Effect of Organizational Climate and Work Environment on Work Quality of Senior High School Teachers in West Nias Regency

Yonata Waruwu, Saimara Sebayang, Kiki Farida Ferine

Abstract

This study aims to analyze the partial and simultaneous effects of organizational climate and work environment on the work quality of senior high school (SMA) teachers in West Nias Regency. A quantitative approach with an associative causal design was employed. Data were collected through a five-point Likert-scale questionnaire administered to 73 teachers and analyzed using IBM SPSS through validity and reliability tests, classical assumption tests, multiple linear regression, the t-test, the F-test, and the coefficient of determination. All items were valid and reliable (Cronbach's alpha 0.854–0.873). The regression equation obtained was $Y = -0.683 + 0.258X1 + 0.523X2$. Organizational climate had a positive and significant effect on teacher work quality ($t = 4.962$; $p < 0.001$), and so did the work environment ($t = 9.322$; $p < 0.001$), which was the more dominant predictor ($\beta = 0.642$). Simultaneously, both variables significantly affected work quality ($F = 255.388$; $p < 0.001$) and explained 87.6% of its variance. These findings imply that school principals and the regional education office should foster a supportive organizational climate and improve the physical and social working conditions of schools to raise teacher work quality in disadvantaged regions.

Keywords: *organizational climate; work environment; work quality; senior high school teachers*

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Introduction

Teachers are the central actors in determining the quality of education, positions teachers as professionals whose main duties are to educate, teach, guide, direct, train, assess, and evaluate students . Empirical evidence consistently shows that the quality of teachers' work is among the strongest school-level determinants of student learning outcomes and long-term economic returns . Consequently, efforts to improve the quality of education cannot be separated from efforts to improve the work quality of teachers.

The work quality of teachers is not shaped solely by individual competence; it is also influenced by the context in which teachers work. Field theory holds that behavior is a function of the person and the environment . In schools, this environment has two closely related faces: the organizational climate, which concerns how teachers perceive the structure, responsibility, warmth, and support within the school and the work environment, which covers the physical and non-physical conditions under which teachers carry out their duties . Research across many countries indicates that a positive school climate is associated with higher teacher self-efficacy, job satisfaction, and performance .

West Nias Regency in North Sumatra Province is one of the regions designated as a disadvantaged region for the 2020–2024 period. Senior high schools in this area face challenges such as limited facilities, geographical constraints, and uneven support systems, which can affect both the organizational climate and the working conditions of teachers. Under these circumstances, understanding which contextual factors most strongly influence teacher work quality is important for setting priorities in school management and regional education policy.

Most previous studies on school climate have focused on teacher job satisfaction or self-efficacy as outcomes and were conducted in urban or national-scale settings. Studies that jointly examine organizational climate and work environment as predictors of teacher work quality in disadvantaged island regions of Indonesia remain scarce. This study addresses that gap by examining senior high school teachers in West Nias Regency. Accordingly, this study aims to analyze the effect of organizational climate on teacher work quality, the effect of the work environment on teacher work quality, and the simultaneous effect of both variables on teacher work quality.

Literature Review

2.1 Organizational Climate

Organizational climate refers to a set of measurable properties of the work environment that are perceived, directly or indirectly, by the people who live and work in it and that influence their motivation and behavior . Stringer (2021), emphasizes that climate is a collective perception that can be managed by leaders through structure, standards, responsibility, recognition, support, and commitment . In educational organizations, Noe and Hollenbeck (2022) describe school climate as the relatively enduring quality of the school environment that is experienced by teachers and affects their behavior . In this study, organizational climate is measured by four indicators: structure, responsibility, warmth, and support.

2.2 Work Environment

The work environment is the totality of tools and materials, the surroundings in which a person works, the work methods, and the work arrangements, both individually and as a group . It consists of a physical dimension, such as lighting, air circulation, cleanliness, and security, and a non-physical dimension, namely relationships with superiors and colleagues. In the two-factor theory, working conditions and interpersonal relations are hygiene factors whose deficiency generates dissatisfaction and lowers effort . This study measures the work environment through four indicators: physical facilities, comfort, safety, and collegial relationships.

2.3 Teacher Work Quality

Work quality is the extent to which the output of work meets expected standards of accuracy, thoroughness, and timeliness . Mangkunegara describes work quality as a component of performance reflected in neatness, accuracy, and the conformity of results with established standards . For teachers, work quality is reflected in the accuracy of lesson planning and delivery, the thoroughness of assessment

and administration, and the timely completion of professional tasks. Accordingly, teacher work quality is measured by three indicators: accuracy, thoroughness, and timeliness.

2.4 Hypotheses

The hypotheses are formulated as follows.

H1: organizational climate has a positive and significant effect on teacher work quality.

H2: the work environment has a positive and significant effect on teacher work quality.

H3: organizational climate and the work environment simultaneously have a significant effect on teacher work quality. The research framework is presented in Figure 1.

