The Investigation of the Influence of Leadership, Work Environment, and Motivation on Teacher Performance on the Quality of Vocational School Education

Gunawan Dwiyono[1], Purnomo Purnomo[2*], Eddy Sutadji[2], Mazarina Devi[2]

[1]Universitas Negeri Malang, Vocational Education, Indonesia
[2]School of Postgraduate, Universitas Negeri Malang, Indonesia
Email: purnomo@um.ac.id

Abstract

The quality of education in Vocational High Schools (SMK) faces significant challenges, particularly concerning teacher leadership, work environment, and motivation. This study aims to investigate the influence of these factors on teacher performance and the overall quality of education in vocational schools throughout Malang Raya. Employing a quantitative research method, data were collected through surveys administered to teachers, focusing on three exogenous variables: Leadership (Teacher Learning Leadership), Work Environment, and Motivation (Internal/Intrinsic Motivation), alongside the endogenous variable of Teacher Performance and the intervening variable of Quality of Education. The results indicate that effective leadership, a supportive work environment, and high levels of motivation significantly enhance teacher performance, positively impacting the quality of education. Leadership (X1) contributes 4% to teacher performance (Y), while the work environment (X2) has a significant impact, contributing 39.4%. Additionally, motivation (X3) accounts for 11.4% of the variance in teacher performance. The overall model demonstrates a coefficient of determination (R^2) of 0.549, indicating that approximately 54.9% of the variability in teacher performance can be explained by the combined effects of leadership, work environment, and motivation. In conclusion, The study emphasizes how crucial it is to create a positive work atmosphere and boost teacher motivation by utilizing effective leadership techniques. The implications of this research provide evidence-based recommendations for developing programs that support teacher performance and improve educational quality in vocational schools. By prioritizing these factors, educational institutions can better equip teachers to fulfill their diverse roles and responsibilities, ultimately benefiting student learning experiences.

Keywords: Teacher Performance, Leadership, Work Environment, Motivation, Vocational Education.

1. Introduction

The quality of education in Vocational High Schools (SMK) is still faced with various challenges, especially related to teacher leadership, work environment and motivation. Even though various initiatives have been attempted to improve educational standards, the reality is that there are still many teaching staff who have not received adequate support in terms of developing professional competencies and providing supporting facilities. This condition has the potential to result in a decline in teacher performance. Furthermore, the lack of awareness of the significance of the teacher's role in the teaching and learning process often results in low student motivation, which in turn results in less than optimal learning outcomes. This situation indicates that although there are opportunities for improvement, there are still a number of external factors that can become obstacles in realizing the expected quality of education at the vocational school level(Teppo et al., 2021)

Various studies show that the quality of education is positively influenced by factors such as the work environment(Anggraini et al., 2017) and teacher leadership. However, several other studies indicate that the influence of these factors is not always significant in certain contexts, for example in vocational schools throughout Malang Raya. Currently, there is no implementation of a structural model that integrates all related variables simultaneously in educational practices in vocational schools. In addition, there is still limited research that examines the interaction between teacher leadership, work environment, and motivation(Ramadhani et al., 2015) in a broader context, as well as how these factors influence each other in efforts to improve the quality of education. Aspects that have not been explored in this research include the impact of differences in teachers' educational backgrounds and teaching experiences on research results, as well as the long-term effects of the interventions implemented(M. Imran Malik, 2011).

This study investigates the intricate relationships among leadership styles, workplace conditions, and motivational factors, and their effects on teacher performance and educational quality in Malang Raya's vocational schools. Utilizing a comprehensive approach, the research seeks to highlight the crucial yet understudied role of teacher performance as a mediating factor in vocational education settings(Purnomo et al., 2022). The investigation centers on analyzing the interplay between these variables and their collective contribution to enhancing educational standards. By doing so, the study aims to generate data-driven suggestions for improving vocational education systems. The research objectives include determining how leadership practices, work environment characteristics, and motivational elements influence teacher effectiveness, and subsequently, how these factors collectively shape the quality of education delivered in Malang Raya's vocational institutions. Additionally, the study explores the potential cascading effects of these variables on student outcomes and overall institutional performance. Through this multifaceted examination, the research strives to provide valuable insights for policymakers, school administrators, and educators to optimize the vocational education landscape in the region.

