



MANAGERIAL CAPABILITY, E-FLUENCY, AND ORGANIZATIONAL CULTURE ON THE RESEARCH PRACTICES OF SCHOOL HEADS

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Abstract: This study examined the influence of managerial capability, e-fluency, and organizational culture on the research practices of school heads in Region X-Northern Mindanao during the school year 2024-2025. It assessed school heads' managerial capability in terms of school operation management, fiscal management, and learning climate management; e-fluency based on awareness, self-efficacy, leadership, and affective domains; organizational culture in terms of managing change, achieving goals, coordinating teamwork, building a strong culture, and commitment to service; and research practices in the areas of infrastructure, capability, funding opportunities, collaborative practices, and interest and engagement. The study further investigated the correlation between research practices and the identified independent variables and identified which variables best predicted research practices. Findings revealed that school heads demonstrated high levels of managerial capability, e-fluency, and organizational culture, with awareness in e-fluency needing further enhancement. Research practices were rated practiced, but areas such as infrastructure, funding opportunities, and capability require additional support to further enhance research participation. Correlation analysis found significant relationships between research practices and managerial capability, e-fluency, and organizational culture, with building a strong culture, organizational culture, and e-fluency as the strongest correlates. Regression analysis identified five significant predictors of research practices: building a strong culture, achieving goals, self-efficacy, awareness, and school operation management.

Index Terms – building a strong culture, achieving goals, self-efficacy, awareness, research capability, school operation management

I. INTRODUCTION

In today's evolving education system, school heads are crucial in driving improvements and enhancing education quality. Engaging in research practices allows them to gather and analyze data on teaching methods and student performance, helping identify strengths and weaknesses within their schools. By fostering a culture of inquiry through collaboration with teachers—mentoring them in research methods and supporting their projects—school heads can promote evidence-based practices. Staying informed about current educational research is essential for applying relevant insights to decision-making. Additionally, utilizing technology streamlines data collection and provides access to valuable resources. By focusing on research, school heads not only enhance their skills but also improve the teaching and learning environment for teachers and students, leading to better educational outcomes.

In the Philippine context, school heads encounter significant obstacles that hinder their meaningful engagement in research practices, despite the recognized importance of research in education. Although the Department of Education (DepEd) has made concerted efforts to promote research through annual trainings and seminars, such as In-Service Training (INSET), Collaborative Expertise (CE), and Learning Action Cell (LAC) programs, many school heads still refrain from participating in research activities, with few motivated to submit their work. This trend is further illustrated by low attendance at research conferences, where only a few school heads and teachers participate. A local study by Manila et al. (2022) confirms that many Filipino school heads lack essential research skills, such as formulating research questions and accessing relevant academic resources. Additional research highlights barriers including limited access to research materials, inadequate training in research methodologies, and insufficient institutional support. As a result, participation in research activities remains alarmingly low, indicating a systemic issue that must be addressed to cultivate a culture of inquiry within schools. Without significant changes to support and encourage research engagement, the potential for meaningful educational improvement may continue to be overlooked.

Addressing the challenges surrounding the research practices of school heads is crucial for enhancing educational quality within DepEd and its schools. When school heads are equipped to analyze data and make informed decisions, they can better align

teaching methods with student needs, fostering effective practices and optimizing resource use. Supporting school heads in developing strong research capabilities enables DepEd to facilitate the successful implementation of educational policies aimed at improving learning outcomes, thereby ensuring that goals for educational excellence are met. Furthermore, fostering a culture of inquiry and accountability within schools encourages data-driven decision-making, positively impacting student performance and teacher morale. By prioritizing robust research practices among school heads, DepEd and schools can collaboratively create an effective learning environment that benefits all learners, ultimately building public trust in the education system and leading to increased enrollment and community support.

