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The Role of Knowledge, Creativity, and Self-Confidence in the Performance of High School Principals using SEM-SmartPLS Analysis

Melky Malingkas[1*], Kosmas Sobon[2], Jelvi M. Mangundap[2], Zhuldiz Anay[3]

[1]Department of Theology, Pineleng Seminary College of Philosophy, Minahasa, Indonesia
[2]Department of Elementary Education, Faculty of Education, De La Salle Catholic University Manado, Indonesia
[3]Department of Education and Humanities, Suleyman Demirel Univesity, Kazakhstan

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Corresponding Author
Email address:
melkymalingkas1974@gmail.com

ABSTRACT

Effective leadership hinges on knowledge, creativity, and self-confidence in dynamic school environments. This study examines the contribution of these traits to high school principals' performance in leadership. Employing a quantitative approach, a survey was conducted with 75 respondents selected from a population of 308 using random sampling. Data were analyzed using Structural Equation Modeling (SEM) with SmartPLS software version 3.0, allowing in-depth exploration of the relationships between knowledge, creativity, self-confidence, and performance. The findings reveal that knowledge contributes 45%, creativity 30%, and self-confidence 25% to leadership effectiveness, collectively accounting for 87.5% of the variance in performance among school principals. Principals with strong knowledge, creativity, and self-confidence are better equipped to implement innovative strategies, motivate staff, and achieve educational goals. This study underscores the importance of professional development programs to enhance these attributes, emphasizing creativity and decision-making skills. Such initiatives can better prepare principals to navigate the complexities of modern educational leadership, including curriculum changes, resource constraints, and technological advancements. The research offers actionable insights for policymakers, educators, and administrators aiming to improve school leadership quality. It also highlights the mediating role of self-confidence in translating knowledge and creativity into practical leadership actions. These findings contribute to the broader discourse on leadership in education and provide a foundation for future studies to explore additional factors influencing principals' performance.

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1. INTRODUCTION

School leaders play a pivotal role in the success of educational institutions. Effective leadership is essential in the context of the ever-evolving demands of education. The performance quality of a principal significantly influences the success of the school, its teachers, and its students (Lee & Mao, 2023; Sepniwati & Rahyasih, 2020). Principals require administrative competencies, substantial knowledge, creativity, and confidence to lead effectively. Syarifudin (2002) highlighted that effective headteachers must have a solid foundation of knowledge and experience. However, Lee and Mao (2023) found that the selection process for headteachers often fails to align with critical requirements such as management skills, knowledge, and experience. Instead, appointments are frequently influenced by emotional ties or familial relationships with decision-makers, which undermines the effectiveness of principals. This observation aligns with Sepniwati and Rahyasih's (2020) findings, which point to a lack of transparency in principal appointment processes as a major cause of declining leadership quality. As a result, many principals lack the necessary knowledge, motivation, discipline, and mental readiness, adversely affecting the overall quality of education, including inputs, processes, and outcomes. Furthermore, the decline in principal performance is exacerbated by inadequate systems for leadership development, recruitment, selection, and performance management, coupled with the absence of policies on leadership succession (Wills, 2016). A principal's insufficient knowledge directly impacts the performance and quality of the school. Wills (2016) also noted that the decline in principal performance in South Africa is often linked to the increasing number of principals nearing retirement age, leading to reduced knowledge levels and diminished capacity to

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maintain effective school management. This situation significantly disrupts the learning environment and impairs the overall quality of education.

One of the defining traits of an experienced and knowledgeable school leader is creativity. Principal creativity is essential for driving innovation and improving both the quality of learning and the overall management of schools. It is pivotal in fostering school innovation and creating an environment that embraces renewal and positive change. Through creativity, principals can identify opportunities within challenges, devise innovative strategies, and inspire teachers to adopt new approaches to teaching and learning. Creative principals cultivate a school culture that is inclusive, adaptable, and responsive to the needs of students and the evolving demands of curricula and technology. Teachers led by such principals are often more motivated and open to experimenting with diverse teaching methodologies, including project-based learning, the integration of technology, and collaborative student-to-student activities. However, research highlights gaps in principal creativity in certain contexts. For example, Zakirova (2019) found that public school principals in Uzbekistan exhibit low levels of communication creativity. Similarly, Zhang et al. (2018) reported that studies in Guangxi reveal a lack of creativity and leadership among principals, particularly in rural schools. This deficiency is often associated with limited innovation awareness, reluctance to collaborate, and fear of making mistakes (Feng, 2020; Fred & Singh, 2021; Aas et al., 2019).

