



SCHOOL CULTURE AS A MEDIATING VARIABLE IN THE RELATIONSHIP BETWEEN DEMOCRATIC LEADERSHIP, TEACHER WORK ETHIC, AND TEACHER PERFORMANCE AT SMKN 1 BATU

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Abstract

Improving teacher performance is a fundamental aspect of achieving high-quality education, as it contributes significantly to the effectiveness of the teaching and learning process and the successful attainment of students' competencies. This study aims to examine the effects of school principals' democratic leadership and teachers' work ethic on teacher performance by considering school culture as a mediating variable. The study employed a quantitative approach using an explanatory research design involving all 52 teachers at SMKN 1 Batu, who were selected through the total sampling technique. Data were collected using a five-point Likert scale questionnaire and analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS software. The findings reveal that school principals' democratic leadership has a positive and significant effect on both school culture and teacher performance. Similarly, teachers' work ethic has a positive and significant influence on school culture and teacher performance. Furthermore, school culture positively affects teacher performance and serves as a significant mediating variable in the relationships between democratic leadership, teachers' work ethic, and teacher performance. These findings indicate that improving teacher performance requires participative leadership, a strong work ethic, and a supportive school culture. The study provides practical implications for school administrators in designing strategies to improve educational quality through strengthening democratic leadership, enhancing teachers' work ethic, and fostering a sustainable school culture.

Keywords: Democratic Leadership, Teacher Work Ethic, School Culture, Teacher Performance



INTRODUCTION

The quality of education is largely determined by the quality of teachers as the primary facilitators of the teaching and learning process. Teachers are expected to demonstrate strong pedagogical, professional, social, and personal competencies to respond effectively to the evolving educational landscape, including the implementation of the *Merdeka Curriculum* and the ongoing digital transformation in education (OECD, 2023; UNESCO, 2024). In this context, school principals' democratic leadership, teachers' work ethic, and school culture play essential roles in creating a supportive work environment that enhances teacher performance (Northouse, 2022; Schein, 2017).

Previous studies have established significant relationships among leadership, work ethic, school culture, and teacher performance. However, empirical research examining the mediating role of school culture in the relationship between democratic leadership and teachers' work ethic on teacher performance remains limited, particularly in the context of vocational high schools (*Sekolah Menengah Kejuruan* or SMKs) in Indonesia.

Therefore, this study aims to analyze the effects of democratic leadership and teachers' work ethic on school culture and teacher performance while examining the mediating role of school culture. A quantitative approach employing an explanatory research design was adopted. The study involved all 52 teachers at SMKN 1 Batu, who were selected using the total sampling technique. The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS software.

LITERATURE REVIEW

Democratic Leadership

Democratic leadership is a leadership style that emphasizes members' participation through open communication, collaboration, and shared decision-making. According to Northouse (2022), this leadership style enhances members' sense of ownership, responsibility, and motivation, which is consistent with the Participative Leadership Theory proposed by Yukl (2020). Empirical studies conducted by Hallinger (2021) and Adams et al. (2022) demonstrate that participative leadership contributes significantly to the development of a positive school culture and improved teacher performance. Accordingly, democratic leadership is positioned as an exogenous variable in this study.



Teacher Work Ethic

Teacher work ethic refers to the values, attitudes, and behaviors that reflect responsibility, discipline, integrity, and commitment in carrying out professional duties. Robbins and Judge (2023) and Sinamo (2023) argue that a strong work ethic promotes consistent, professional, and productive work behavior that contributes to organizational effectiveness. In this study, teacher work ethic is treated as an exogenous variable that influences both school culture and teacher performance.

School Culture

School culture is defined as a system of shared values, norms, beliefs, and practices that guide the behavior of all members of the school community. A positive school culture fosters a conducive working environment, strengthens collaboration, and enhances teacher performance. Schein and Schein (2021) emphasize that organizational culture shapes members' behavior and influences organizational effectiveness. Therefore, school culture is positioned as a mediating variable linking democratic leadership and teacher work ethic to teacher performance.

Teacher Performance

Teacher performance is an important indicator of educational effectiveness, reflecting teachers' ability to carry out their professional responsibilities efficiently and effectively. It encompasses lesson planning, instructional implementation, learning assessment, and other professional responsibilities in accordance with the competencies stipulated in the Indonesian Ministry of National Education Regulation No. 16 of 2007 (Permendiknas No. 16/2007). Robbins and Judge (2023) and Supardi (2016) argue that teacher performance is influenced by both individual and organizational factors. Accordingly, teacher performance is treated as the endogenous variable in this study.