Legislative frameworks such as DepEd Order No. 26, s. 2021, and DepEd Order No. 16, s. 2017 underscore the significance of systematic inquiry for improving educational practices. These orders advocate for the use of research as a tool for enhancing educational outcomes, aligning with Republic Act 9155, which promotes research within educational institutions. The existing literature also consistently reveals that the research practices of school heads is hampered by key challenges such as time constraints, fear of undertaking research, and the perception of research as an additional burden. For example, in an international study conducted by Froiland (2021), he revealed that a significant number of school heads express feelings of inadequacy regarding their preparedness to conduct research. They often find themselves struggling to interpret and utilize research findings effectively, which limits their ability to influence educational practices in their schools. Moreover, a cross-national study highlighted further complications, revealing that school heads frequently grapple with time constraints and heavy workloads that detract from their capacity to integrate research into their management practices (Johnson, 2019). This disconnect between research and the realities of school administration can result in a stagnant educational environment where inquiry and evidence-based decision-making are not prioritized. These identified barriers highlight the pressing need for targeted interventions tailored to empower school heads in their research practices. Without addressing these foundational issues, the potential benefits of research for educational improvement will remain untapped.

In response to the challenges faced by school heads in enhancing their research practices, three key variables such as managerial capability, e-fluency, and organizational culture are identified as essential. Strengthening these areas can lead to improved research practices among school heads. A strong managerial capability is vital as it equips school heads with the skills necessary to effectively plan, coordinate, and implement initiatives that support educational objectives, thereby creating an environment conducive to research. School heads who excel in management can organize professional development opportunities, align research with school goals, and allocate resources effectively, enabling both themselves and their teachers to engage in meaningful research activities (Suyatno & Santosa, 2022; Mukherjee, 2019). E-fluency is another essential factor; by developing digital fluency, school heads can efficiently navigate the digital landscape to access and evaluate research literature, utilize digital tools for data collection and analysis, and communicate their findings through various online platforms, thus contributing to educational discourse and collaboration (Aziz, 2024; Fransson et al., 2020). Lastly, a supportive organizational culture that prioritizes research fosters motivation among school heads to engage in systematic inquiry, as it provides them with the necessary resources, training, and encouragement to develop their research skills (Puspitasari et al., 2024; Jintalan & Velasco, 2023). When research is recognized as a core value and supported by the institution, school heads are more likely to explore innovative approaches, ultimately leading to improved educational outcomes and a culture of continuous improvement. Together, these three factors—managerial capability, e-fluency, and organizational culture—are crucial in enhancing the research practices of school heads, and facilitating a robust culture of inquiry within schools.

Given this context, it is clear that there is a pressing need to examine various factors that contribute to the research practices of school heads, such as managerial capability, e-fluency, and organizational culture, particularly in the Philippine context where limited studies have been conducted. By gaining a deeper understanding of these factors, it will be possible to develop targeted interventions and policies that effectively support school heads in enhancing their research practices. This, in turn, may empower them to conduct and integrate research into their leadership strategies. This research specifically focused on the research practices of school heads across the seven (7) schools divisions within Region X during the school year 2024-2025.

1.1. Statement of the Problem

This study examined the effects of managerial capability, e-fluency, and organizational culture to the research practices of school heads in Region X-Northern Mindanao for school year 2024-2025. Specifically, it sought to answer the following questions:

1. What is the level of managerial capability of school heads in terms of:
 - a. school operation management;
 - b. fiscal management; and
 - c. learning climate management?
2. What is the level of e-fluency of school heads in terms of:
 - a. awareness;
 - b. self-efficacy;
 - c. leadership; and
 - d. affective?
3. What is the level of organizational culture of school heads in terms of:
 - a. managing change;
 - b. achieving goals;
 - c. coordinating teamwork;
 - d. building a strong culture; and
 - e. commitment to service?
4. What is the level of research practices of school heads in terms of:
 - a. infrastructure;
 - b. capability;
 - c. funding opportunities;
 - d. collaborative practices; and
 - e. interest and engagement?

5. Is there a significant relationship between the research practices of school heads and:
 - a. managerial capability;
 - b. e-fluency; and
 - c. organizational culture?
6. Which of the variables, singly or in combination, best predict the school heads' research practices?

1.2. Hypothesis of the Study

The following hypotheses were tested at 0.05 level of significance.

H0₁: There is no significant relationship between school heads' research practices and:

- a. managerial capability
- b. e-fluency, and
- c. organizational culture.

H0₂: There is no variable, singly or in combination, that best predicts the research practices of school heads.