Factors limiting principal creativity include inadequate budgets, minimal community involvement, and many principals' heavy administrative burdens (Glewwe et al., 2011). Observational studies reveal that principals devote most of their time to administrative and organizational management tasks, leaving little room for instructional leadership or innovative initiatives (Horng et al., 2009; Anselmus Dami et al., 2022). The demands placed on modern principals have grown significantly, requiring them to work longer hours and manage larger teams of staff (Ferrandino, 2001; Tener et al., 2022). Additionally, research highlights that principals often experience high stress levels due to excessive workloads and intense emotional demands (Leventis et al., 2017; Tintoré et al., 2022). These challenges contribute to burnout and diminished motivation, further hindering their capacity to engage in creative leadership (Drago-Severson et al., 2018). Such constraints underscore the need for systemic changes that reduce administrative burdens and foster a supportive environment where principals can focus on innovative and instructional leadership.

Another crucial variable influencing principal performance is self-confidence. Locke (1991) emphasizes that self-confidence is vital for effective leadership. Confident leaders are characterized by strong convictions in decision-making and the courage to navigate complex situations. Self-confidence enables school leaders to act decisively to implement the school's vision and mission, support teachers and students, and address challenges such as curriculum changes and resource limitations. Moreover, confident leaders inspire and energize their teams, fostering a positive and collaborative work environment. However, the absence of confidence can lead to hesitation and risk aversion, limiting growth and innovation within the school. Conversely, excessive confidence or unchecked arrogance, often fueled by the position and power associated with leadership roles, can result in leadership failure and ineffectiveness (Collin, 2009; Irwin, 2009). Overconfident principals may exhibit authoritarian behavior, blame teachers for shortcomings, and undermine teacher performance (Wijania, 2017). Similarly, Babu et al. (2008), in their research on the Learning Behavior Model (LBM), found that a combination of low self-confidence and high knowledge of principals often results in doubt and inaction, preventing meaningful leadership. This highlights the delicate balance required in nurturing self-confidence for effective and impactful school leadership.

Gümüş et al. (2024) discovered that principals who lack confidence and experience in school management often adhere strictly to a fixed set of rules—consequently, Oreg & Berson. (2011) noted that principals typically allocate more time to administrative duties. Additionally, principals with low confidence, particularly young female principals, often struggle with feelings of guilt, undervaluation, and lack of appreciation from staff and supervisors. These challenges frequently lead to poor work-life balance and inadequate self-care (Greco et al., 2017; Mahfouz, 2020).

School leaders' performance is significantly impacted by the heavy administrative burdens they often face, which reduce their ability to focus on strategic and developmental priorities. When principals spend more time on administrative tasks instead of leading, inspiring, and supporting teachers and students, overall school performance can decline as innovation and continuous improvement are hindered (Fullan, 2001). Additionally, a decline in teacher motivation to pursue principal roles has further exacerbated leadership challenges. Normore (2004) found that fewer teachers aspire to become principals due to decreasing incentives such as salary

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increases, prestige, or respect among colleagues, posing a challenge to sustaining a motivated and effective leadership pipeline for educational institutions.

This study aims to examine the impact of comprehensive knowledge, creativity, and self-confidence on the performance of school principals. The research seeks to identify effective strategies to enhance principals' performance, ultimately contributing to school improvement and better student academic outcomes. Additionally, the findings are expected to inform the design of training programs that foster creativity and strengthen decision-making skills among school leaders, equipping them to navigate the complexities of modern educational challenges.

2. MATERIAL AND METHOD

Research Design and Participants

This study employed a quantitative survey design to test and statistically analyze the influence of leadership traits (knowledge, creativity, and confidence) on principal performance. This approach's main objective is objectively measuring the relationship between the variables under study. The variables tested are the principal's leadership traits, namely knowledge, creativity, and trust, as independent variables and the principal's performance as the dependent variable. In other words, the research aims to determine how considerable and significant the influence of these leadership traits is on the performance of principals.

The population was teachers and principals of Catholic high schools in North Sulawesi Province, Indonesia. The total population was 308 people, consisting of teachers and principals. All populations were drawn from 11 Catholic high schools across four districts and seven North Sulawesi, Indonesia municipalities. The sample size was 75 respondents, 64 teachers, and 11 principals. The sample size was determined using the Slovin formula (1960) with a margin of error of 10%. The sample of headteachers has been in post for at least 2 years and is 35-60 years old, while the sample of teachers has a qualification and more than 10 years' experience. The main purpose of using this formula is to reduce sampling bias, research efficiency, and ensure a controlled error level.

Data Collection

Table 1. Variable and Research Indicators

Research Variabel		Research Indicators	Kode
Variabel exogenous	Knowledge (X1)	1. Education Quality	EK1
		2. Dialogue engagement	EK2
		3. Analytical skills	EK3
		4. Working experiences	EK4
		5. Critical thingking	EK5
	Creativity (X2)	1. Use of new technology	C1
		2. Flexibility	C2
		3. Idea of Innovation	C3
		4. Empowerment varies	C4
	Self-confidence (X3)	1. Self-appearance	SC1
		2. A sense of optimism	SC2
		3. Self-acceptance	SC3
Variabel endogenous	Performance (Y)	1. Good work plan	P1
		2. Leadership	P2
		3. Management	P3
		4. Professional development	P4
		5. Collaboration	P5
		6. Work achievement	P6

Data for the study were collected through questionnaires structured to align with each research variable. The survey instrument was developed and distributed between October and December 2023, consisting of closed-ended questions measured using a Likert scale. This scale assessed multiple indicators associated with the three main constructs: knowledge, creativity, and confidence.