Hypothesis Development

Democratic leadership encourages teachers' participation through open communication, collaborative decision-making, and teamwork in developing a positive school culture. Schein and Schein (2021), Bush (2020), and Hallinger (2021) argue that participative leadership plays an important role in shaping organizational values, empowering employees, and fostering collaboration among school members. Based on this theoretical perspective, the following hypothesis is proposed:

H1: Democratic leadership has a positive and significant effect on school culture.

Teacher work ethic reflects responsibility, discipline, commitment, integrity, and dedication in carrying out professional responsibilities. Sinamo (2023) explains



that a strong work ethic promotes productive work behavior through positive values, while Firmansyah and Lestari (2022) demonstrate that teachers' work ethic strengthens school culture by enhancing professionalism, collaboration, and organizational commitment among school members. Therefore, the following hypothesis is formulated:

H2: Teacher work ethic has a positive and significant effect on school culture.

Democratic leadership encourages teachers' participation in decision-making, increases work motivation, and supports professional development, ultimately leading to improved teacher performance. Northouse (2022) states that participative leadership enhances intrinsic motivation by actively involving organizational members. Similarly, Bush (2020) and Hallinger (2021) report that democratic leadership contributes to teacher performance by creating a collaborative work environment and promoting professional growth. Accordingly, the following hypothesis is proposed:

H3: Democratic leadership has a positive and significant effect on teacher performance.

A strong work ethic encourages teachers to demonstrate discipline, commitment, and responsibility in fulfilling their professional duties, thereby improving their performance. Robbins and Judge (2023) explain that work ethic enhances productivity through responsible and effective work behavior. Likewise, Rahman and Dewi (2023) found that teacher work ethic positively influences teacher performance. Therefore, the following hypothesis is formulated:

H4: Teacher work ethic has a positive and significant effect on teacher performance.

A positive school culture supports collaboration, effective communication, and continuous professional development among teachers. Deal and Peterson (2016) argue that a strong organizational culture creates a conducive working environment through the internalization of shared values, norms, and organizational goals. Furthermore, Hidayat and Rukmana (2021) found that school culture positively influences teachers' commitment and performance by reinforcing professional behavior. Based on these findings, the following hypothesis is proposed:

H5: School culture has a positive and significant effect on teacher performance.

School culture also functions as a mediating variable that connects the effects of democratic leadership and teacher work ethic on teacher performance. Democratic leadership cultivates a positive school culture through communication, participation, and collaboration, whereas teacher work ethic reinforces professionalism and organizational commitment. Schein and Schein (2021) and Hallinger (2021) emphasize that school culture serves as a crucial mechanism through which leadership practices and teachers' work ethic contribute to enhanced teacher performance. Accordingly, the following hypotheses are proposed:



H6: School culture mediates the relationship between democratic leadership and teacher performance.

H7: School culture mediates the relationship between teacher work ethic and teacher performance.

RESEARCH METHOD

This study employed a quantitative approach using an explanatory research design to examine the causal relationships among democratic leadership, teacher work ethic, school culture, and teacher performance. The research was conducted at SMK Negeri 1 Batu, Indonesia, in 2026, involving all 52 teachers as respondents through the total sampling technique. Primary data were collected using a structured questionnaire based on a five-point Likert scale, while secondary data were obtained from school documents and relevant literature. The variables examined in this study consisted of democratic leadership (X_1), teacher work ethic (X_2), school culture (Z), and teacher performance (Y).

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS 4 software. The measurement model (outer model) was evaluated by assessing construct validity and reliability, whereas the structural model (inner model) was assessed using the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and hypothesis testing through the bootstrapping procedure at a 5% significance level. In the proposed research model, democratic leadership and teacher work ethic were specified as exogenous variables, school culture as the mediating variable, and teacher performance as the endogenous variable. The stages of data analysis are presented in **Table 1**.