II. RESEARCH METHODOLOGY

This study employed a descriptive-correlational research design to examine relationships among managerial capability, e-fluency, organizational culture, and research practices of school heads. The research was conducted across seven (7) schools divisions of Department of Education, Region X-Northern Mindanao with a sample of 493 school heads for the school year 2024-2025. Data collection utilized a validated four-part survey questionnaire with 5-point Likert-type scales measuring managerial capability, e-fluency, organizational culture, and research practices.

The instrument underwent rigorous validation through expert reviews followed by pre-testing, yielding strong reliability coefficients (Cronbach's alpha) of 0.892, 0.928, 0.912, and 0.978 for each section respectively. Statistical analysis followed a three-stage approach. First, descriptive statistics (means) were calculated to determine current levels of all variables. Second, Pearson product-moment correlation coefficients were computed to examine relationships between variables. Third, stepwise multiple linear regression analysis was used to identify the variables that best predict school heads' research practices.

III. RESULTS AND DISCUSSION

3.1. Level of School Heads' Managerial Capability

Managerial capability refers to the knowledge, skills, and competencies that school heads need to effectively guide and oversee teachers and schools. This capability is crucial for achieving organizational goals, making informed decisions, and ensuring efficient school operations. Table 1 presents the overall managerial capability of school heads, covering school operation management, fiscal management, and learning climate management.

Table 1. Overall Managerial Capability of School Heads

INDICATORS	MEAN	DESCRIPTIVE RATING	QUALITATIVE INTERPRETATION
School Operation Management	4.53	Strongly Agree	Highly Capable
Fiscal Management	4.51	Strongly Agree	Highly Capable
Learning Climate Management	4.51	Strongly Agree	Highly Capable
Overall Mean	4.52	Strongly Agree	Highly Capable

Legend:

Range	Descriptive Rating	Qualitative Interpretation
4.51 – 5.00	Strongly Agree	Highly Capable
3.51 – 4.50	Agree	Capable
2.51 – 3.50	Neutral	Moderately Capable
1.51 – 2.50	Disagree	Less Capable
1.00 – 1.50	Strongly Disagree	Not Capable

The overall mean score of 4.52 indicates that school heads were highly capable in executing their managerial roles. Among the three sub-variables, school operation management had the highest mean of 4.53, followed by fiscal management and learning climate management, both at 4.51, all falling within the very highly capable category.

The findings suggest that school heads demonstrated exceptional capability in overseeing school operations, ensuring that administrative and instructional processes functioned smoothly. Their fiscal management skills reflected their ability to allocate and utilize financial resources effectively in support of institutional goals. Meanwhile, their capability to maintain a conducive learning climate emphasized their role in fostering an environment that prioritized student engagement and well-being.

These results imply that school heads played a critical role in ensuring the overall efficiency of school management, balancing operational, financial, and learning-related responsibilities. Their strong performance in all areas signifies effective leadership, contributing to the stability and progress of educational institutions. The ability to manage resources and maintain a productive learning climate is essential in sustaining high educational standards and institutional effectiveness.

This result is supported by the study of Lezha (2017), which emphasized that leadership significantly influenced organizational productivity and efficiency. Similarly, Geraki (2016) highlighted that school heads' ability to establish a positive learning climate directly contributed to school effectiveness. Moreover, Mahler et al. (2018) asserted that strong financial management affected school operations by ensuring sustainability and resource allocation. These studies reinforce the findings, affirming that capable school leadership is integral to institutional success.

3.2. Level of School Heads' E-Fluency

School heads' e-fluency refers to their ability to effectively use digital tools and technologies to navigate the digital landscape, conduct online research, and achieve goals. It includes selecting and utilizing appropriate digital resources while enhancing personal and collaborative learning experiences. Table 2 presents the overall e-fluency of school heads, encompassing four key dimensions: affective, leadership, self-efficacy, and awareness.