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The knowledge variable included five indicators and questions to measure how school leaders deeply understand educational policies, management strategies, and recent educational developments. The creativity variable comprised four indicators to evaluate principals' abilities to devise innovative solutions, think outside the box, and address challenges with fresh ideas. The confidence variable included three indicators focusing on principals' decision-making abilities, leadership of teams, and achievement of school goals. Additionally, the performance variable encompassed six indicators and corresponding questions to assess principal performance.

All questionnaire items were pretested on 30 respondents to ensure validity. This validation process was critical for determining the instrument's accuracy in measuring the intended content. The questionnaire employed a Likert scale ranging from 1 (never) to 5 (often). Reliability analysis revealed Cronbach's alpha values of 0.89 for creativity, 0.87 for knowledge, and 0.89 for self-confidence, indicating strong internal consistency. Construct validity was assessed using exploratory factor analysis (EFA), demonstrating that all items had factor loadings above 0.50, confirming the constructs' validity. These rigorous reliability and validity tests strengthen the credibility of the instrument, ensuring it accurately and consistently measures the constructs of knowledge, creativity, and confidence about principals' performance. Table 1 outlines the research variables and their corresponding indicators.

Data Analysis

The data were analyzed using the Structural Equation Model (SEM) and SmartPLS software version 3.0. SEM was a statistical analysis method to examine the complex relationships between latent variables (knowledge, creativity, confidence) and principal performance. This method was particularly suitable due to its ability to simultaneously test direct and indirect relationships between variables in the research model (Iacobucci et al., 2007). Specifically, SEM was utilized to determine whether self-confidence mediates knowledge/creativity and principal performance.

SmartPLS was chosen for its robustness and flexibility, particularly for small sample sizes, as it accommodates smaller datasets effectively (Hair et al., 2019). The questionnaire data were imported into SmartPLS in CSV format, and measurement and structural models were created by linking each latent variable with its corresponding indicators.

The validity of the data was assessed using Convergent Validity, which evaluates whether the indicators of a variable are well-correlated. The criteria for validity included a loading factor of ≥ 0.70 and an Average Variance Extracted (AVE) value of ≥ 0.50 (Hair et al., 2019). Discriminant Validity was also tested to ensure that the latent variables were distinct, using AVE values higher than inter-variable correlations or an HTMT (Heterotrait-Monotrait Ratio) of < 0.90. Reliability was confirmed if the Composite Reliability (CR) value was ≥ 0.70 and the Cronbach's Alpha value was also ≥ 0.70. These rigorous tests ensured the data analysis process's accuracy, reliability, and robustness.

Limitations

Several limitations of this study must be acknowledged. The reliance on respondent-provided data without qualitative enrichment limits the contextual depth of the findings. Incorporating qualitative approaches, such as interviews or case studies, could provide a more nuanced understanding. Additionally, the study focuses only on three variables (knowledge, creativity, and confidence) while omitting other potentially significant factors influencing school leadership performance. The small sample size and limited inclusion of diverse school settings further constrain the generalizability of the results. These limitations present opportunities for future research to expand on these findings by exploring additional variables, employing larger and more diverse samples, and adopting mixed-methods approaches to deepen insights into effective educational leadership.

3. FINDINGS

Measurement Model (Outler Model)

The measurement model evaluates the relationship between the latent variables, namely knowledge, creativity, confidence, and performance, and their indicators. This evaluation aims to check whether these indicators can validly and reliably measure the latent variables. The following are the results of the external loadings based on the results processed using SmartPLS.