2. Literature review

Mastering leadership skills is an important ability for educators. These abilities include the ability to design learning strategies effectively, influence positively, guide wisely, and direct students towards achieving predetermined learning goals. Teachers stand at the forefront of education, shouldering immense responsibility for student success. Their multifaceted role encompasses a wide array of crucial functions(Sutadji et al., 2021). These include offering constructive feedback, serving as a wellspring of inspiration, imparting knowledge, structuring learning experiences(Sutadji et al., 2020), fostering motivation, generating innovative ideas, and facilitating the learning process. Moreover, teachers act as mentors, demonstrating complex concepts, managing the educational environment, mediating classroom interactions, overseeing the learning journey, and evaluating student progress. The effectiveness with which educators fulfill these diverse responsibilities profoundly impacts the caliber of education students receive. In essence, teachers are the linchpin of the educational system, orchestrating a complex symphony of roles that shape the intellectual and personal growth of their students. Their ability to navigate these varied responsibilities with skill and dedication is paramount in determining the overall quality and success of the educational experience.

Teacher leadership is very important in the learning context because it can influence students to learn material well and shape their attitudes and behavior, both at school and outside school(Berry et al., 2010). Teachers must have adequate managerial competence because they have two main tasks: teaching and classroom management. Classroom management is an important aspect of teacher managerial competence that must be mastered to increase student learning effectiveness. In addition, tutors have the adaptive ability to adjust leadership styles, when to be authoritarian and when to be democratic, because students' conditions and situations are always changing. An effective teacher is a teacher who can read the situation when teaching and adjust learning strategies according to student needs.

Additionally, teacher leadership is a factor. Additionally, teacher leadership significantly impacts students' religious conduct. PAI teachers are responsible for PAI learning, organizing the school environment to shape Islamic culture, leading the development of school potential, collaborating with all school components, participating in decision-making, and providing religious and social consultations. The results of these efforts can be seen in the positive religious behavior of students which includes the dimensions of belief, practice, experience, knowledge and practice.

Important in shaping students' religious behavior. PAI teachers are fully responsible for PAI learning, organizing the school environment to realize Islamic culture, taking the initiative to develop school potential, collaborating with all elements of the school, being active in decision-making at school, as well as guiding and providing religious guidance. and social consulting. The results of these efforts can be seen in good student religious behavior, including the dimensions of belief, practice, experience, knowledge, and practice. Educational discipline has a substantial impact on the efficacy of teachers and the work environment. A positive work environment can significantly impact a teacher's performance, while a negative work environment can impede it.

Teacher enthusiasm and motivation can be increased in an optimal work environment. Teachers who work in a comfortable and supportive environment will find it easier to inspire students and themselves to learn. This was demonstrated in research conducted at MTs Madani Pao-Pao, which found that a clean and comfortable physical environment can have a positive effect on teacher performance. In addition, a positive work environment can improve teacher knowledge and skills. Teachers will more easily improve their skills and knowledge when they have access to adequate learning facilities and support from school personnel. As a result, teacher performance and productivity increase significantly if the work environment is positive(Berry et al., 2010).

A bad work environment can hinder teacher performance. Teachers who work in an uncomfortable or unsupportive atmosphere will have difficulty motivating themselves and their students. Research that a less-than-optimal work environment can cause teacher performance to not be optimal. In addition, a bad work environment can increase stress and burnout in teachers. Teachers who are in an uncomfortable atmosphere will tend to feel stressed and tired, which can interfere with their performance. The drive and effectiveness of educators have a big impact on the standard of education. Three requirements comprise teacher motivation: the need for achievement, the need to socialize, and the need to master a skill(Kudek Mirošević et al., 2023). In order to enhance the effectiveness of teaching and the creativity of teaching methods, McClelland's theory of achievement motivation demonstrates that this motivation is highly influential in enhancing teacher performance(Suleiman Abdulrahman, 2018).

The character of education is significantly influenced by the performance of teachers. The relationship between instructors and students can be enhanced by enhancing the quality of learning through optimal teacher performance. Professional teachers must have mastery of learning materials, good teaching skills, an understanding of learning principles, and the ability to create effective teaching and learning interactions. Apart from that, teachers' work experience also influences their performance, because the diverse characteristics of students require professional handling(Wilson, 2016). According to research findings, the performance of teachers is significantly and positively influenced by their work motivation. High levels of work motivation can enhance the efficacy of teaching, foster creativity in teaching methods, and foster stronger relationships between teachers and students. Consequently, it is crucial to make an effort to enhance the motivation of teachers in order to enhance the quality of education. Providing training opportunities, adequate administrative support, a conducive work environment, and incentives and rewards for instructors who excel are some of the steps that can be taken.

3. Research methods

Data for this study are gathered through survey research design and quantitative approaches. The population used was students and teachers at Vocational State High Schools (SMKN) in Malang Raya, Indonesia, with a sample of 276 teachers selected randomly as in Table 1. The research instrument used was a questionnaire designed based on the steps for preparing the instrument (Riduwan & Achmad, 2012). Research procedures include instrument preparation, validation by experts, instrument testing, and data collection through questionnaires distributed to respondents.