Table 2. Overall E-Fluency of School Heads

INDICATORS	MEAN	DESCRIPTIVE RATING	QUALITATIVE INTERPRETATION
Affective	4.51	Agree	Highly Fluent
Leadership	4.46	Agree	Fluent
Self-Efficacy	4.45	Agree	Fluent
Awareness	4.25	Agree	Fluent
Overall Mean	4.41	Agree	Fluent

Legend:

Range	Descriptive Rating	Qualitative Interpretation
4.51 – 5.00	Strongly Agree	Highly Fluent
3.51 – 4.50	Agree	Fluent
2.51 – 3.50	Neutral	Moderately Fluent
1.51 – 2.50	Disagree	Less Fluent
1.00 – 1.50	Strongly Disagree	Not Fluent

The overall mean of 4.41 indicates that school heads were fluent in utilizing digital tools for educational leadership. Among the sub-variables, the affective dimension received the highest mean of 4.51, reflecting the school heads' strong motivation and emotional engagement in digital fluency development. Meanwhile, leadership (4.46) and self-efficacy (4.45) followed closely, suggesting that school heads effectively integrated technology into their leadership roles while maintaining confidence in their digital skills. The awareness dimension, with the lowest mean of 4.25, still fell within the fluent range but highlighted the need for improvement in recognizing emerging digital trends and their implications for school management.

The findings imply that school heads demonstrated a strong inclination toward digital learning, with emotional engagement playing a crucial role in their fluency. Their leadership and self-efficacy scores suggested that they effectively guided their institutions in digital adaptation but may have encountered challenges in staying updated with technological advancements. Addressing gaps in awareness through continuous professional development could further enhance their ability to lead in an increasingly digitalized educational landscape.

This result is supported by the study of Fernandez et al. (2023), which emphasized the importance of school heads in fostering digital integration through both emotional and strategic leadership. Similarly, Zakharov (2021) underscored the necessity of pedagogical support systems that enhance school heads' digital competence, particularly in leadership and self-efficacy. Moreover, Romero and Perez (2019) highlighted the role of school heads in shaping teachers' awareness of digital advancements, reinforcing the need for sustained professional development efforts. Lastly, Zhao et al. (2023) provided evidence that self-assessment tools helped leaders identify areas for growth, reinforcing the significance of continuous learning in digital education leadership.

3.3. Level of School Heads' Organizational Culture

Organizational culture refers to all beliefs, feelings, behaviors, and symbols that characterize an organization. More specifically, organizational culture is defined as shared philosophies, ideologies, beliefs, feelings, assumptions, expectations, attitudes, norms, and values. Table 3 presents the overall organizational culture of school heads, highlighting their effectiveness in key leadership dimensions. The overall mean of 4.55, interpreted as "Highly Favorable", signifies a strong organizational culture among school heads.

The highest-rated dimension, commitment to service (4.59), reflected their dedication to prioritizing the needs of students, parents, and the school community. Managing change (4.57) followed closely, suggesting that school heads effectively navigated transitions and implemented necessary adjustments. Coordinating teamwork (4.54) indicated their ability to foster collaboration among staff, while achieving goals (4.53) demonstrated their capacity to set and accomplish institutional objectives. Lastly, building a strong culture (4.52) emphasized their efforts in reinforcing shared values and beliefs within the school environment.

The findings imply that school heads exhibited a comprehensive approach to leadership, ensuring that all facets of organizational culture were effectively maintained. Their ability to manage change and coordinate teamwork contributed to the seamless execution of school initiatives. Moreover, their focus on achieving goals and strengthening school culture reinforced a structured and goal-driven educational environment.

Table 3. Overall Organizational Culture of School Heads

INDICATORS	MEAN	DESCRIPTIVE RATING	QUALITATIVE INTERPRETATION
Commitment to Service	4.59	Strongly Agree	Highly Favorable
Managing Change	4.57	Strongly Agree	Highly Favorable
Coordinating Teamwork	4.54	Strongly Agree	Highly Favorable
Achieving Goals	4.53	Strongly Agree	Highly Favorable
Building a Strong Culture	4.52	Strongly Agree	Highly Favorable
Overall Mean	4.55	Strongly Agree	Highly Favorable

Legend:

Range	Descriptive Rating	Qualitative Interpretation
4.51 – 5.00	Strongly Agree	Highly Favorable
3.51 – 4.50	Agree	Favorable
2.51 – 3.50	Neutral	Moderately Favorable
1.51 – 2.50	Disagree	Less Favorable
1.00 – 1.50	Strongly Disagree	Not Favorable

This result is supported by the study of Molo et al. (2022), which emphasized the significance of aligning school culture with institutional objectives to enhance leadership effectiveness. Their findings highlighted that school heads who actively engaged in service-oriented leadership fostered trust and collaboration among stakeholders. Furthermore, the study underscored the impact of well-established organizational culture on overall school performance, reinforcing the idea that effective leadership practices contributed to a more cohesive and goal-driven educational system.