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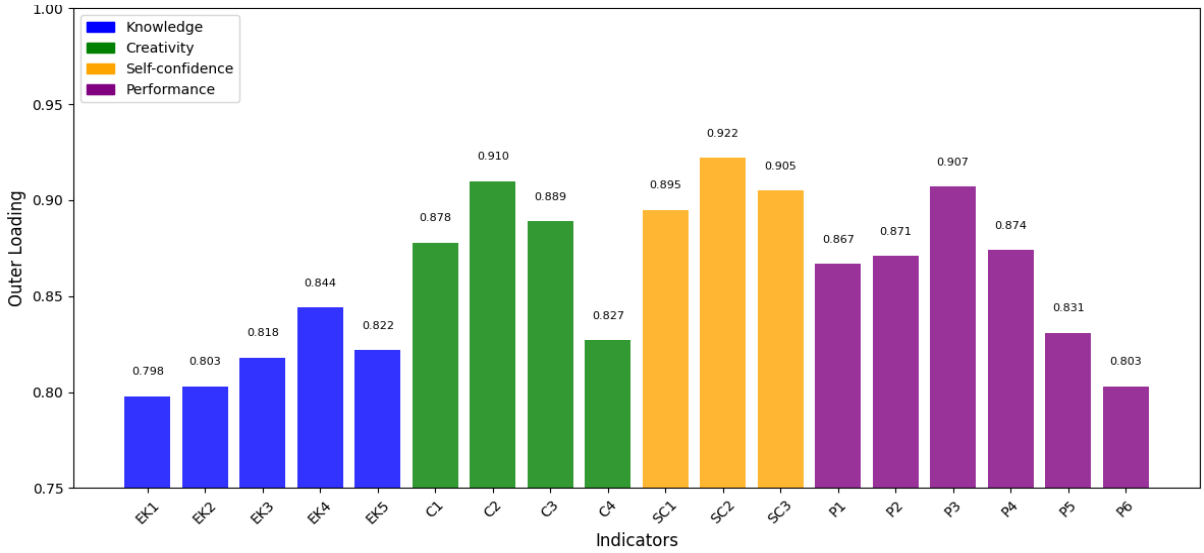

Figure 1. Outer Loading

The effect size was calculated to ensure that the statistical description data provided a clearer understanding of the study by offering a detailed picture of the distribution of respondents' data. Figure 1 demonstrates that all indicators for each variable (knowledge, creativity, confidence, and principal performance) exhibit outer loading values ≥ 0.70. This indicates that each indicator plays a significant role and is strongly correlated with the latent variable it represents. In other words, the indicators effectively reflect and capture the conceptual essence of each variable being studied.

Reliability & Average Variance Extracted (AVE)

Validity and reliability criteria can also be seen from the reliability value of a construct and the Average Variance Extracted (AVE) value of each latent variable, which can be seen in Table 2.

Table 2. Composite Reliability (CR) & Average Variance Extracted (AVE)

Variable	Cronbach's Alpha	rho_A	CR	AVE
Knowledge (X1)	0.876	0.878	0.909	0.668
Creativity (X2)	0.899	0.901	0.930	0.769
Self-confidence (X3)	0.893	0.895	0.933	0.823
Performance (Y)	0.929	0.931	0.944	0.739

Table 2 indicates that all variables meet the reliability criteria, as evidenced by Composite Reliability (CR) and Cronbach's Alpha values ≥ 0.70 (Fornell & Larcker, 1981). Additionally, the data confirms that all latent variables (knowledge, creativity, confidence, and performance) satisfy the criteria for convergent validity, with Average Variance Extracted (AVE) values ≥ 0.50 (Hair et al., 2019). This demonstrates that the construct data possess strong convergent validity, indicating that the indicators are closely associated with the latent variables they are designed to measure.

Structural Model (Inner Model)

The internal or structural model was tested to examine the relationships between constructs, significance values, and the R-square of the research model. The evaluation of the structural model involved analyzing the R-square values for the dependent constructs, conducting t-tests, and assessing the significance of the parameter coefficients.

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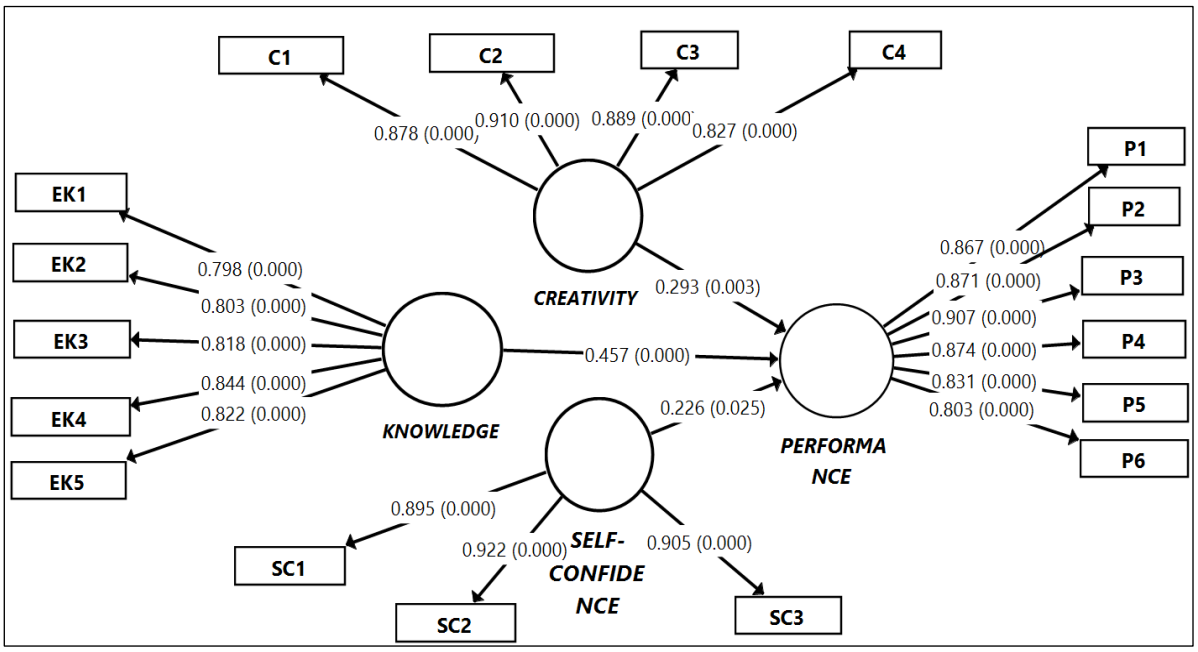