Table – 1 research population

No	Vocational school name	Teacher Population with work period ≥ 15 years
1	SMKN 11 Malang	57
2	SMKN 4 Malang	72
3	SMKN 6 Malang	47
4	SMKN 01 Singosari Malang	50
5	SMKN 01 Kepanjen Malang	34
6	SMKN 03 Batu	13
	Number of Teachers	276

4. Results

Data description

This research was carried out at State Vocational High Schools throughout Greater Malang. In this data description, the results of the variables used in this research will be explained. To be more specific, there are three exogenous variables, one intervening variable, and one endogenous variable. The three exogenous variables in question consist of Leadership (Teacher Learning Leadership) (X1), Work Environment (X2), and Motivation (Internal/Intrinsic Motivation) (X3). Next, the intervening and endogenous variables in this research are Teacher Performance (Y) and Quality of Education (Z). The data description shown includes mean, median, mode, standard deviation, variance, range, minimum, and maximum.

Teacher Performance (Y)

An analysis of the descriptive statistics for the Teacher Performance (Y) variable reveals several key insights. The central tendency is represented by a median of 33.0000, with the most frequently occurring value (mode) being 30.00. The data's spread is indicated by a standard deviation of 3.56905 and a variance of 12.738. The range of scores spans 14.00 points, from a minimum of 26.00 to a maximum of 40.00. The arithmetic mean of the data set is 33.3720. For a comprehensive overview of these statistical measures concerning Teacher Performance (Y), readers are directed to Table 2, which succinctly summarizes the findings of this descriptive analysis.

Table 2 Description of Teacher Performance Variable Data (Y)

Teacher Performance (Y)	
Mean	33.3720
Median	33,0000
Mode	30.00
Std. Deviation	3.56905
Variance	12,738
Range	14.00
Minimum	26.00
Maximum	40.00

To determine the frequency distribution of the Teacher Performance variable data, we first need to establish the class interval and class length. This study employs five class intervals, with the class length calculated by dividing the range by the number of classes. The frequency distribution of the Teacher Performance variable is as follows:

16.5% (27 respondents) fall into the "not good" category, while 20.1% (33 respondents) are classified as "not good." The "quite good" category comprises the largest group at 32.9% (54 respondents), followed by 23.2% (38 respondents) in the "good" category. Lastly, 7.3% (12 respondents) are considered to have "very good" performance. This distribution reveals that the majority of respondents are in the "quite good" category. For a visual representation of the Teacher Performance variable's frequency distribution, refer to Table 3.

Table 3 Frequency Distribution of Teacher Performance Variables(Y)

No	Intervals	Category	Frequency	Percentage
1	38-40	Very good	27	16.5
2	35-37	Good	33	20.1
3	32-34	Pretty good	54	32.9
4	29-31	Not good	38	23.2
5	26-28	Not good	12	7.3

Quality of Education/School Quality (Quality of Education) (Z)

Table 4 shows the analysis of Education Quality (Z) reveals insightful statistical information. The mean Education Quality score is approximately 22.06, with a median of 22 and a mode of 21. The data shows a standard deviation of about 3.60, indicating the spread of scores around the mean. The variance, which measures the dispersion of scores, is 12.93. The range of scores spans 14 points, with the lowest score being 14 and the highest reaching 28. This distribution provides a comprehensive overview of the Education Quality metric across the studied sample.

Table 4 Description of Education Quality/School Quality Variable Data (Z)

Quality of Education/School Quality (Quality of Education) (Z)	
Mean	22.0610
Median	22,0000
Mode	21.00
Std. Deviation	3.59566
Variance	12,929
Range	14.00
Minimum	14.00
Maximum	28.00

To analyze the frequency distribution of the Education Quality variable data, we must first establish the class interval and class length. This study employs five class intervals. To determine the class length, we calculate the range of the data and divide it by the number of classes. This approach allows us to organize the data into meaningful groups. The resulting frequency distribution of the Education Quality variable provides insights into how the data is spread across different categories, revealing patterns and concentrations within the dataset. This information is crucial for understanding the overall distribution of education quality scores and identifying any notable trends or outliers(Jackson & Schuler, 1995).

The frequency distribution of the Education Quality variable is 20.7% or 34 respondents; 22% or 36 respondents; 34.8% or 57 respondents; 14.6% or 24 respondents; and 7.9% or 13 respondents were included in the categories very good, good, quite good, not so good and not good. Thus it is known that respondents in the quite good category are those who include the

most. The frequency distribution graph for the variable quality of education/school quality can be seen in Table 5.