Table 1.
Data Analysis Procedures Using SmartPLS

Stage	Analysis	Criteria
Measurement Model (Outer Model)	Convergent Validity	Outer Loading $\geq 0,70$
	Average Variance Extracted (AVE)	$\geq 0,50$
	Discriminant Validity	Cross-loadings and Fornell–Larcker Criterion meet the required thresholds
	Composite Reliability	$\geq 0,70$
	Cronbach's Alpha	$\geq 0,70$



	R^2	Measures the explanatory power of the endogenous constructs
Structural Model (Inner Model)	Effect Size (f^2)	0.02 = Small; 0.15 = Medium; 0.35 = Large
	Predictive Relevance (Q^2)	> 0
	Goodness of Fit	Evaluated using relevant model fit indices
Hypothesis Testing	Bootstrapping	t -statistic > 1,96 , p -value < 0,05

Based on **Table 1**, the data analysis was conducted through the evaluation of both the measurement model (outer model) and the structural model (inner model). The measurement model was assessed to examine the validity and reliability of the constructs, whereas the structural model was evaluated using the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and Goodness of Fit (GoF) indices. Hypothesis testing was performed using the bootstrapping procedure at a 5% significance level, with hypotheses considered significant when the t -statistic exceeded 1.96 and the p -value was less than 0.05. All statistical analyses were carried out using SmartPLS 4 to examine the direct and indirect effects among the variables, as well as the mediating role of school culture.

RESULTS AND DISCUSSION

This study aims to examine the effects of **democratic leadership** and **teacher work ethic** on **teacher performance**, with **school culture** serving as a mediating variable, using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. Prior to hypothesis testing, a conceptual framework was developed based on the theoretical foundations of democratic leadership, teacher work ethic, school culture, and teacher performance.

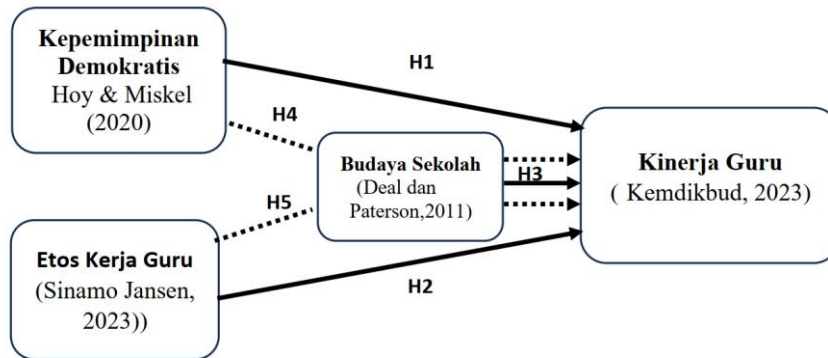


Figure 1.

Conceptual Framework

Source: Developed by the authors based on Northouse (2022), Schein and Schein (2021), and Sinamo (2023).

Figure 1 illustrates the proposed conceptual framework, in which **democratic leadership** and **teacher work ethic** are hypothesized to exert both direct effects on **teacher performance** and indirect effects through **school culture** as a mediating variable. This conceptual model provides the theoretical foundation for the development of the research hypotheses. Subsequently, the structural model was analyzed using SmartPLS to examine the relationships among the study variables, as presented in **Figure 2**.



Figure 2.

Partial Least Squares (PLS) Analysis Model

Source: SmartPLS 3.2.9 output, processed data (2026).

Figure 2 illustrates the relationships among latent variables along with the outer loading values of each indicator. Based on this model, an evaluation of the outer model



was conducted to ensure the validity and reliability of the constructs before testing the research hypotheses.

Measurement Model Evaluation (Outer Model)

The evaluation of the outer model aims to assess whether each indicator is capable of measuring latent constructs validly and reliably. Referring to Hair et al. (2022), the outer model evaluation was conducted through **convergent validity**, **discriminant validity**, and **construct reliability** as the basis for determining the adequacy of the research instrument before proceeding to structural model analysis.

Convergent validity evaluates the ability of indicators to represent the measured constructs. According to Hair et al. (2022), indicators are considered to meet convergent validity criteria when they have an **outer loading value ≥ 0.70** , indicating that the indicators are able to adequately explain their respective latent constructs. The results of the convergent validity test are presented in **Table 2**.