Figure 2. Structural Model

The design of the structural model (inner model) establishes the relationships between variables following the completion of validity and reliability tests. The relationships between latent constructs are then evaluated and assessed. This study used path coefficient values to measure the strength of the relationships between latent variables. At the same time, t-statistics and p-values were employed to determine their statistical significance.

Figure 2 presents a Structural Equation Modeling (SEM) model illustrating the relationships between the latent variables (knowledge, creativity, self-confidence, and performance) and their respective indicators. The knowledge variable is measured by five indicators (EK1 to EK5), each with factor loadings exceeding 0.7, indicating a strong contribution of each indicator to the knowledge construct. The creativity variable is represented by four indicators (C1 to C4) with factor loadings ranging from 0.827 to 0.910, confirming that these indicators significantly describe the creativity construct. The self-confidence variable is measured by three indicators (SC1 to SC3) with factor loadings between 0.895 and 0.922, demonstrating a robust relationship between the indicators and the self-confidence construct. Finally, the performance variable is measured by six indicators (P1 to P6), with factor loadings between 0.803 and 0.907, showing that these indicators effectively represent the performance construct.

Path Coefficients

Path coefficients are a key output in structural equation modeling, describing the strength and direction of the relationship between exogenous latent variables (knowledge, creativity, and self-confidence) and endogenous variables (principal performance). Table 3 presents the results of the path analysis for the three hypotheses, illustrating the effects of variable X1 (knowledge), X2 (creativity), and X3 (self-confidence) on variable Y (principal performance). These coefficients provide insight into the relative influence of each exogenous variable on the performance of school principals.

The results of hypothesis testing reveal that school principals' knowledge significantly impacts their performance, contributing 45.7%. This indicates that higher levels of knowledge among principals correlate with

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better performance. This finding is supported by a t-statistic value of 4.034, which exceeds the critical threshold of 1.993, and a very small p-value of 0.000, confirming that the relationship between knowledge and performance is highly statistically significant and unlikely to occur by chance. Similarly, the creativity of principals plays an important role in enhancing performance, contributing 29.3%. Although its effect is slightly smaller than knowledge's, creativity remains a significant factor. This is evidenced by a t-statistic of 2.955, greater than 1.993, and a p-value of 0.003, demonstrating statistical significance.

Table 3. Result of Path Coefficients

Hypothesis	Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P-value
H1	X1 → Y	0.457	0.450	0.113	4.034	0.000
H2	X2 → Y	0.293	0.309	0.099	2.955	0.003
H3	X3 → Y	0.226	0.218	0.100	2.254	0.025

Lastly, principals' self-confidence contributes 21.8% to performance. While its impact is minor compared to knowledge and creativity, self-confidence still plays a meaningful role. This is supported by a t-statistic of 2.254 and a p-value of 0.025, further confirming its significance. Overall, these findings demonstrate that knowledge, creativity, and self-confidence are significant factors that collectively and positively influence the performance of school principals, highlighting their importance in effective leadership.

Table 4. Result of R-Square

Latin variable	R-square	R-square adjusted
Performance of Principal (Y)	0.880	0.875

Table 4 indicates an R-squared value of 0.880 and an adjusted R-squared value of 0.875, demonstrating that knowledge, creativity, and confidence collectively contribute 87.5% to principals' performance. This implies that the majority (87.5%) of the variation in principals' performance can be attributed to these three leadership traits. In other words, these characteristics (knowledge, creativity, and confidence) significantly shape how principals' performance is evaluated. The findings suggest that the better a principal's knowledge, creativity, and confidence, the higher their performance will likely be. The remaining 12.5% of the variation in performance is influenced by other factors not accounted for in this research model. Nonetheless, these results underscore that knowledge, creativity, and confidence are critical components for enhancing school leadership performance and should be prioritized in efforts to support and develop effective principals.

