



The Influence of Principal's Authentic Leadership, Responsible Management Education and Teacher Performance Motivation on Continuing Education in Public Junior High Schools in Jambi City

Zul Bahri^{1*}, Mohamad Muspawi², Muhammad Sofwan³

^{1,2,3}Master of Education Management Study Program, Faculty of Teacher Training and Education, Jambi University

*Corresponding Author. E-mail: zulbahri1402@gmail.com

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Abstrak

Kepemimpinan memiliki peran strategis dalam mewujudkan pendidikan yang berkualitas. Penelitian ini bertujuan untuk menganalisis pengaruh kepemimpinan otentik kepala sekolah, pendidikan manajemen yang bertanggung jawab, dan motivasi kinerja guru terhadap pendidikan berkelanjutan di SMP Negeri se-Kota Jambi. Penelitian ini menggunakan pendekatan kuantitatif dengan teknik survei terhadap kepala sekolah dan guru. Data diperoleh dari 221 responden dan dianalisis menggunakan korelasi Pearson serta regresi berganda. Hasil analisis menunjukkan bahwa ketiga variabel memiliki hubungan yang signifikan dengan pendidikan berkelanjutan ($p < 0,001$), dengan pendidikan manajemen yang bertanggung jawab menunjukkan korelasi tertinggi ($r = 0,792$). Namun, dalam model regresi, hanya pendidikan manajemen yang bertanggung jawab yang berpengaruh signifikan secara langsung terhadap pendidikan berkelanjutan ($\beta = 0,762$; $p < 0,001$). Model ini menjelaskan 62,9% variasi pendidikan berkelanjutan ($R^2 = 0,629$). Temuan ini menegaskan pentingnya praktik pendidikan manajemen yang bertanggung jawab dalam mendukung pelaksanaan pendidikan berkelanjutan di sekolah. Penelitian ini memberikan kontribusi terhadap pengembangan kajian kepemimpinan pendidikan di Indonesia dan merekomendasikan penguatan program pelatihan kepemimpinan berbasis keberlanjutan di jenjang pendidikan menengah.

Kata Kunci: Kepemimpinan, Manajemen, Bertanggung Jawab, Motivasi, Kinerja Guru

Abstract

Leadership plays a strategic role in realizing quality education. This study aims to analyze the influence of authentic leadership of principals, responsible management education, and teacher performance motivation on continuing education in junior high schools in Jambi City. This study uses a quantitative approach with a survey technique on principals and teachers. Data were obtained from 221 respondents and analyzed using Pearson correlation and multiple regression. The results of the analysis show that all three variables have a significant relationship with continuing education ($p < 0.001$), with responsible management education showing the highest correlation ($r = 0.792$). However, in the regression model, only responsible management education has a significant direct effect on continuing education ($\beta = 0.762$; $p < 0.001$). This model explains 62.9% of the variation in continuing education ($R^2 = 0.629$). These findings emphasize the importance of responsible management education practices in supporting the implementation of continuing education in schools. This study contributes to the development of educational leadership studies in Indonesia and recommends strengthening sustainability-based leadership training programs at the secondary education level.

Keywords: Leadership, Management, Responsible, Motivation, Teacher Performance

Introduction

Sustainable education has become a strategic issue in the world of global education along with the increasing challenges faced by humanity, such as climate change, social inequality, environmental degradation, and value crises. In response to these challenges, educational institutions are required to not only educate the nation's life, but also to form students who care about environmental, social, and economic sustainability (Glavič, 2020; Malik, 2018; Sabino, 2024).

Junior high schools (SMP) as a basic education level have a strategic position in instilling sustainability values from an early age. The educational process in SMP must be directed to form the character of students who are not only academically intelligent, but also have critical awareness, social responsibility, and concern for environmental sustainability (Lesinger et al., 2018). In realizing sustainable education, the success of a school is largely determined by the quality of the principal's leadership, the educational management system implemented, and the performance of teachers as direct implementers of learning activities.

