear regression (F-test, t-test, and coefficient of determination) using SPSS. The descriptive results showed that transformational leadership (M = 133.66), interpersonal communication (M = 197.09), and innovative work behavior (M = 149.46) were mostly in the high to very high categories. Transformational leadership correlated positively with innovative work behavior ($r = 0.470$, $p < 0.01$) and had a significant effect ($F = 52.041$; $t = 7.214$; $p < 0.001$), explaining 22.0% of its variance. Interpersonal communication also correlated positively ($r = 0.436$, $p < 0.01$) and had a significant effect ($F = 43.206$; $t = 6.573$; $p < 0.001$), explaining 19.0% of the variance. These findings indicate that teachers' innovative work behavior increases when principals articulate an inspiring vision, provide individualized support, and communicate openly and empathetically. Elementary schools are therefore encouraged to strengthen principals' transformational and communicative competencies through continuous leadership development.

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Introduction (مقدمة)

Schools are required to continuously adapt their teaching practices to changing curricula,

technologies, and learner characteristics. Under these conditions, teachers can no longer rely on routine practice alone; they are expected to generate, promote, and apply new ideas in their work. This capacity is commonly referred to as innovative work behavior, defined as the intentional creation, introduction, and application of new ideas within a work role, group, or organization (Janssen, 2000). It typically unfolds through idea exploration, idea generation, idea championing, and idea implementation (De Jong & Den Hartog, 2010). A review of the literature indicates that teachers' innovative behavior is shaped by both individual and contextual factors, among which the support of school leaders is prominent (Thurlings, Evers, & Vermeulen, 2015). Indonesian studies likewise treat innovative work behavior as important for teachers and education personnel, and report that principals' leadership and work motivation are related to teachers' innovative behavior (Hardianto, Hidayat, & Zulkifli, 2021; Setyaningrum, Taufiqulloh, & Habibi, 2024).

The principal is the most influential contextual actor in this regard. Transformational leadership, which consists of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration, encourages followers to exceed expectations and to question established ways of working (Bass & Riggio, 2006). In educational settings, a meta-analytic review has associated transformational school leadership with positive outcomes at the teacher and organizational levels (Leithwood & Sun, 2012). More generally, leader behavior and a supportive work climate have been identified as determinants of individual innovation in the workplace (Scott & Bruce, 1994). Studies in Indonesian elementary schools point in the same direction: principals' transformational leadership was positively related to teacher innovation in public elementary schools in Bukittinggi (Haestetika, Marsidin, Anisah, & Sulastri, 2023), to teacher performance (Bahtiar, Nur, & Arhesa, 2026; Dewi, Zubaidah, & Anwar, 2026; Wote & Patalatu, 2019), and to teacher work motivation (Setia, Anwar, & Utami, 2026). A literature review concludes that it improves teacher performance in elementary schools (Elviliza, Yulita, Gistituati, Rusdinal, & Nellitawati, 2025), and a systematic review associates it with learning innovation and educational quality (Nellitawati & Ginanjar, 2026). Principal leadership has also been found to be related to teacher innovativeness (Khodijah, Patras, & Julaeha, 2024) and teacher performance (Noorsanti, Zamroni, & Salehudin, 2023). Evidence outside schools is less consistent: a study of Islamic bank employees found no significant effect of transformational leadership on innovative work behavior (Wardhani & Gulo, 2017), whereas a study of employees in an Industry 4.0 context reported positive effects of transformational leadership and organizational climate (Asbari, Santoso, & Purwanto, 2019).