Table 5 Frequency Distribution of Education Quality/School Quality Variables (Z)

No	Intervals	Category	Frequency	Percentage
1	26-28	Very good	34	20.7
2	23-25	Good	36	22.0
3	20-22	Pretty good	57	34.8
4	17-19	Not good	24	14.6
5	14-16	Not good	13	7.9

Data analysis

The data analysis method applied in this research is path analysis. Before conducting path analysis testing, the data obtained must meet the requirements. The requirement in question is that the data must be tested for classical assumptions or analysis prerequisite tests first, which is then followed by path analysis testing. In this research, the first step before carrying out analysis is carrying out prerequisite tests, which include checking normality, linearity, and potential multicollinearity tests. Meanwhile, path analysis in this research uses multiple regression tests for the first sub-structure and second sub-structure(Nweke et al., 2019).

5. Analysis Prerequisite Test Results

Normality Test Results

If the test results indicate Sig > 0.05, the data is considered regularly distributed, which is the conclusion drawn from the test conditions.. The normality test results, as shown in Table 6, indicate that the variables leadership, work environment, motivation, teacher performance, and quality of education/school quality all have significance scores exceeding 0.05. This suggests that the data for these variables follows a normal distribution pattern. These findings, obtained through SPSS analysis, provide important information about the statistical properties of the dataset, which is crucial for determining the appropriateness of subsequent parametric statistical tests.

Table – 6 normality test results

Variable	Test Results	Sig Criteria.	Conclusion
Leadership	0.101	> 0.05	Normal
Work environment	0.058	> 0.05	Normal
Motivation	0.174	> 0.05	Normal
Teacher Performance	0.064	> 0.05	Normal
Quality of Education/Quality School	0.177	> 0.05	Normal

Linearity Test Results

Significance values play a crucial role in establishing decision-making criteria in statistical analysis. A significance value below 0.05 for linearity indicates a linear relationship between the variables under examination. Similarly, when the significance value for the relationship between independent and dependent variables is less than 0.05, it suggests a linear association. These criteria help researchers determine the nature of relationships within their data. The specific outcomes of the linearity test, conducted using SPSS statistical software, are presented in Table 7 for reference and further analysis.

Table 7 Linearity Test Results

Intervariable Hub	Linearity	Decree	Conclusion
X1 against Y	0,000	Sig. < 0.05	Linear
X2 against Y	0,000	Sig. < 0.05	Linear
X3 against Y	0,000	Sig. < 0.05	Linear
X1 against Z	0,000	Sig. < 0.05	Linear
X2 against Z	0,000	Sig. < 0.05	Linear
X3 against Z	0,000	Sig. < 0.05	Linear
Y against Z	0,000	Sig. < 0.05	Linear

Multicollinearity Test Results

The Variance Inflation Factor (VIF) is a key indicator of multicollinearity among independent variables. A VIF score below 10 suggests the absence of significant multicollinearity, which is the standard threshold used in statistical analysis. In this case, all VIF values were found to be less than 10, while all tolerance values exceeded 0.10. These results indicate that the independent variables in the study do not show evidence of multicollinearity. This conclusion is supported by the multicollinearity test conducted using SPSS statistical software, with the detailed results presented in Tables 8 and Table 9. These findings suggest that the variables can be considered sufficiently independent from each other, allowing for reliable interpretation of their individual effects in the statistical model.

Table 8 Multicollinearity Test Results for Sub-Structure 1

Variable	Tolerance	VIF	Conclusion
Leadership	0.578	1,729	Multicollinearity did not occur
Work environment	0.439	2,278	Multicollinearity did not occur
Motivation	0.517	1,934	Multicollinearity did not occur

Table 9 Sub-Structure Multicollinearity Test Results 2

Tolerance	VIF	Conclusion
0.574	1,742	Multicollinearity did not occur
0.340	2,937	Multicollinearity did not occur
0.497	2,014	Multicollinearity did not occur
0.451	2,216	Multicollinearity did not occur

Path Analysis Test Results

Path analysis was carried out according to the steps (Yamin & Kurniawan, 2014). The following will describe the results of the path analysis from this research.

First Sub-Structure Path Analysis Test Results

The first step is to formulate the first path sub-structure research hypothesis both as a whole and individually, namely as follows:

Hypotheses tested overall:

- Ha : Education and school quality are significantly influenced by leadership, work environment, motivation, and teacher performance.
- Hypotheses are tested individually
- Ha : There is a significant contribution between leadership and teacher performance
- Ha : There is a significant contribution between the work environment and teacher performance
- Ha : There is a significant contribution between motivation and teacher performance

The second step is to build the structural equation of the first causal path, which is as follows:

$Y=\rho YX_1+\rho YX_2+\rho YX_3+ \rho y\varepsilon 1$ (2)

The third step is to regress exogenous variables on endogenous variables either simultaneously or partially. The simultaneous regression results for the first causal path can be seen in Table 10.