4. Discussion

The impact of Knowledge, Creativity, and Self-Confidence on Principal Performance

The findings reinforce theories that support creative leadership and cognitive development through direct experience while challenging traditional approaches that lack flexibility. The emphasis on school leaders' creativity and confidence in the educational context suggests the need for a more collaborative, innovative, and adaptive approach to leadership. Creative leaders focus on meeting administrative standards and creating a culture of deep and continuous learning. This finding, which highlights the importance of creativity in educational leadership, supports transformational leadership theory, which suggests that inspiring and innovative leaders can motivate team members to achieve higher goals. Creative school leaders inspire teachers to adopt new teaching methods, ultimately contributing to better student learning outcomes. Creative school leaders can create a more interesting and relevant learning environment, increasing student and teacher motivation and engagement. Creativity and confidence support the theory of cognitive development. Problem-solving and critical thinking skills can be developed through practice and hands-on experience. Effective leadership depends on management skills, critical thinking, and innovativeness in different situations.

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The results indicate that knowledge and creativity affect the effectiveness of principal leadership. Strong knowledge helps principals develop innovative solutions and improves their decision-making effectiveness. This aligns with the theory of cognitive development, which states that knowledge is an important foundation for critical thinking and creativity, which ultimately affects professional performance. In educational leadership, the findings support the view that principals with deep knowledge are better equipped to lead well in complex and dynamic environments because their knowledge helps them adapt more easily and develop creative problem-solving approaches. The analysis of results shows a positive and significant effect on the performance of principals, where the statistical test results show that the p-value is 0.000 < 0.05 and the t-statistic value is 4.034 > 1.993. Based on the results of the path diagram (Figure 2), the variable knowledge directly affects the principal's performance of 0.457 (45.7%). This means that the effect of knowledge on principals' performance is not due to chance but is a real relationship.

Creativity and knowledge are essential for effective leadership, enabling school leaders to respond to challenges with innovative and informed solutions. Knowledge provides a deep understanding of education, policy, and school management dynamics. Furthermore, creativity enables school leaders to use this knowledge in the form of adaptive and solution-oriented strategies. This combination of creativity and knowledge results in a leadership approach that is responsive to change and proactive in creating opportunities for school development. Principals who have a deeper knowledge of their duties and functions are more likely to be able to lead the school to good performance in terms of quality of education. This study uses several indicators that support the knowledge variable, namely indicators of educational quality, involvement in dialogue, problem analysis skills, work experience, and critical thinking skills. The above results are relevant to previous research, which found that the principal must be smart, agile, assertive, and courageous, both men and women. Principals must have foreign language and social skills (Suryana & Wahab, 2020; Sepniwati & Rahyasih, 2020). Lazaridou (2009) emphasized that highly specialized knowledge and skills are important for principal to improve their performance as school leaders. Similarly, Widodo et al. (2021) found that in-depth knowledge helps principals to make appropriate policies, develop curriculum, and better manage school resources. Principals with good knowledge and experience can effectively guide teachers to adapt to the latest technological developments in education (A'mar & Eleyan, 2021).

Hess & Kelly's (2007) recent study categorized the seven dimensions of an effective principal's school: management of educational outcomes/achievement, personnel, technology, external relations, norms and values, instruction, and school culture. Bottoms and O'Neil (2001) assert that principals need to be equipped with strong knowledge in their areas of expertise, such as changes in curriculum, teaching, school practices, and organizational structure; knowledge of national performance standards; knowledge of the principles of working with parents, teachers, students, and the community to support the school's mission; and knowledge of computers and the Internet to support student learning, teacher development, and their professional development.

This assertion aligns with Wagner & Sternberg's (1985) view that knowledge is important to a principal for managerial success because it is about managing people, tasks, oneself, and careers. Based on this theory, Lazaridou (2009) concluded that principals need to have three general categories of knowledge to improve their performance: knowledge of the organization, knowledge of people, and knowledge of tasks. The study conducted by Leithwood et al. (2004) found that principals' knowledge of curriculum development and school management is associated with better school performance. Farahbakhsh (2012) stressed that the level of intelligence is related to the quality of the work of the principal. An increase in intelligence can create a better working environment and improve the performance of principals. The results of this study are consistent with the findings of Leithwood and Jantzi (2006), who showed that principals' knowledge of educational management and learning strategies plays a significant role in improving school leadership effectiveness. Knowledge enables principals to make the right decisions and supports the overall development of the school.

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This study also reveals that principals' performance is significantly influenced by creativity. Statistical test results show a p-value of 0.003 (<0.05) and a t-statistic value of 2.955 (>1.993), confirming the significance of the relationship. The path coefficient data in Figure 2 indicates a direct effect of creativity on principals' performance, with a coefficient of 0.293 (29.3%). This demonstrates a positive and significant relationship, suggesting that more creative principals tend to exhibit better performance.