Besides leadership style, the way a principal communicates is also expected to matter. Interpersonal communication that is characterized by openness, empathy, supportiveness, positiveness, and equality (DeVito, 2016) allows teachers to voice ideas, receive feedback, and feel safe in experimenting. Leadership is, in essence, enacted through communication (Northouse, 2018); therefore, a principal's transformational vision may fail to inspire if it is not accompanied by effective interpersonal communication. Indonesian studies indicate that principals' interpersonal communication is related to teacher performance and work ethic (Purba, 2023; Rostiana, Hanafi, & Sholih, 2022; Azizah & Priyono, 2024), that interpersonal communication is central to the principal's leadership role (Aswaruddin, Anggraini, Sirait, Sibarani, & Harahap, 2025; Nisa, Situmorang, Ardiansyah, Khotimah, & Aswaruddin, 2025), and that transformational leadership and interpersonal communication together relate to teachers' achievement motivation (Sumaji, 2022). Among elementary school teachers in Labuhan Batu, interpersonal communication also had a direct positive effect on innovative behavior (Siregar, Wow, & Hambali, 2023).

Despite these theoretical arguments, empirical evidence from the elementary school context is still needed to show how strongly each of the two variables is related to teachers' innovative

work behavior. Elementary school teachers in particular work closely with a single class throughout the day and depend on the principal for direction, resources, and support, which makes the principal's leadership and communication especially relevant. Evidence from Kesesi District, Pekalongan Regency, however, remains limited. This study therefore aimed to (1) describe the levels of principals' transformational leadership, principals' interpersonal communication, and teachers' innovative work behavior among elementary school teachers in Kesesi District; (2) examine the effect of principals' transformational leadership on teachers' innovative work behavior in Kesesi District; and (3) examine the effect of principals' interpersonal communication on teachers' innovative work behavior. The hypotheses were: H1, principals' transformational leadership has a positive and significant effect on teachers' innovative work behavior; and H2, principals' interpersonal communication has a positive and significant effect on teachers' innovative work behavior.

Method (منهج)

Research Design

This study employed a quantitative approach with an associative (causal-explanatory) design to test the effect of two independent variables, namely principals' transformational leadership (X1) and principals' interpersonal communication (X2), on one dependent variable, namely teachers' innovative work behavior (Y) (Sugiyono, 2019).

Participants

The participants were 186 elementary school (SD) teachers in Kesesi District, Pekalongan Regency, Central Java, Indonesia. All 186 questionnaires were returned and analyzed (N = 186).

Instruments

Data were collected through a closed-ended questionnaire with a Likert-type response scale, and respondents rated their principal (X1 and X2) and their own innovative behavior (Y). The observed score ranges were 36–150 for transformational leadership, 58–220 for interpersonal communication, and 81–180 for innovative work behavior. For descriptive purposes, scores on each variable were divided into five equal-interval categories: very low, low, fairly high, high, and very high.

Data Analysis

The analysis was conducted in SPSS in three stages. First, descriptive statistics (minimum, maximum, mean, and standard deviation) and frequency distributions by category were computed for each variable. Second, the Pearson product-moment correlation was used to examine the relationship between each independent variable and Y. Third, simple linear regression was used to test the hypotheses, using the F-test (model significance), the t-test (significance of the regression coefficient), and the coefficient of determination (R^2) (Ghozali, 2018). The significance level was set at 0.05.

Result (نتائج)

Descriptive Statistics

Table 1 summarizes the descriptive statistics of the three variables. The mean of each variable lies in the upper part of its possible range: transformational leadership averaged 133.66 (89.1% of the maximum observed score of 150), interpersonal communication 197.09 (89.6% of 220), and innovative work behavior 149.46 (83.0% of 180).

Table 1. Descriptive statistics of research variables

Variable	N	Min.	Max.	Mean	Std. Deviation
Transformational leadership (X1)	186	36.00	150.00	133.66	17.69
Interpersonal communication (X2)	186	58.00	220.00	197.09	25.33
Innovative work behavior (Y)	186	81.00	180.00	149.46	20.30

Source: Primary data processed with SPSS.

The distribution of respondents by category is presented in Table 2 and Figure 1. Most teachers in Kesesi District perceived their principal's transformational leadership as high or very high (28.49% + 68.28% = 96.77%), and the same applies to interpersonal communication (30.65% + 66.67% = 97.32%). Teachers' innovative work behavior was more evenly spread: 68.81% of the teachers were in the high or very high categories, 22.04% were in the fairly high category, and 9.14% were in the low or very low categories.