Table 10 First Path Sub-Structure Summary Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.741a	,549	,540	2.42015
a. Predictors: (Constant), X3, X2, X1				

The analysis revealed a statistically significant F-value of 64.831 ($p < 0.05$), indicating that motivation, work environment, and leadership collectively influence teachers' performance. This result supports the acceptance of the alternative hypothesis (Ha) and the rejection of the null hypothesis (H0). The coefficient of determination (R-squared) shows that these three factors account for 54.9% of the variance in teacher performance. To further examine the individual contributions of each variable, the researchers proceeded with partial testing, as presented in the subsequent Table 11.

Table 11 First Path Sub-Structure Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1139.169	3	379,723	64,831	,000a
	Residual	937.142	160	5,857		
	Total	2076.311	163			

Table 12 Partial Regression Results Between Exogenous Variables and Endogenous Variables First Path Sub-Structure

No	Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Correlation		
				nts					
		B	Std. Error	Beta			Zero orders	Partials	Part
1	(Constant)	5,337	2,304		2,316	,022			
	X1	,061	,055	,077	1,097	,274	,524	,086	,058
	X2	,388	,057	,545	6,802	,000	,723	,474	,361
	X3	,163	,063	,190	2,571	.011	,602	,199	.137

If you look at Table 12, it can be seen that:

At X1, t is found to be 1,097 ($p > 0.05$)

At X2, t is found to be 6,802 ($p < 0.05$)

At X3, t is found to be 2,571 ($p < 0.05$)

Since teacher performance (Y) is not significantly impacted by leadership (X1), H0 is approved and Ha is rejected. The coefficient of determination formula can be used to determine how much X1 contributes to Y(Gujarati, 2004:172), that is:

(Kd) = β × zero-order value × 100% (3)

The contribution of X1 to Y is calculated using the β (beta) value in standardized coefficients and the zero-order value in correlations.

X1 against Y = value beta(X1) × zero-order (X1)4)

= 0.077 × 0.524

= 0.04 or 4%

After doing some computations, it was determined that variable X1 contributed 4% to variable Y.

Moreover, H0 is rejected while Ha is acceptable because the Work Environment variable (X2) significantly affects Teacher Performance (Y). The coefficient of determination formula (Formula 3) can be used to determine the size of X2's contribution to Y. This is the computation of X2's contribution to Y.

X2 against Y = value beta(X2) × zero-order (X2) 5)

= 0.545 × 0.723

= 0.394 or 39.4%

The contribution value of variable X2 to Y is 39.4%, as determined by the calculations that have been conducted.

Moreover, H0 is rejected and Ha is admissible since the Motivation variable (X3) significantly affects Teacher Performance (Y). The coefficient of determination formula (Formula 3) can be

used to determine the amount that X2 contributed to Y. The following is the calculation of X3's contribution to Y.

X3 against Y = value beta(X3) × zero-order (X3) 6)

= 0.190 × 0.602

= 0.114 or 11.4%

The contribution value of variable X3 to Y is 11.4%, as determined by the calculations that have been conducted.

The first causal path model mathematical equation is formulated as follows:

$Y = 0.077X1 + 0.545X2 + 0.190X3 + 0.451$ 7)

The value of ρyε1 can be obtained from = 1 - Rsquare (0.549) = 0.451.

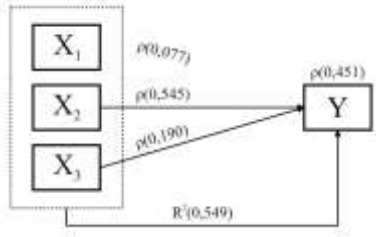

Figure 4.6 First Sub-Structure Path Analysis Chart

Second Sub-Structure Path Analysis Test Results

For analysis, this second sub-structure will be applied the same as the first sub-structure. The first step is to formulate a research hypothesis either simultaneously or partially, namely as follows:

The hypothesis is tested as a whole

- Ha : Leadership, the working atmosphere, teacher motivation, and school quality all have a big impact on how good education is.
- Hypotheses are tested individually
- Ha: Leadership makes a substantial contribution to the quality of education and schools.
- Ha : The caliber of education/school quality is significantly influenced by the work environment.
- Ha : The caliber of education/school quality is significantly influenced by motivation.
- Ha: The quality of education/school quality is significantly influenced by the performance of teachers.