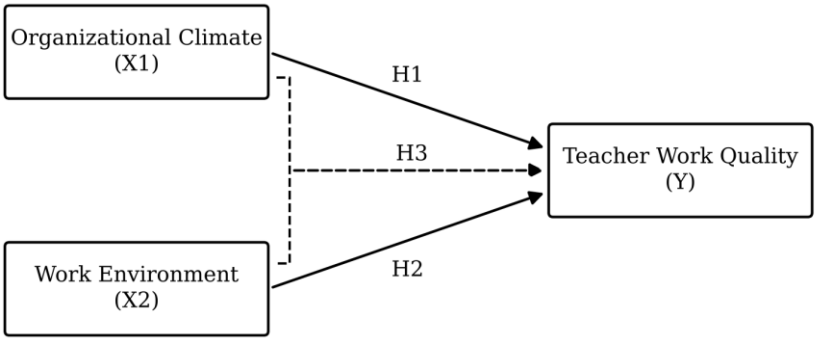


Figure 1. Research framework

Research Methodology

This study employed a quantitative approach with an associative causal design to explain the effect of independent variables on a dependent variable . The research was conducted in senior high schools (SMA) in West Nias Regency, North Sumatra. The respondents were 73 SMA teachers in West Nias Regency who completed the research questionnaire.

The data were analyzed using SPSS Statistics. Instrument validity was tested with the Pearson product-moment correlation between each item and its total score; an item is valid if r-count exceeds r-table (0.230 at $\alpha = 0.05$, df = 71). Reliability was tested with Cronbach's alpha, with a threshold of 0.70 Classical assumption tests comprised the Kolmogorov–Smirnov normality test, the multicollinearity test (tolerance > 0.10 and VIF < 10), the Glejser heteroscedasticity test, and the autocorrelation test (Durbin–Watson and Runs Test) . Hypotheses were tested with multiple linear regression in the form:

$$Y = a + b_1X_1 + b_2X_2 + e$$

where Y is teacher work quality, a is the constant, b_1 and b_2 are regression coefficients, X_1 is organizational climate, X_2 is the work environment, and e is the error term. Partial effects were tested with the t-test (t-table = 1.994), the simultaneous effect with the F-test (F-table = 3.128), and the explanatory power of the model with the adjusted coefficient of determination (Adjusted R^2), all at a 5% significance level .

Results

4.1 Validity and Reliability Tests

Table 1 shows that every item has an r-count greater than the r-table value of 0.230, so all eleven items are valid. The Cronbach's alpha values of 0.873 for organizational climate, 0.854 for the work environment, and 0.861 for work quality all exceed 0.70, indicating that the instrument is reliable.

Table 1. Results of validity and reliability tests

Variable	Item	r-count	r-table	Validity	Cronbach's α	Reliability
Organizational climate (X1)	X1.1	0.892	0.230	Valid	0.873	Reliable
	X1.2	0.760	0.230	Valid		
	X1.3	0.888	0.230	Valid		
	X1.4	0.866	0.230	Valid		
Work environment (X2)	X2.1	0.867	0.230	Valid	0.854	Reliable
	X2.2	0.839	0.230	Valid		
	X2.3	0.794	0.230	Valid		
	X2.4	0.845	0.230	Valid		
Work quality (Y)	Y1	0.914	0.230	Valid	0.861	Reliable
	Y2	0.916	0.230	Valid		
	Y3	0.842	0.230	Valid		

Source: SPSS output

4.2 Descriptive Statistics

Table 2 presents the descriptive statistics. Using a five-category interval (1.00–1.80 very low; 1.81–2.60 low; 2.61–3.40 moderate; 3.41–4.20 high; 4.21–5.00 very high), the mean item scores of organizational climate (4.08), the work environment (4.10), and teacher work quality (4.04) all fall into the high category. The lowest item mean is found in Y3 (3.82, timeliness), indicating that the timely completion of tasks is the weakest aspect of teacher work quality.

Table 2. Descriptive statistics of research variables

Variable	Min	Max	Mean	Std. Dev.	Mean per item	Category
Organizational climate (X1)	11	20	16.32	2.460	4.08	High
Work environment (X2)	11	20	16.40	2.284	4.10	High
Work quality (Y)	9	15	12.11	1.860	4.04	High

Source: SPSS output

4.3 Classical Assumption Tests

The Kolmogorov–Smirnov test on the unstandardized residuals yields a statistic of 0.094 with Asymp. Sig. = 0.156 > 0.05, so the residuals are normally distributed. The tolerance value of 0.363 (> 0.10) and VIF of 2.756 (< 10) indicate no multicollinearity. The Glejser test shows significance values of 0.147 for X1 and 0.070 for X2, both above 0.05, so there is no heteroscedasticity. The Durbin–Watson value of 1.586 lies in the inconclusive region, so the Runs Test was applied; its Asymp. Sig. of 0.554 > 0.05 confirms that the residuals are random and free from autocorrelation.