3.4. Level of School Heads' Research Practices

Research practices refer to the collective behaviors, values, and norms that influence how educational institutions, especially school heads, approach research. These practices include promoting research activities, building research capabilities, securing funding, encouraging collaboration among school heads and researchers, and fostering interest in inquiry. Table 4 presents the overall research practices of school heads, encompassing five key domains: collaborative practices, interest and engagement, infrastructure, funding opportunities, and capability. The overall mean of 4.40 indicates that research practices among school heads were "Practiced." This suggests that while school heads are actively engaged in research-related activities, there remains room for enhancement in certain areas to further strengthen their involvement and effectiveness in research.

Table 4. Overall Research Practices of School Heads

INDICATORS	MEAN	DESCRIPTIVE RATING	QUALITATIVE INTERPRETATION
Collaborative Practices	4.46	Agree	Practiced
Interest and Engagement	4.40	Agree	Practiced
Infrastructure	4.39	Agree	Practiced
Funding Opportunities	4.38	Agree	Practiced
Capability	4.35	Agree	Practiced
Overall Mean	4.40	Agree	Practiced

Legend:

Range	Descriptive Rating	Qualitative Interpretation
4.51 – 5.00	Strongly Agree	Highly Practiced
3.51 – 4.50	Agree	Practiced
2.51 – 3.50	Neutral	Moderately Practiced
1.51 – 2.50	Disagree	Less Practiced
1.00 – 1.50	Strongly Disagree	Not Practiced

Among the five variables, collaborative practices received the highest mean of 4.46, indicating that school heads "Practiced" working with peers and stakeholders in research endeavors. This suggests that they prioritized teamwork and knowledge-sharing in research activities, fostering a collective approach to educational improvement. Interest and engagement followed closely with a mean of 4.40, reinforcing the idea that school heads exhibited a strong inclination toward research. Their willingness to participate in research-related activities highlight their recognition of its importance in shaping effective educational strategies.

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The infrastructure component obtained a mean of 4.39, which signifies that school heads actively worked toward establishing a research-conducive environment. This implies that they ensured access to essential resources, technology, and

institutional support, though further investment may be necessary to optimize research outcomes. Funding opportunities, with a mean of 4.38, also fell under "Practiced," indicating that while school heads sought financial resources to support research projects, constraints in securing sustained funding might have limited their efforts.

Capability, the lowest-rated variable at 4.35, still fell within the "Practiced" category but suggests that school heads perceived some gaps in their research competencies. While they engaged in research activities, they might have required additional training or professional development opportunities to enhance their methodological skills and analytical expertise. This underscores the need for structured learning programs that build their research proficiency over time.

The findings imply that school heads demonstrated a strong commitment to research but faced challenges in capability development and resource allocation. Strengthening professional development initiatives and ensuring sustainable funding mechanisms could further enhance their research involvement. Additionally, fostering a more structured research culture within schools could bridge gaps in research Capability and improve overall educational leadership.

This result is supported by the study of Hero (2023), which revealed that senior high school teachers possessed only moderate research skills, emphasizing the importance of school heads' role in providing training and mentorship. Similarly, Manila et al. (2022) found that many elementary teachers required supervision to conduct research, highlighting the need for school heads to facilitate structured support mechanisms. Furthermore, Bonus (2024) identified workload and lack of institutional support as key barriers to teachers' research participation, reinforcing the necessity for school heads to advocate for policies that alleviate these constraints.