Table 2. Distribution of respondents by category, f (%)

Category	X1	X2	Y
Very low	3 (1.61)	3 (1.61)	1 (0.54)
Low	0 (0.00)	0 (0.00)	16 (8.60)
Fairly high	3 (1.61)	2 (1.08)	41 (22.04)
High	53 (28.49)	57 (30.65)	66 (35.48)
Very high	127 (68.28)	124 (66.67)	62 (33.33)
Total	**186 (100.00)**	**186 (100.00)**	**186 (100.00)**

Source: Primary data processed with SPSS.

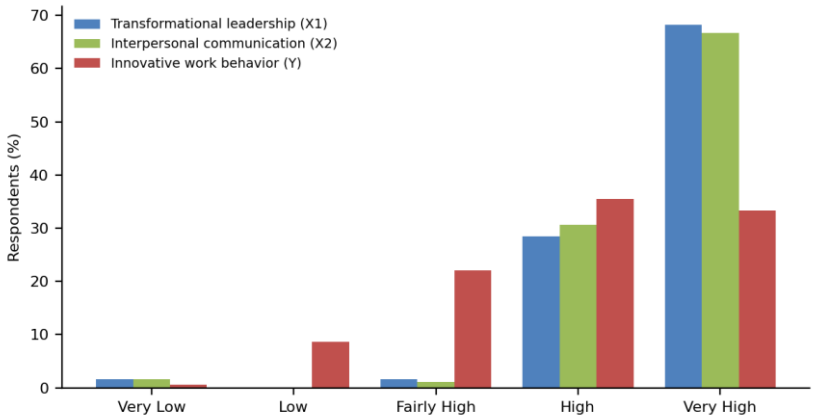

Figure 1. Percentage of respondents by category for each variable

Effect of Transformational Leadership on Innovative Work Behavior

The Pearson correlation between X1 and Y was 0.470 ($p < 0.01$, N = 186), indicating a positive relationship of moderate strength. The regression model was significant ($F(1, 184) = 52.041$; $p < 0.001$). The regression equation was $Y = 77.455 + 0.539\ X1$. The coefficient of X1 was positive and significant (B = 0.539; β = 0.470; $t = 7.214$; $p < 0.001$), so each one-point increase in transformational leadership score is associated with a 0.539-point increase in innovative work

behavior score. The coefficient of determination was $R^2 = 0.220$ (adjusted $R^2 = 0.216$), meaning that transformational leadership explained 22.0% of the variance in teachers' innovative work behavior. H1 is therefore accepted.

Effect of Interpersonal Communication on Innovative Work Behavior

The Pearson correlation between X2 and Y was 0.436 ($p < 0.01$, N = 186), also a positive and moderate relationship. The regression model was significant ($F(1, 184) = 43.206$; $p < 0.001$), with the equation $Y = 80.568 + 0.350\ X2$. The coefficient of X2 was positive and significant (B = 0.350; β = 0.436; $t = 6.573$; $p < 0.001$). The coefficient of determination was $R^2 = 0.190$ (adjusted $R^2 = 0.186$), so interpersonal communication explained 19.0% of the variance in innovative work behavior. H2 is therefore accepted. The results of both regressions are compared in Table 3.

Table 3. Results of correlation and simple linear regression on innovative work behavior (Y)

Predictor	r	R^2	Adj. R^2	F	B	β	t	Sig.
Transformational leadership (X1)	0.470	0.220	0.216	52.041	0.539	0.470	7.214	0.000
Interpersonal communication (X2)	0.436	0.190	0.186	43.206	0.350	0.436	6.573	0.000

Source: Primary data processed with SPSS.