The authentic leadership of the principal plays an important role in forming a school culture that supports sustainability values. An authentic principal displays honesty, integrity, and exemplary behavior in his/her leadership, so that he/she is able to inspire all members of the school to be actively involved in programs that support sustainability (Alazmi & Al-Mahdy, 2022; Lesinger et al., 2018). This kind of leadership is needed to create a school climate that is conducive to educational transformation towards a more humanistic and ecological direction.

On the other hand, responsible management education is also an important foundation in supporting sustainable education practices. Accountable, transparent, and ethical school management will encourage the planning and implementation of school programs that are responsive to sustainability issues (Sanchez et al., 2025; Smith & Benavot, 2019). Responsible management education includes continuous evaluation, value-based decision-making, and the involvement of all school stakeholders in the change process.

Teacher performance motivation is a crucial factor in implementing sustainability values in learning activities (Alzoraiki et al., 2023; Amtu et al., 2020; Jusoh et al., 2024).

Teachers who have high work motivation will be more creative, adaptive, and take the initiative in incorporating sustainability values into teaching materials and student activities. They also become agents of change at the classroom and school community levels, which directly influence students' mindsets and behaviors towards sustainability issues.

Jambi City as one of the developing areas has its own challenges in implementing environmentally friendly and sustainable education. Therefore, it is important to examine the extent to which the three factors, authentic leadership of the principal, responsible management education, and teacher performance motivation contribute to efforts to realize sustainable education in junior high schools throughout Jambi City. This study aims to test and analyze the influence of the three variables on the success of sustainable education at the junior high school level, so that it can provide policy and practice recommendations that support school transformation towards a more sustainable direction.

Method

This research is an explanatory research with a quantitative approach that aims to test the causal relationship between independent variables (authentic leadership of the principal, responsible management education, and teacher performance motivation) and dependent variables (continuing education) (Bentouhami et al., 2021; Rahmawati et al., 2022). The method used is a survey, with data analysis using inferential statistical techniques through JASP software. The validity of the research instrument was tested with item-total correlation and its reliability with Cronbach's Alpha, while the influence between variables was analyzed using multiple linear regression. This study also considers classical assumption tests such as normality, multicollinearity, and heteroscedasticity to ensure the validity of the results.

The research was conducted in junior high schools throughout Jambi City, selected based on school diversity, topic relevance, and ease of data access. The research process lasted for 12 months, divided into four stages: (1) Preparation stage (months 1-6) including preparation of proposals and seminars; (2) Data collection (months 6-8) through field surveys; (3) Data analysis (months 8-10) with statistical

processing; and (4) Preparation of reports and publications (month 12).

The sampling technique used was Stratified Random Sampling to ensure proportional representation of two population strata: teachers (700 people) and education personnel (200 people). The sample was calculated using the Slovin formula (margin of error 5%), resulting in 254 teachers and 133 education personnel. The selection of respondents in each stratum was carried out randomly (random sampling), with inclusion criteria such as at least one year of work experience and willingness to participate. This method was chosen so that the sample reflects the characteristics of the population and increases the accuracy of the generalization of research results (Mweshi & Sakyi, 2020).

This research was conducted through three main stages: preparation, data analysis, and reporting. In the preparation stage, the researcher developed a questionnaire instrument that included the research variables (authentic leadership, responsible education management, teacher performance motivation, and continuing education) (Aguinis et al., 2021). The questionnaire was validated by experts to ensure the relevance and accuracy of the content before being tested on a small scale. Furthermore, the questionnaire was distributed digitally using Google Forms to facilitate data collection from respondents (teachers and education personnel of junior high schools throughout Jambi City).

In the data analysis stage, the researcher cleaned and transformed the data from Google Forms into a format compatible with JASP (Jeffrey's Amazing Statistics Program). The analysis began with validity tests (Pearson correlation) and reliability (Cronbach's Alpha) to ensure the quality of the instrument (Izah et al., 2023). Furthermore, inferential statistical analysis was carried out, including multiple linear regression, to test the effect of independent variables on the dependent variables. This process also involves checking classical assumptions such as normality, multicollinearity, and heteroscedasticity.