Agatep and Villalobos (2020) also noted that many graduate students had only moderate abilities in research writing, suggesting that school heads should implement structured learning environments to enhance research competencies. Meanwhile, Oestar and Marzo (2022) found that school heads themselves faced gaps in data analysis and publication skills, underscoring the urgency of targeted capacity-building programs. Addressing these challenges could significantly elevate the overall research practices within educational institutions.

3.5. Correlation of Research Practices and the Independent Variables

Table 5 presents the correlation between managerial capability, e-fluency, and organizational culture and their relationship with the research practices of school heads. The table highlighted significant relationships between the independent variables and research practices, with all correlation coefficients showing statistical significance at the 0.01 level ($p < .01$).

Table 5. Correlation Between the Dependent and Independent Variables

VARIABLES	CORRELATION COEFFICIENT(r)	P-VALUE
Managerial Capability	.424	.000**
School Operation Management	.384	.000**
Fiscal Management	.406	.000**
Learning Climate Management	.344	.000**
E-Fluency	.561	.000**
Awareness	.438	.000**
Self-Efficacy	.511	.000**
Leadership	.486	.000**
Affective	.502	.000**
Organizational Culture	.585	.000**
Managing Change	.505	.000**
Achieving Goals	.504	.000**
Coordinating Teamwork	.442	.000**
Building a Strong Culture	.593	.000**
Commitment to Service	.486	.000**

** . Correlation is significant at the 0.01 level (2-tailed).

Managerial capability exhibited a moderate positive correlation ($r = .424$, $p = .000$) with research practices, indicating that school heads with strong managerial skills were more likely to engage in research activities. Among the sub-variables, school operation management ($r = .384$, $p = .000$), fiscal management ($r = .406$, $p = .000$), and learning climate management ($r = .344$, $p = .000$) all demonstrated statistically significant relationships with research practices. These results suggested that effective school leadership, financial oversight, and a conducive learning environment contributed to research engagement among school heads.

The implications of these findings emphasized the need for structured leadership training programs. School heads who managed operations efficiently were better positioned to implement research-based improvements. Moreover, fiscal management played a crucial role in funding research initiatives, while a well-maintained learning climate fostered a culture of inquiry and evidence-based decision-making.

This result was supported by the study of Kennedy (2016), who emphasized that school leaders with high managerial capabilities tended to adopt research-based practices to improve institutional outcomes. Furthermore, Gonzales et al. (2020) found that school heads with financial skill allocated resources effectively for research initiatives, enhancing their schools' research productivity. Similarly, Tamban and Maningas (2020) highlighted that school heads who created a positive learning climate encouraged teachers to participate in research endeavors.

E-fluency demonstrated a strong correlation with research practices ($r = .561$, $p = .000$), underscoring the critical role of digital literacy in facilitating research activities. The sub-variables awareness ($r = .438$, $p = .000$), self-efficacy ($r = .511$, $p = .000$), leadership ($r = .486$, $p = .000$), and affective aspects ($r = .502$, $p = .000$) all exhibited significant relationships with research practices.

These findings suggested that school heads who were fluent in utilizing digital tools, confident in their research abilities, and capable of leading research initiatives were more likely to engage in research practices.

The implications of these results highlighted the need for professional development programs focusing on digital literacy and technology integration. Enhancing awareness and self-efficacy among school heads empowered them to utilize digital tools effectively. Moreover, fostering leadership and affective engagement in research ensured that school heads could motivate their teachers and contribute meaningfully to educational research.

This result was supported by the study of Yazon (2019), who found that school heads with high levels of digital literacy were more likely to engage in research activities. Similarly, Gunduzalp (2021) emphasized that self-efficacy played a crucial role in research productivity, as confident school heads were more likely to undertake research projects. In addition, Jurane (2023) noted that leadership in digital research environments enhanced the overall research culture within schools.

Organizational culture had the highest correlation with research practices ($r = .585$, $p = .000$), indicating its pivotal role in fostering a research-oriented environment. The sub-variables managing change ($r = .505$, $p = .000$), achieving goals ($r = .504$, $p = .000$), coordinating teamwork ($r = .442$, $p = .000$), building a strong culture ($r = .593$, $p = .000$), and commitment to service ($r = .486$, $p = .000$) all showed significant correlations. These findings suggested that schools with adaptive leadership, goal-oriented structures, collaborative teamwork, and strong institutional cultures were more conducive to research engagement.