Table 2.
Results of Convergent Validity Evaluation (Outer Loading)

Indicator	Item	Correlation Value	Remarks
Democratic Leadership of the Principal (X1)	X1_1	0,840	Valid
	X1_2	0,865	Valid
	X1_3	0,857	Valid
	X1_4	0,910	Valid
	X1_5	0,874	Valid
	X1_6	0,912	Valid
	X1_7	0,899	Valid
	X1_8	0,900	Valid
	X1_9	0,889	Valid
	X1_10	0,897	Valid
Teacher Work Ethic (X2)	X2_1	0,877	Valid
	X2_2	0,822	Valid
	X2_3	0,845	Valid
	X2_4	0,902	Valid
	X2_5	0,810	Valid
	X2_6	0,845	Valid
	X2_7	0,912	Valid



	X2_8	0,864	Valid
	X2_9	0,831	Valid
	X2_10	0,868	Valid
	X2_11	0,814	Valid
	X2_12	0,845	Valid
	X2_13	0,910	Valid
	X2_14	0,843	Valid
	X2_15	0,828	Valid
	X2_16	0,832	Valid
Teacher Performance (Y)	Y1	0,935	Valid
	Y2	0,917	Valid
	Y3	0,898	Valid
	Y4	0,914	Valid
	Y5	0,877	Valid
	Y6	0,884	Valid
	Y7	0,910	Valid
	Y8	0,874	Valid
School Culture (Z)	Z1	0,891	Valid
	Z2	0,921	Valid
	Z3	0,916	Valid
	Z4	0,863	Valid
	Z5	0,892	Valid
	Z6	0,882	Valid
	Z7	0,809	Valid
	Z8	0,840	Valid

Source: Author's processed data, 2026.

Based on Table 2, all indicators of the **democratic leadership, teacher work ethic, school culture, and teacher performance** variables have outer loading values ranging from **0.809 to 0.935**, thereby meeting the criteria for **convergent validity** (Hair et al., 2022). The outer loading values for each construct were within the following ranges: **democratic leadership** ranged from **0.840 to 0.912**, **teacher work ethic** ranged from **0.810 to 0.912**, **school culture** ranged from **0.809 to 0.921**, and **teacher performance** ranged from **0.874 to 0.935**. All values exceeded the minimum threshold of **0.70**, indicating that all indicators were valid and suitable for further analysis.

After the convergent validity criteria were fulfilled, **discriminant validity** testing was conducted to ensure that each construct had adequate distinction from



other constructs. In this study, discriminant validity was evaluated using the **Fornell–Larcker criterion** and **cross-loading analysis**. The results of the discriminant validity test are presented in **Table 3**.

Table 3.
Results of Discriminant Validity Testing Based on the Fornell–Larcker Criterion

Variable	School Culture	Teacher Work Ethic	Democratic Leadership of the Principal	Teacher Performance
School Culture	0,877			
Teacher Work Ethic	0,812	0,854		
Democratic Leadership of the Principal	0,692	0,605	0,885	
Teacher Performance	0,856	0,824	0,727	0,901

Source: SmartPLS output, processed data (2026).

Based on **Table 3**, the discriminant validity test using the Fornell–Larcker criterion shows that the square root values of Average Variance Extracted (AVE) for each construct are greater than their correlations with other constructs. The square root of AVE values for school culture, teacher work ethic, democratic leadership, and teacher performance are 0.877, 0.854, 0.885, and 0.901, respectively. These results indicate that each construct is able to explain its own indicators better than other constructs, confirming that all variables meet the discriminant validity criteria.

Furthermore, discriminant validity testing was also conducted using cross-loading values, as presented in **Table 4**.

Table 4.
Cross-Loading Values for Discriminant Validity

Variable	School Culture (Z)	Teacher Work Ethic (X2)	Democratic Leadership of the Principal (X1)	Teacher Performance (Y)
X1_1	0,643	0,540	0,840	0,582
X1_10	0,663	0,582	0,897	0,691
X1_2	0,613	0,518	0,865	0,664
X1_3	0,596	0,487	0,857	0,584