The reporting stage includes compiling the results of the analysis in the form of a research report that includes methodology, findings, discussions, implications, and recommendations for further research. The output of JASP (tables, graphs, and statistical coefficients) is

systematically documented to support the validity of the findings.

The main data collection technique in this study was an online survey using Google Forms, which allows efficient distribution of questionnaires to respondents in junior high schools throughout Jambi City. The questionnaire was designed with a Likert scale to measure respondents' perceptions of the research variables. In addition, secondary data was obtained from school documents, annual reports, and supporting literature to strengthen the analysis.

Data analysis was carried out using a quantitative approach using JASP. The steps include:

1. Validity & Reliability Test - Using Pearson correlation (validity) and Cronbach's Alpha (reliability).
2. Descriptive Statistics - Explaining the characteristics of respondents and data distribution.
3. Inferential Analysis – Includes multiple linear regression to test causal relationships between variables, with interpretation based on beta coefficient (β), p-value, and R-squared.
4. Classical Assumption Test – Ensures data meets the requirements for normality, is free from multicollinearity, and homoscedasticity.

The results of the analysis are then interpreted contextually, linked to theory, and discussed to answer the problem formulation. This procedure ensures that the research is systematic, accurate, and produces valid and reliable findings.

Result and Discussion

This study involved 221 respondents from junior high schools throughout Jambi City, with a composition of 77.8% female (172 people) and 22.2% male (49 people). The majority of respondents were aged 29–34 years (64 people), followed by groups of 23–28 years and 51–56 years (45 people each). In terms of position, teachers dominated (202 people), while education personnel (18 people) and principals (1 person) had lower representation.

The work experience of respondents was mostly in the beginner category (0–5 years: 103 people), with only 4 people having 36–45 years of experience. The distribution of agencies showed that SMP Negeri 011 Jambi contributed

the most respondents (52 people), followed by SMP Negeri 008 Jambi (47 people). These data reflect the profile of educators at the research location and are considered in the analysis of research variables.

Table 1. Instrument Validity and Reliability

Variable	No. of Items	Valid Items	Pearson's r Range	p-value	Cronbach's α	Reliability Status
Sustainable Education (PB)	11	11	0.550 - 0.718	<0.001	0.746	High
Authentic School Leadership (KKS)	12	12	0.331 - 0.505	<0.001	0.756	Good
Responsible Management Education (PMBJ)	12	12	0.519 - 0.698	<0.001	0.752	Adequate
Teacher Performance Motivation (KMG)	15	13	0.401 - 0.694	<0.001	0.746	Good*

Correlation Analysis

The Pearson correlation analysis revealed significant relationships among all key variables: Authentic School Leadership (KKS) showed:

- Moderate correlation with Responsible Management Education (PMBJ) ($r^* = 0.517$, $p^* < 0.001$)

- Moderate correlation with Sustainable Education (PB) ($r^* = 0.429$, $p^* < 0.001$)
- Weak correlation with Teacher Performance Motivation (KMG) ($r^* = 0.310$, $p^* < 0.001$).

Responsible Management Education (PMBJ) had:

- A very strong correlation with Sustainable Education (PB) ($r^* = 0.792$, $p^* < 0.001$), indicating a close relationship.
- A moderate correlation with Teacher Performance Motivation (KMG) ($r^* = 0.405$, $p^* < 0.001$).
- Sustainable Education (PB) was weakly correlated with Teacher Performance Motivation (KMG) ($r^* = 0.363$, $p^* < 0.001$).

These results suggest that PMBJ is the most strongly associated with PB, while leadership and motivation show comparatively weaker but still significant links.

Multiple Regression Analysis

The regression model (M_1) examined the combined effect of KKS, PMBJ, and KMG on Sustainable Education (PB):

Model Fit:

- $R^2 = 0.629$ (Adjusted $R^2 = 0.624$), indicating that 62.9% of the variance in PB is explained by the three predictors.
- The model was statistically significant ($F(3, 217) = 122.700$, $p^* < 0.001$).