This finding aligns with existing literature, emphasizing that creativity enables school leaders to develop effective strategies and adapt to changes. In this study, creativity was a key factor in enhancing principals' performance, indicating that creative principals are better equipped to address school operational challenges. Vandenberghe (1995) highlights the critical role of creativity in educational leadership and management. Similarly, research by Mumford et al. (2002) in *Leadership Quarterly* underscores the importance of creativity in effective educational leadership. Shalley et al. (2004) further emphasize how creativity enhances organizational effectiveness across various contexts, including education, reaffirming its vital role in school leadership.

The findings of this study align with Soleimani and Tebyanian's (2011) research, which highlights that a principal's creativity significantly contributes to students' happiness at school. Principals who exhibit creativity, flexibility, motivation, and resilience often drive student achievements, fostering a positive and joyful school environment. Guilford (1975) emphasized that the creativity and innovation of school leaders are critical factors influencing the quality of an institution's environment (Mokhtarian& Mohammadi, 2011). He identified four key principles of the creative process: vagueness, flexibility, originality, and competence.

Similarly, Sternberg (2001) defined creativity as a combination of innovation, flexibility, and responsibility, enabling leaders to make thoughtful decisions that result in personal satisfaction and positively affect the well-being of others (Soleimani & Tebyanian, 2011). These insights underscore the importance of creative leadership in cultivating an enriching and supportive school atmosphere, ultimately enhancing institutional quality and student outcomes.

Farahbakhsh (2011) emphasized that creativity is a crucial trait for principals in enhancing the quality of education. Creative principals are better equipped to address and solve challenges within the school environment, enabling them to implement innovative solutions and foster continuous improvement in educational practices. This creativity plays a pivotal role in meeting the dynamic demands of modern education and driving institutional progress. A hallmark of creativity is the ability to generate new ideas for addressing organizational challenges. This trait becomes especially valuable during rapid technological change (Fang et al., 2015; Tang & Zhang, 2022; Tang et al., 2024).

Chen (2008) noted that only creative principals can foster the creative abilities of teachers, enabling them to enhance students' self-innovation skills, as demonstrated in basic education systems in China (Chen & Yuan, 2021); Zhang et al., 2018). Stoll and Temperley (2009) found that creative leadership establishes the conditions, culture, and structure needed for teachers' creativity to thrive, ultimately improving students' creative learning experiences (Robinson, 2011). Conversely, Levesque (2001) argued that the quality of creativity is closely linked to time, emphasizing that sufficient time is critical for enhancing the creativity of principals and their teams. He stressed that leaders must allocate time for reflection to support creative teams and foster innovation. effectively

The relationship between creativity and leadership has also been explored by Amabile (1998), who highlighted the importance of creativity in addressing leadership challenges. Creativity enables school leaders to think outside the box and develop innovative solutions to school problems. This research confirms that creative school leaders are better able to facilitate innovation in learning, improving school performance. Based on the above descriptions, creativity is an important skill in school leadership in an era of rapid change. A creative principal may use new methods to improve the learning process, design interesting extracurricular programs, or solve school problems innovatively. Creativity is, therefore, one of the key competencies that school leaders need to possess.

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Another variable examined in this study is self-confidence, which significantly influences principal performance. Statistical test results indicate a p-value of 0.025 (<0.05) and a t-statistic value of 2.254 (>1.993), confirming the significance of this relationship. The path coefficient data further reveals a direct effect of self-confidence on principals' performance, accounting for 21.8% (0.218) of the variance.

Northouse (2016) identifies self-confidence as one of the core traits of effective leaders, supporting the idea that confident principals are more likely to perform well. Leadership involves influencing others, and self-confidence enables leaders to trust that their efforts to guide and inspire are appropriate and effective. This finding aligns with research by Chemers et al. (2000), which confirms that self-confidence positively impacts leadership effectiveness. Enhanced leadership effectiveness, in turn, boosts principals' confidence and contributes to improved school performance.

Self-confidence is a fundamental attribute of effective leadership and is crucial in educational leadership (Oyer, 2015; McCormick, 2001). Kanter (2006, p.3) describes confidence as "the bridge that connects expectations and performance," emphasizing its pivotal role in achieving success. Principals must believe in their knowledge, skills, and capacity for innovation to effectively address various challenges within the school environment. Supporting this view, Woodman et al. (2010) highlight a positive and linear relationship between self-confidence and performance, suggesting that higher self-confidence results in improved performance.

Oyer (2015) further asserts that self-confidence strongly and positively correlates with leadership effectiveness, making it a critical attribute for potential and successful educational leaders. Similarly, Perets et al. (2023) identify confidence as a key element of leadership. These findings align with Bandura's (1997) concept of self-efficacy, which underscores the importance of self-confidence in successfully carrying out leadership tasks. Confident principals are more likely to make bold and significant decisions, which can lead to improved overall performance and organizational outcomes. These insights reinforce the critical role of self-confidence as a cornerstone of effective educational leadership.