X1_4	0,690	0,577	0,910	0,695
X1_5	0,539	0,546	0,874	0,616
X1_6	0,545	0,521	0,912	0,629
X1_7	0,571	0,553	0,899	0,667
X1_8	0,631	0,509	0,900	0,637
X1_9	0,606	0,508	0,889	0,648
X2_1	0,746	0,877	0,605	0,730
X2_10	0,722	0,868	0,556	0,749
X2_11	0,636	0,814	0,521	0,746
X2_12	0,607	0,845	0,460	0,686
X2_13	0,696	0,910	0,476	0,693
X2_14	0,699	0,843	0,515	0,670
X2_15	0,758	0,828	0,625	0,725
X2_16	0,788	0,832	0,502	0,728
X2_2	0,636	0,822	0,486	0,645
X2_3	0,631	0,845	0,483	0,650
X2_4	0,734	0,902	0,604	0,746
X2_5	0,712	0,810	0,472	0,698
X2_6	0,748	0,845	0,526	0,743
X2_7	0,727	0,912	0,502	0,740
X2_8	0,587	0,864	0,424	0,662
X2_9	0,599	0,831	0,457	0,594
Y1	0,785	0,776	0,716	0,935
Y2	0,830	0,731	0,682	0,917
Y3	0,718	0,700	0,596	0,898
Y4	0,824	0,766	0,651	0,914
Y5	0,749	0,714	0,676	0,877
Y6	0,778	0,795	0,638	0,884
Y7	0,775	0,747	0,659	0,910
Y8	0,705	0,701	0,615	0,874
Z1	0,891	0,696	0,575	0,721
Z2	0,921	0,747	0,617	0,810
Z3	0,916	0,747	0,637	0,817
Z4	0,863	0,758	0,777	0,824
Z5	0,892	0,735	0,625	0,788
Z6	0,882	0,694	0,541	0,690



Z7	0,809	0,603	0,527	0,609
Z8	0,840	0,697	0,518	0,711

Source: SmartPLS output, processed data (2026).

Based on **Table 4**, all indicators have the highest loading values on their respective constructs compared to other constructs. Indicator X1.6 has a loading value of 0.912 on democratic leadership, X2.7 has a loading value of 0.912 on teacher work ethic, Z2 has a loading value of 0.921 on school culture, and Y1 has a loading value of 0.935 on teacher performance. These results indicate that each indicator is able to represent its respective construct appropriately, thereby meeting the criteria for discriminant validity (Hair et al., 2022).

In addition to fulfilling validity requirements, a research instrument must also demonstrate good reliability. Reliability refers to the consistency level of indicators in measuring latent constructs, ensuring that the measurement results are trustworthy. In this study, construct reliability was evaluated using Composite Reliability values, with the criterion that the value should be greater than 0.70 (Hair et al., 2022).

The results of construct reliability testing are presented in **Table 5**.

Table 5.
Results of Construct Reliability Evaluation

Variabel	Composite Reliability	Keterangan
School Culture	0.934	Reliable
Teacher Work Ethic	0.913	Reliable
Democratic Leadership of the Principal	0.942	Reliable
Teacher Performance	0.942	Reliable

Source: SmartPLS output, processed data (2026).

Based on **Table 5**, all research variables have Composite Reliability values greater than 0.90, namely school culture with a value of 0.934, teacher work ethic with a value of 0.913, democratic leadership with a value of 0.942, and teacher performance with a value of 0.942. These values indicate that all constructs have excellent internal consistency. According to Hair et al. (2022), a Composite Reliability value greater than 0.70 indicates that the indicators are able to measure the constructs consistently. Therefore, all constructs have fulfilled the criteria of convergent validity, discriminant validity, and reliability, indicating that the measurement model is appropriate for further evaluation of the inner model.

After the outer model fulfilled the validity and reliability requirements, an inner model evaluation was conducted to examine the causal relationships among latent



variables. The evaluation of the inner model was carried out through the assessment of Adjusted R^2 and Goodness of Fit (GoF) to determine the accuracy and predictive capability of the research model. The results of this evaluation were used to assess the feasibility of the model in explaining the investigated phenomenon.

The coefficient of determination (Adjusted R^2) was used to measure the extent to which exogenous variables could explain the variation of endogenous variables. The higher the Adjusted R^2 value, the greater the model's ability to explain the dependent variable (Hair et al., 2022). The results of the coefficient of determination analysis are presented in **Table 6**.

Table 6.
Coefficient of Determination (Adjusted R^2)

Effect	Adjusted R- Squared
School Culture	0,711
Teacher Performance	0,797
Average Adjusted R-Square (AARS)	0.754

Source: SmartPLS output, processed data (2026).