The next step is to build the structural equation of the second causal path, which is as follows:

$Z=\rho ZX_1+\rho ZX_2+\rho ZX_3+\rho ZY+\rho z\varepsilon 2$ 8)

The third stage of path analysis is the regression of exogenous variables on endogenous variables. Simultaneously and partially, regression analysis was implemented. The results of the simultaneous regression analysis of the second causal subpath are illustrated in Table 13.

Table 13 Model Summary Sub Structure Second path

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.595a	,354	,338	2.92598
a. Predictors: (Constant), Y, X1, X2, X3				

The analysis findings, as demonstrated by an F of 21.788 ($p < 0.05$), suggest that the quality of education and institutions is equally influenced by teacher performance, work environment, motivation, and leadership. This is the reason why Ha is approved and H0 is rejected. Three factors can collectively account for 35.4% of the variable character of education/school quality (R square). Next, a partial regression of exogenous variables is carried out on endogenous variables. Table 14 illustrates the findings of the partial regression analysis(Corlett & Aigner, 1972).

Table 14 Second Path Anova Sub Structure

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	746.138	4	186,534	21,788	,000a
	Residual	1361.253	159	8,561		
	Total	2107.390	163			
a.	Dependent Variable: Z					
b.	Predictors: (Constant), Y, X1, X2, X3					

Table 15 Results of Partial Regression Between Exogenous Variables on Endogenous Variables, Second Path Sub-Structure

	Model	Unstandardized Coefficient		Standardized Coefficient	t		Sig.	Correlation	
				nts					
		B	Std. Error	Beta			Zero-order	Partials	Part
1	(Constant)	5,337	2,304		2,316	,022			
	X1	.024	,067	,030	,351	,726	.403	.028	,022
	X2	,248	,078	,345	3,163	,002	,570	,243	,202
	X3	,098	,078	.114	1,257	.211	,472	,099	,080
	Y	,180	,096	,178	1,881	,062	,512	,148	,120

Table 15 demonstrates that:

t is 0.351 at X1 ($p > 0.05$).

At X2, the value of t is 3.163 ($p < 0.05$).

t was determined to be 1.257 at X3 ($p > 0.05$).

At Y, the value of t is 1.881 ($p > 0.05$).

It is conceivable that the quality of education/school quality (Z) is not substantially influenced by leadership (X1), which is why Ha is rejected and H0 is accepted. The coefficient of determination formula (Formula 3) can be implemented to ascertain how much X1 contributes to Z. The following is the calculation of the contribution of X1 to Z:

X1 against Z = beta value (X1) × zero-order (X1) 9)

= 0.030 × 0.403

= 0.012 or 1.2%

The contribution value of variable X1 to Z is 1.2%, as determined by the calculations that have been conducted.

The grade of education/school quality (Z) is significantly influenced by the work environment variable (X2), resulting in the rejection of H0 and the acceptance of Ha. The coefficient of determination formula (Formula 3) can be employed to determine the extent to which X2 contributes to Z. The contribution of X2 to Z is calculated as follows:

X2 against Z = beta value (X2) × zero-order (X2) 10)

= 0.345 × 0.570

= 0.197 or 19.7 %

The contribution value of variable X2 to Z is 19.7%, as determined by the calculations that have been conducted.

The quality of education/school quality (Z) is not significantly influenced by the motivation variable (X3); therefore, H0 is accepted and Ha is rejected. The coefficient of determination formula (Formula 3) can be employed to determine the extent to which X3 contributes to Z. The contribution of X3 to Z is computed as follows:

X3 against Z = valuebeta(X3) × zero-order (X3) 11)

= 0.114 × 0.472

= 0.054 or 5.4 %

According to the calculations that have been conducted, the contribution value of variable X3 to Z is 5.4%.

Additionally, the quality of education/school quality (Z) is not significantly influenced by the teacher performance variable (Y). Consequently, H0 is accepted, and Ha is reject. Using the coefficient of determination formula (Formula 3), it is possible to determine the extent to which Y contributes to Z. The formula for calculating Y's contribution to Z is as follows:

Y against Z = valuebeta(Y) × zero-order (Y) 12)

= 0.178 × 0.512

= 0.091 or 9.1%

The contribution value of variable Y to Z is 9.1%, as determined by the calculations that have been conducted. The second causal path model's mathematical equation is expressed as follows:

$Z = 0.03X1 + 0.345X2 + 0.114X3 + 0.178Y + 0.646$ 13)