Mediating Effect of Self-Confidence

Self-confidence is a significant mediating factor in the relationship between knowledge and principal performance, as evidenced in this study. A principal's knowledge of school management, pedagogy, and learning strategies contributes to their confidence in making decisions and effectively managing the school. Bandura (1997) highlighted that self-confidence, or self-efficacy, stems from experience and strong knowledge. Leaders with in-depth knowledge are more likely to confidently approach school challenges, leveraging their expertise to navigate complex situations.

In this context, knowledge equips principals with the necessary information to make informed decisions and fosters the confidence that those decisions are sound and appropriate. This dual role underscores the importance of knowledge as a foundation for effective decision-making and self-confidence, which enhance leadership performance.

Self-confidence empowers school leaders to apply their knowledge in practice effectively, as Judge, Locke & Kirkpatrick. (1991) observed that highly self-confident individuals are better equipped to translate their skills and knowledge into tangible actions, thereby enhancing performance. In the context of school leadership, confident principals are more adept at implementing learning and management strategies, resulting in improved overall school outcomes.

Wood and Bandura (1989) noted that self-efficacy is a critical bridge between knowledge and performance, enabling leaders to convert theoretical understanding into practical application. It serves as a motivator, encouraging leaders to take calculated risks and develop innovative solutions informed by their expertise. Conversely, without sufficient confidence, knowledge may remain underutilized, as individuals may hesitate to make decisions or doubt the efficacy of their actions. This highlights the integral role of self-confidence in maximizing the practical application of knowledge in leadership. The finding that confidence

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mediates the relationship between learning and performance carries significant implications for leadership development programs. Such programs should not only aim to enhance school leaders' knowledge but also focus on building their confidence. Luthans et al. (2006) highlight the importance of developing confidence through experiential training, self-reflection, and psychological support, emphasizing that these elements are essential for improving leadership effectiveness.

An approach centered on enhancing self-efficacy can ensure that the knowledge gained during training is effectively applied in practice. Leadership training programs that integrate knowledge acquisition with practical skill development and simulations are particularly effective in equipping school leaders with the confidence to handle real-life challenges in schools. These programs better prepare principals to translate their learning into impactful leadership practices by fostering knowledge and confidence.

Effective leadership is often closely linked to high levels of self-confidence. Kanter (2006) conducted extensive research on confidence and found a significant relationship between leaders' confidence and organizational outcomes driven by their behavior. According to Kanter, successful leaders are confident leaders who achieve organizational goals and lead effective teams. This underscores a strong connection between educational leadership and confidence. Kanter further conceptualized confidence into four dimensions: self-confidence, confidence, system confidence, and external confidence.

However, variations in the impact of confidence on leadership effectiveness have been observed in different contexts. For instance, Smith and Petersen (2011) found that in resource-constrained environments, the influence of confidence on principal performance was less pronounced compared to schools with robust community and government support. These differences highlight the importance of contextual factors, such as social and political variables, which can significantly affect leadership effectiveness, suggesting that confidence alone may not be sufficient in every setting.

The descriptions above indicate that self-confidence plays a crucial role as a mediator in the relationship between knowledge and school leadership performance. The knowledge a principal possesses does not directly enhance their performance as a school leader; instead, it bolsters their confidence, significantly improving their effectiveness. Knowledge equips principals with the assurance to make decisions and tackle challenges, enhancing operational efficiency. Confidence enables the practical application of knowledge in everyday tasks, such as managing the school and interacting with teachers and students.

This mediating role of self-confidence strengthens the link between cognitive competence and desired performance outcomes. Supporting this perspective, Musadad et al. (2022) highlighted self-efficacy (closely associated with self-confidence) as a powerful mediating factor across various educational contexts. Self-efficacy influences how effectively school leaders apply their knowledge and impacts the readiness and performance of their staff. Thus, self-confidence and self-efficacy translate principals' cognitive skills into tangible leadership success.

5. CONCLUSION

This study highlights the critical role of knowledge, creativity, and self-confidence in fostering effective educational leadership. These findings significantly affect education policy frameworks, particularly in cultivating adaptive, innovative, and sustainable school leadership. By integrating these factors into broader education policies, systems can develop school leaders who excel operationally and act as agents of change, driving innovation and improving the quality of education. Creativity is vital for innovatively addressing challenges and creating dynamic learning environments. At the same time, self-confidence enables school leaders to make sound decisions, lead effectively, and inspire staff and students. Training programs that enhance creativity, decision-making, and confidence are essential to equipping school leaders with the skills to support school success and student achievement. Workshops, peer coaching, and innovative resource integration are practical approaches to developing these competencies.

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