Based on **Table 6**, the Adjusted R^2 value for the school culture variable is 0.711, indicating that democratic leadership and teacher work ethic are able to explain 71.1% of the variation in school culture. Meanwhile, the Adjusted R^2 value for teacher performance is 0.797, indicating that democratic leadership, teacher work ethic, and school culture are able to explain 79.7% of the variation in teacher performance. According to Hair et al. (2022), an R^2 value ≥ 0.75 indicates a strong (substantial) explanatory capability of the model. Therefore, the research model is considered appropriate for examining the relationships among the variables.

The Goodness of Fit (GoF) evaluation indicates that the research model has a good level of model fit. The Average Path Coefficient (APC) value of 0.715, Average Adjusted R-Squared (AARS) of 0.708, Average Variance Inflation Factor (AVIF) of 1.741, and Average Full Collinearity VIF (AFVIF) of 3.286 meet the model adequacy criteria (Kock, 2013). The Tenenhaus Goodness of Fit (TGoF) value of 0.792 is categorized as large, while the SPR and SSR values of 1.000 indicate that there are no issues related to Simpson's paradox or statistical suppression. Therefore, the model is considered suitable for testing both direct and indirect relationships among variables.

Hypothesis testing was conducted using the bootstrapping method in SmartPLS to analyze both direct and indirect effects among variables. A hypothesis is accepted when the t-statistic value is greater than 1.96 and the p-value is less than 0.05 at a 5% significance level.



The Mediating Role of School Culture in the Relationship between Democratic Leadership and Teacher Performance

The analysis results show that the indirect effect of democratic leadership on teacher performance through school culture has a path coefficient of 0.268 with a p-value of 0.003, indicating that H6 is accepted. This finding demonstrates that school culture plays a significant mediating role in the relationship between democratic leadership and teacher performance. Participative leadership is able to develop a collaborative and communicative school culture that supports the improvement of teacher performance.

The Mediating Role of School Culture in the Relationship between Teacher Work Ethic and Teacher Performance

The indirect effect of teacher work ethic on teacher performance through school culture has a path coefficient of 0.314 with a p-value < 0.001, indicating that H7 is accepted. These results demonstrate that school culture acts as a mediator that strengthens the influence of teacher work ethic on teacher performance through the reinforcement of discipline, responsibility, commitment, and professionalism. Thus, school culture becomes an important mechanism in enhancing the effects of democratic leadership and teacher work ethic on teacher performance.

The findings of this study indicate that democratic leadership, teacher work ethic, and school culture have significant effects on teacher performance at SMKN 1 Batu. These findings support the theories of democratic leadership, organizational culture, and work ethic, which state that participative leadership, positive organizational culture, and strong work ethic can improve teacher performance. Practically, school principals need to strengthen participative leadership practices, collaborative school culture, and continuous teacher professional development.

This study has several limitations. First, the research was conducted in only one school with 52 respondents; therefore, the findings cannot be widely generalized. Second, the use of questionnaires means that the research results depend on respondents' perceptions. Third, the research model explains 79.7% of the variation in teacher performance, indicating that the remaining 20.3% is influenced by other factors outside the proposed model.

Future research is recommended to involve respondents from various schools or regions to improve the generalizability of findings. A mixed-methods or qualitative approach may also be applied to gain deeper insights into the relationships among variables. Furthermore, future studies may expand the research model by incorporating additional variables such as job satisfaction, intrinsic motivation, or



professional competence to enrich the understanding of factors influencing teacher performance.

Synthesis of Main Findings

The findings show that democratic leadership, teacher work ethic, and school culture significantly contribute to teacher performance at SMKN 1 Batu. Democratic leadership and teacher work ethic foster a positive school culture, which in turn strengthens their influence on teacher performance. These results highlight that improving teacher performance depends on the synergy of participative leadership, strong work ethic, and a supportive school culture. Therefore, strengthening democratic leadership, enhancing teacher professionalism, and fostering a collaborative school culture are essential for improving educational quality.

CONCLUSION

This study confirms that democratic leadership, teachers' work ethic, and school culture positively and significantly influence teacher performance at SMKN 1 Batu, with school culture acting as a mediating variable. These findings highlight the importance of participative leadership, a strong work ethic, and a supportive school culture in improving teacher performance. Practically, schools should strengthen democratic leadership, enhance teachers' professional development, and foster a collaborative school culture. Future research is encouraged to involve broader samples and additional variables to provide a more comprehensive understanding of teacher performance.

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