The value of ρzε2 can be obtained from = 1 - Rsquare (0.354) = 0.646

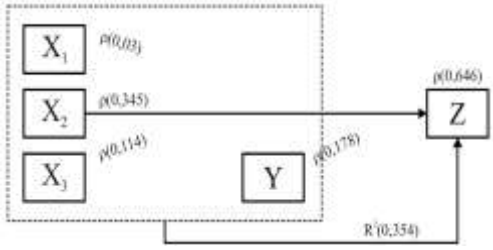

Figure 4.7 Second Sub-Structure Path Analysis Chart

6. Discussion

The Influence of Leadership on Teacher Performance

In the era of digital education, in providing teaching in the classroom, teachers must have an important factor, namely leadership(Valckx et al., 2021).In the leadership component, technology has become an important part of learning. In addition, there are components that facilitate learning needs through the use of digital technology to support educators' programs to effectively achieve their vision and strategic plans in the digital learning era.(Agustina et al., 2020), as well as implementing a student-centered learning approach through digital learning resources(Doğan, 2018).

If this is related to teacher performance in the digital era, it can be a challenge, especially for senior teachers. Years of work and a more mature age do not guarantee that teachers can quickly adapt and be competent in implementing digital literacy(PALIULIS & LABANAUSKIS, 2015). This requires rapid adaptation, as well as continuous special treatment so that teachers can adapt to the needs of an increasingly advanced era.

On the other hand, the presence of the society 5.0 era has had a big impact on education in Indonesia. This requires all levels of society, including teachers, to immediately adapt. Other abilities that teachers must have are communication skills, digital literacy, entrepreneurship, collaboration, problem-solving, and what is no less important is leadership(Zhong, 2017). This is important because of the potential impact of leadership on teacher performance.

Based on the test results, teacher efficacy is not significantly influenced by leadership. This finding is consistent with previous research which also found that there was no correlation between teacher performance and leadership. However, there are many other studies that produce different findings, such as research that shows a positive correlation between leadership and teacher performance.

In this research, teacher performance has an instrument that is substantively stated in the learning leadership instrument. So, the influence becomes invisible between instructional leadership and teacher performance. Nevertheless, the instrument was still used because the results of the analysis in the preliminary study showed decent results with measurements of reliability, validity, and normality tests(Padró & Sankey, 2018).

The Influence of the Work Environment on Teacher Performance

The productivity and performance of instructors in fulfilling their responsibilities are significantly impacted by the work environment. In the manner in which it by. Robbins (2017) the work environment is everything that is around the employee, in this case the teacher. A conducive work environment can support teachers to work safely and achieve set work targets. It is also hoped that employees are trained to utilize the work environment to be efficient and effective. As well as leading to increased performance. The work environment can be in the form of facilities or equipment that support teaching in the classroom (physical) and the atmosphere when teaching (psychological). Apart from that, The level of security and comfort, awareness of regulations, empowerment of innovation, and availability of resources are also indicators of the work environment. These factors must be given greater attention, as their neglect can have a detrimental effect on the performance of teachers.

Facts on the ground show that the work environment really supports teacher performance. This is obtained from all forms of facilities which are very adequate so that teachers can easily focus on their work. Apart from that, student factors are also very supportive. It can be seen that apart from carrying out learning activities in the classroom, students are also very active in learning outside of school and even outside study hours. During break times, students also interact with each other to improve their competence. Thus, with various forms of facilities and work environment support, teacher performance can be optimal. Of course, this is very necessary for teachers to support teacher performance in schools.

Based on the findings of this investigation, the primary objective is to enhance the quality of education and the performance of teachers in vocational schools throughout Malang Raya by enhancing teacher motivation and the work environment.

The Influence of Motivation on Teacher Performance

The motivation of each teacher in carrying out their obligations cannot be the same between one teacher and another. However, it can be observed that if the teacher has high motivation it will be reflected in the many efforts to increase the ability to carry out learning to gain pleasure, enjoy learning, and always be interested in developing learning. It can be concluded that teachers who have high motivation can increase teacher performance.

This is in line with (Ardiana, 2020) who said that work motivation has an influence on teacher performance. (Stezyoka & Etherington, 2020) and (Tappo et al, 2021) said that teacher motivation can be seen from several factors including interest/enjoyment, competence, effort, and service delivery(Mulyono et al., 2021). The data analysis discovered that motivation has a substantial impact on the performance of teachers. These findings support (Riyadi et al., 2017) the belief that there is a positive correlation between teacher efficacy and motivation. In other

words, increasing teacher motivation is an important factor that cannot be ignored if you want to improve overall teacher performance. Therefore, efforts to motivate teachers must be the main concern of the parties involved so that teachers can display their best performance(Tribus, 2010).