Predictor Significance:

- PMBJ had a strong positive effect on PB ($\beta = 0.762$, $p^* < 0.001$).
- KKS ($\beta = 0.021$, $p^* = 0.671$) and KMG ($\beta = 0.048$, $p^* = 0.295$) were not significant, suggesting their influence is negligible in this model.

Assumption Checks:

- Multicollinearity: Not detected (all VIF < 1.5).
- Homoscedasticity: Residual plots showed random scatter, confirming constant variance.
- Normality: Shapiro-Wilk tests ($p^* < 0.001$) indicated non-normal residuals,

but the large sample size ($N = 221$) mitigates this issue.

- Outliers: Two cases had high standardized residuals (>3) but minimal influence (Cook's Distance < 0.03).

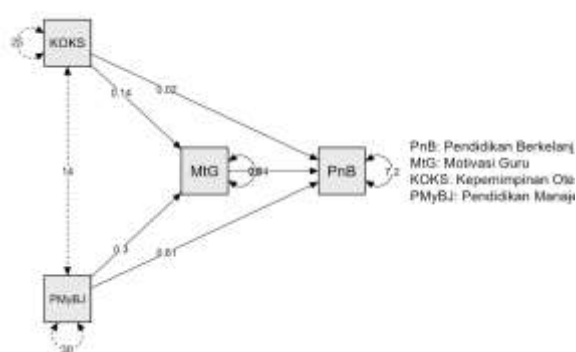
Key Conclusions

1. Responsible Management Education (PMBJ) is the primary driver of Sustainable Education, with a substantial effect size.
2. Leadership and motivation, while correlated with PB, do not significantly predict it when PMBJ is included.
3. The model is robust, with no critical violations of regression assumptions.

Recommendation: Future studies could explore mediators (e.g., school culture) to clarify the non-significant roles of leadership and motivation.

Path Analysis

Path analysis is used to start the direct, indirect, and total relationship between Principal's Authentic Leadership, Responsible Management Education, and Continuing Education, with Teacher Performance Motivation as a mediator in this model. The model tested uses the Maximum Likelihood (ML) estimator.



Gambar 1. Path plot

This study examined the direct, indirect, and total effects of Authentic School Leadership (KKS) and Responsible Management Education (PMBJ) on Sustainable Education (PB), with Teacher Performance Motivation (KMG) as a mediator. Key findings are summarized below:

Direct Effects

- PMBJ had a strong, significant direct effect on PB ($\beta = 0.614$, $*p* < 0.001$),

indicating that responsible management practices substantially enhance sustainable education.

- KKS showed no significant direct effect on PB ($\beta = 0.018$, $*p* = 0.667$), suggesting that leadership alone does not directly influence sustainability outcomes.

Indirect Effects (Mediation via KMG)

- Neither KKS ($\beta = 0.006$, $*p* = 0.353$) nor PMBJ ($\beta = 0.013$, $*p* = 0.301$) had significant indirect effects on PB through KMG, implying that teacher motivation does not mediate these relationships.

Total Effects

- PMBJ's total effect remained significant ($\beta = 0.627$, $*p* < 0.001$), reinforcing its dominant role in driving PB.
- KKS's total effect was insignificant ($\beta = 0.024$, $*p* = 0.569$), confirming its limited impact.

Path Coefficients

- KMG itself had no significant effect on PB ($\beta = 0.043$, $*p* = 0.289$).
- PMBJ significantly predicted KMG ($\beta = 0.303$, $*p* < 0.001$), while KKS had a marginally positive effect ($\beta = 0.135$, $*p* = 0.054$).

Model Strength (R^2)

- The model explained 62.9% of PB's variance, highlighting PMBJ as the primary contributor.
- KKS and PMBJ together explained 17.8% of KMG's variance, suggesting other unmeasured factors influence teacher motivation.

Responsible Management Education (PMBJ) is the key driver of sustainable education, whereas Authentic Leadership (KKS) plays a minimal role. Teacher motivation, while influenced by PMBJ, does not mediate the relationship with sustainability outcomes. Future research should explore additional mediators (e.g., institutional policies, school culture) to better understand how leadership can indirectly support sustainability.