Table 3. Results of classical assumption tests

Test	Method	Result	Conclusion
Normality	One-sample Kolmogorov–Smirnov	Stat. = 0.094; Sig. = 0.156	Normal
Multicollinearity	Tolerance and VIF	Tolerance = 0.363; VIF = 2.756	No multicollinearity
Heteroscedasticity	Glejser	Sig. X1 = 0.147; Sig. X2 = 0.070	No heteroscedasticity
Autocorrelation	Durbin–Watson; Runs Test	DW = 1.586; Runs Sig. = 0.554	No autocorrelation

Source: SPSS output

4.4 Multiple Linear Regression and Partial Test (t-Test)

Table 4 presents the regression coefficients. The resulting equation is:

$$Y = -0.683 + 0.258X_1 + 0.523X_2$$

The constant of −0.683 is not significant (Sig. = 0.236) and has no substantive meaning because the scale has no true zero. The coefficient of 0.258 for organizational climate means that each one-point increase in organizational climate increases teacher work quality by 0.258 points, assuming the work environment is constant. The coefficient of 0.523 for the work environment means that each one-point improvement in the work environment increases work quality by 0.523 points, assuming organizational climate is constant.

For organizational climate, t-count = 4.962 > t-table = 1.994 with Sig. < 0.001; thus H1 is accepted. For the work environment, t-count = 9.322 > 1.994 with Sig. < 0.001; thus H2 is accepted. The standardized coefficients show that the work environment (β = 0.642) is the more dominant predictor compared with organizational climate (β = 0.342).

Table 4. Regression coefficients and t-test results

Model	B	Std. Error	Beta	t	Sig.
(Constant)	−0.683	0.571		−1.195	0.236
Organizational climate (X1)	0.258	0.052	0.342	4.962	0.000
Work environment (X2)	0.523	0.056	0.642	9.322	0.000

Source: SPSS output

4.5 Simultaneous Test (F-Test) and Coefficient of Determination

The F-test yields F-count = 255.388 > F-table = 3.128 with Sig. < 0.001, so H3 is accepted: organizational climate and the work environment simultaneously have a significant effect on teacher work quality. The correlation coefficient R = 0.938 indicates a very strong relationship, and the Adjusted R^2 of 0.876 means that 87.6% of the variation in teacher work quality is explained by the two variables, while the remaining 12.4% is explained by other factors outside the model (Table 5). Decomposing R^2 into the product of each standardized coefficient and its zero-order correlation shows that the work environment contributes 58.7% and organizational climate 29.2%.

Table 5. Results of the F-test and coefficient of determination

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	219.097	2	109.548	255.388	0.000
Residual	30.026	70	0.429		
Total	249.123	72			
R	**R Square**	**Adjusted R Square**	**Std. Error of Estimate**		
0.938	0.879	0.876	0.655		

Source: SPSS output

Discussion

The first finding confirms that organizational climate has a positive and significant effect on the work quality of SMA teachers in West Nias Regency. When teachers perceive clear structures, fair distribution of responsibility, warm relationships, and support from the principal, they are more motivated to plan and deliver lessons carefully and to complete their tasks according to standards. This result is consistent with the view that climate shapes motivation and behavior and with international evidence linking school climate to teacher efficacy and

satisfaction. It also agrees with Indonesian evidence that school climate is associated with teacher job satisfaction and performance.

The second finding shows that the work environment has a positive, significant, and dominant effect on teacher work quality. In a disadvantaged region, adequate facilities, comfortable classrooms, a sense of safety, and supportive collegial relations are concrete preconditions for teachers to work accurately and on time. This supports the two-factor theory, which identifies working conditions and interpersonal relations as hygiene factors , as well as the argument that the physical and non-physical work environment determines employee productivity . The dominance of the work environment over organizational climate suggests that, in the West Nias context, basic working conditions remain the most binding constraint on teacher work quality.

The third finding indicates that organizational climate and the work environment jointly explain 87.6% of the variation in teacher work quality. This high explanatory power, together with the strong correlation between the two predictors ($r = 0.798$), indicates that the two factors reinforce each other: a supportive climate is easier to build in a well-functioning environment, and good facilities are used more productively in a positive climate. The relatively low score on the timeliness indicator (mean 3.82) points to a specific area for improvement, such as reducing administrative burden and providing better scheduling support for teachers.

Conclusion

This study concludes that organizational climate has a positive and significant effect on the work quality of senior high school teachers in West Nias Regency ($t = 4.962$; $p < 0.05$), the work environment has a positive and significant effect and is the dominant predictor ($t = 9.322$; $\beta = 0.642$; $p < 0.05$), and both variables simultaneously have a significant effect on teacher work quality ($F = 255.388$; $p < 0.05$), explaining 87.6% of its variance.

Practically, school principals should strengthen a supportive organizational climate through clear task structures, fair distribution of responsibilities, recognition, and collegial support, while the regional education office should prioritize improvements in school facilities, comfort, and safety in disadvantaged areas. Particular attention should be given to the timeliness of teacher work. Future research is recommended to use a larger sample across several regencies in the Nias Islands, add other predictors such as principal leadership, compensation, and work motivation, and apply structural equation modeling to examine indirect effects.

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