However, there are also references from previous research which significantly mention that there is no relationship to teacher performance with achievement motivation. In his findings, he believes that even though a person has strong motivation, he will not necessarily achieve optimal performance if he is not supported by good abilities and a supportive environment, which in this case refers to adequate facilities and conditions. This is in line with the second endogenous variable (X2) shows exogenous variables in the work environment on teacher performance (Y) which in this research does state that there is a significant influence.

The results of the researcher's observations show that there has never been research that has examined the three components of endogenous variables, namely leadership, work environment, and teacher motivation about exogenous variables of teacher performance in the learning process. The research focus of all variables is on teachers(Ayeni & Afolabi, 2012). However, there is a book entitled Leadership and Quality of Employee Performance (Lian, 2020) concluding that teacher efficacy in the classroom is influenced by motivation, work environment, and leadership. The data processing results suggest that motivation, leadership, and the work environment have a substantial impact on teacher performance. These results are of course based on previous discussions that leadership variables have the same discussion substance and are similar to all teacher performance variables. So, if connected independently, the learning leadership variable does not have a significant influence on teacher performance. However, if research is carried out together with learning leadership variables, motivation on teacher performance, and variables in the work environment. So the relationship between the three variables X1, X2 and

This is because these three variables together, namely learning leadership, work environment, and motivation, are elements that complement each other and add up to the need to improve teacher performance. This means that if there are too few elements, the effect will not be significant. Likewise, if there are too many elements in common, then the improvement goal cannot have a significant impact. It is possible that if there are too many elements that are the same, then each one can stand alone and not influence each other.

The Influence of Motivation on Teacher Performance

The motivation of each teacher in carrying out their obligations cannot be the same between one teacher and another. However, it can be observed that if the teacher has high motivation it will be reflected in the many efforts to increase the ability to carry out learning to gain pleasure, enjoy learning, and always be interested in developing learning. Therefore, it can be concluded that highly motivated instructors show increased teacher performance(Duman et al., 2020). This is following research that states that work motivation influences teacher performance. (Stezyoka and Etherington, 2020) and (Tappo et al, 2021) said that teacher motivation can be seen from several factors including interest/enjoyment, competence, effort, and service delivery. The data processing results indicate that motivation is a critical factor in the efficacy of teachers. To become high-performing educators, instructors must enhance their motivation.

However, previous research suggests there is motivation Achievement does not have a significant relationship with teacher performance. In his findings, he believes that even though a person has strong motivation, he will not necessarily achieve optimal performance if he is not supported by good abilities and a supportive environment, which in this case refers to adequate facilities and conditions. This is in line with the second endogenous variable (X2), namely the exogenous variable as the work environment on teacher performance. (Y) which in this research does state that there is a significant influence(Aluf, 2017).

The Influence of Leadership, Work Environment, and Motivation on Teacher Performance

Based on the results of previous research, there has been no study that comprehensively examines the relationship between three endogenous variables, namely leadership, work environment, and teacher motivation, as well as exogenous variables, namely teacher performance in the learning process. Previous studies focused on teachers as research subjects. However, there are other studies that conclude that factors such as leadership, work environment, and motivation influence teacher performance in teaching in the classroom

The results of the data processing that has been conducted indicate that teacher performance is significantly influenced by leadership, work environment, and motivation. These findings are, of course, predicated on prior discussions that leadership variables possess comparable discussion substance and are comparable to all teacher performance variables. Therefore, the learning leadership variable does not have a substantial impact on teacher performance when connected independently. Nevertheless, when research is conducted in conjunction with learning leadership variables, motivation variables on teacher performance, and the work environment. Therefore, the relationship between the three variables X1, X2, and has an impact on the improvement of teacher performance.

This is because these three variables together, namely learning leadership, work environment, and motivation, are elements that complement each other and add up to the need to improve teacher performance. This means that if there are too few elements, the effect will not be significant. Likewise, if there are too many elements in common, then the improvement goal cannot have a significant impact. It is possible that if there are too many elements that are the same, then each one can stand alone and not influence each other

7. Conclusion

The results of this investigation indicate that teacher leadership does not have a substantial impact on the performance of teachers in vocational schools throughout Malang Raya, Indonesia. Nevertheless, it has been demonstrated that teacher performance is significantly influenced by motivation and the work environment. The quality of education is interconnected with the work environment and motivation through the mediation of good teacher performance. While leadership does not have a direct impact, other factors, such as motivation and the work environment, are crucial in enhancing the performance of teachers. Consequently, in order to enhance the quality of education, it is imperative to address and enhance the components of a positive work environment and high motivation among educators. In addition, the results of this

research can be a reference for policymakers and school management to design more effective development programs, which support good working conditions and increase teacher motivation.

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