Discussion (مناقشة)

The findings show that both principals' transformational leadership and interpersonal communication are positively and significantly related to teachers' innovative work behavior. This is consistent with the argument that leaders who provide a compelling vision, intellectual stimulation, and individual attention create conditions in which employees dare to propose and apply new ideas (Bass & Riggio, 2006; Scott & Bruce, 1994). In school settings, such principals encourage teachers to rethink instructional routines, which corresponds to the idea exploration and generation stages of innovative work behavior (De Jong & Den Hartog, 2010). The result is also in line with Haestetika et al. (2023), who found that principals' transformational leadership explained 17.4% of teacher innovation in public elementary schools, a share close to the 22.0% observed here.

Interpersonal communication likewise showed a meaningful effect. A principal who listens, shows empathy, and treats teachers as equals reduces the perceived risk of sharing unconventional ideas and makes it easier to obtain support for their implementation (DeVito, 2016). This agrees with Siregar et al. (2023), who found a direct positive effect of interpersonal communication on teachers' innovative behavior in elementary schools, although the effect they reported was smaller (3.09%) than the 19.0% found here, and with studies relating principals' interpersonal communication to teacher performance (Azizah & Priyono, 2024; Purba, 2023; Rostiana et al., 2022). The slightly larger contribution of transformational leadership (22.0%) than of interpersonal communication (19.0%) suggests that direction and inspiration from the principal matter somewhat more than communication quality alone; yet the two values are close, and both variables should be developed together, since communication is the means through which leadership is enacted (Northouse, 2018). Studies that examine both variables report that transformational leadership and interpersonal communication jointly relate to teacher outcomes (Sumaji, 2022), and Indonesian studies emphasize the role of interpersonal communication in principals' leadership (Aswaruddin et al., 2025; Nisa et al., 2025).

Two points deserve attention. First, the explained variance is moderate; around 78% (X1)

and 81% (X2) of the variation in innovative work behavior is attributable to other factors, such as teachers' individual characteristics, school climate, workload, and organizational support (Thurlings et al., 2015). Work motivation, for example, has been shown to predict teacher innovation alongside transformational leadership (Haestetika et al., 2023; Setyaningrum et al., 2024), and the effect of leadership may run through motivation or job satisfaction (Bahtiar et al., 2026; Nafarin et al., 2026). Evidence from outside schools is also mixed (Asbari et al., 2019; Wardhani & Gulo, 2017), which suggests that the effect of leadership depends on context. Second, principals' leadership and communication were rated very high by almost all respondents (above 96%), while innovative work behavior was lower and more varied (9.14% low or very low and 22.04% fairly high). This gap suggests that favorable leadership perceptions do not automatically turn into innovation in the classroom, so principals also need to provide concrete opportunities, time, resources, and recognition for teachers' innovative initiatives. Strengthening principals' transformational leadership and teachers' competence has likewise been recommended in recent Indonesian studies (Nafarin et al., 2026; Nellitawati & Ginanjar, 2026).

This study has limitations. The two predictors were tested in separate simple regressions, so their joint and unique contributions could not be separated; future studies should apply multiple regression or structural equation modeling. The data were self-reported and cross-sectional, and the high scores may reflect a ceiling effect or social desirability. Future studies are also encouraged to include mediating or moderating variables, such as school climate or teacher self-efficacy.

Conclusion (خاتمة)

Principals' transformational leadership has a positive and significant effect on teachers' innovative work behavior ($r = 0.470$; $B = 0.539$; $t = 7.214$; $p < 0.001$; $R^2 = 0.220$), and principals' interpersonal communication also has a positive and significant effect ($r = 0.436$; $B = 0.350$; $t = 6.573$; $p < 0.001$; $R^2 = 0.190$). Most teachers perceived their principal's leadership and communication as high or very high, whereas their own innovative work behavior was more varied. Practically, the Kesesi District education office and school supervisors should strengthen principals' transformational and interpersonal communication competencies through training and mentoring, and combine them with organizational support for teacher innovation.

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