Discussion of Research Results

The findings of this study reveal interesting dynamics in the relationship between authentic leadership, educational management, teacher motivation, and continuing education. The results of the analysis show that Responsible Management Education (PMBJ) has a very

significant direct effect on Continuing Education ($\beta = 0.762$, $p < 0.001$). This finding is in line with the research of Ramboarisata and Gendron (2019) which found that a social responsibility-based management approach can improve the quality of education in a sustainable manner. However, in contrast to the research of Febrineng (2024) which emphasized the role of leadership as the main factor, our research found that Authentic Principal Leadership (KKS) did not have a significant direct effect ($\beta = 0.021$, $p = 0.671$).

Research by Akkakanjanasupar & Panchit Longpradit, (2022) revealed that authentic leadership influences educational desires through mediator variables such as teacher training. This may explain why in our study, KKS did not show a significant direct effect - perhaps due to the absence of a mediator variable being tested. Our findings also differ from the results of Al Farooque et al., (2019) study which found a strong influence of teacher motivation on the quality of learning. In this study, Teacher Performance Motivation (KMG) did not show a significant effect ($\beta = 0.048$, $p = 0.295$), which may be due to differences in the research context or measurement variables.

Our research model was able to explain 62.9% of the variance in Continuing Education ($R^2 = 0.629$), a figure higher than a similar study by Kelkay et al., (2025) which only reached 51.1%. This difference may be due to our emphasis on more systematic management aspects. These results strengthen the findings of Sumaryanti & Purwanto, (2023) on the importance of data-based management systems in improving the quality of education, while also showing that in the context of secondary schools in Indonesia, a managerial approach may be more effective than simply relying on leadership or individual motivation.

Research Novelty

This study provides several new contributions to the field of sustainable education research:

1. Affirmation of the Central Role of Educational Management: Unlike previous studies that emphasize leadership as the main factor, our findings empirically show that the responsible management approach is more decisive in the context of public secondary schools.
2. Quantitative Integrative Model: This study successfully quantitatively tests a

model that integrates aspects of leadership, management, and motivation - an approach that is still rare in the literature on sustainable education in Indonesia.

3. Contextualization of Local Wisdom: This study provides empirical evidence from the Jambi region that enriches the understanding of the implementation of sustainable education in developing areas with unique socio-cultural characteristics.
4. Practical Implications: The research findings offer new perspectives for education policy makers to focus more on strengthening the school management system rather than simply leadership training or teacher motivation.

Conclusion

Based on the data analysis conducted, this study produced several important findings. First, authentic leadership of the principal showed a significant positive relationship with sustainable education ($r = 0.429$; $p < 0.001$), although in the regression analysis its direct effect was not significant ($\beta = 0.021$; $p = 0.671$). This finding indicates that although authentic leadership is correlated with sustainable education, its effect is indirect and may require a mediator variable to provide a more significant impact.

Second, responsible management education was proven to be the most dominant factor in encouraging sustainable education, with a very strong correlation ($r = 0.792$; $p < 0.001$) and a significant direct effect ($\beta = 0.762$; $p < 0.001$). These results confirm that school management practices based on responsibility and accountability are key components in realizing sustainable education.

Third, teacher performance motivation shows a weak but significant positive relationship with continuing education ($r = 0.363$; $p < 0.001$), but does not provide a significant direct effect in the regression model ($\beta = 0.048$; $p = 0.295$). This indicates that although teacher motivation is important, its role in supporting continuing education is not strong enough without being supported by other factors. Overall, the regression model built has good predictive power with an R^2 value of 0.629, which means that 62.9% of the variation in continuing education can be explained by the three independent variables studied. This finding underlines the importance of a systemic approach in realizing

continuing education, where the aspect of responsible school management is the main determining factor, while teacher leadership and motivation play a supporting role. The implications of this study suggest the need to strengthen the school management system based on responsibility as the main strategy in

improving continuing education, without ignoring the importance of developing school leadership and teacher motivation as part of a holistic approach

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