The implications of these findings highlighted the necessity of fostering a research-supportive culture within schools. School heads championed change management strategies that facilitated research adaptation. Achieving institutional goals aligned with research objectives, while teamwork coordination enhanced collaborative research efforts. A strong organizational culture rooted in commitment and service further ensured sustainable research practices. This result was supported by the study of Wong (2019), who emphasized that a well-established organizational culture significantly influenced school heads' research engagement. Moreover, Johnson and Christensen (2019) noted that schools that fostered teamwork and goal-oriented structures were more likely to engage in high-quality research. Fraenkel et al. (2019) further highlighted that managing change effectively was crucial for sustaining research initiatives within educational institutions.

Given that there are significant relationships between research practices and the independent variables, the null hypothesis which states that there is no significant relationship between research practices and the independent variables is rejected.

The research practices of school heads played a crucial role in enhancing the educational infrastructure within basic education institutions. Effective leadership in research not only emphasized systematic inquiry but also fostered an environment conducive to research engagement. School heads aligned with Department of Education policies, such as DepEd Order No. 26, s. 2021, and DepEd Order No. 16, s. 2017, to create research-friendly environments. By doing so, they empowered themselves and educators to explore innovative solutions and contribute to educational advancements.

The significance of research engagement was further reinforced by Hero (2023), who found that senior high school teachers possessed only moderate research skills, highlighting the need for supportive infrastructure. Manila et al. (2022) similarly noted that elementary teachers required supervision in conducting research, necessitating training programs led by school heads. Bonus (2024) identified workload and insufficient support as barriers to action research among master teachers, reinforcing the importance of institutional backing for research initiatives.

3.6. Variables that Best Predict Research Practices of School Heads

Table 6 presents the results of the stepwise multiple linear regression analysis, identifying the key predictors of school heads' research practices. The table highlights the unstandardized and standardized coefficients, along with the significance levels, to determine which variables significantly influence research practices among school heads.

Table 6. Predictor Variables of School Heads' Research Practices

INDICATORS	UNSTANDARDIZED COEFFICIENTS		STANDARDIZED COEFFICIENTS BETA	T	SIG.
	B	STD. ERROR			
(Constant)	.550	.204		2.700	.007
ORGANIZATIONAL CULTURE					
Building a Strong Culture	.367	.048	.359	7.710	.000
Achieving Goals	.120	.051	.112	2.366	.018
E-FLUENCY					
Self-Efficacy	.178	.047	.197	3.796	.000
Awareness	.096	.042	.113	2.273	.023
MANAGERIAL CAPABILITY					
School Operation Management	.098	.041	.092	2.374	.018
R = .675	R ² = .455		F = 81.348		Sig = .000

Three major variables emerged as significant predictors: organizational culture, e-fluency, and managerial capability. The first independent variable, organizational culture, demonstrated a strong predictive relationship with school heads' research practices. Among its sub-variables, building a strong culture had the highest impact ($\beta = .359$, $p = .000$), indicating that fostering a collaborative and research-driven environment enhances research practices. Achieving goals ($\beta = .112$, $p = .018$) also significantly predicted research practices, emphasizing that well-defined institutional objectives contribute to research productivity. These findings suggest that school heads who cultivate a strong organizational culture are more likely to encourage and sustain research initiatives within their institutions.

The results align with the study of Hero (2023), who highlighted the role of institutional culture in shaping teachers' research engagement. Similarly, Manila et al. (2022) found that a well-established research culture positively correlates with teachers' ability to complete research proposals independently. However, Bonus (2024) noted that without administrative support, even a strong research culture may not fully translate into research productivity. These findings underscore the necessity for school heads to actively nurture a research-oriented environment while providing concrete support mechanisms.

The second independent variable, e-fluency, also emerged as a significant predictor of research practices. Self-efficacy ($\beta = .197, p = .000$) had a substantial influence, indicating that school heads who possess confidence in their digital literacy are more likely to engage in research activities. Awareness ($\beta = .113, p = .023$) was also significant, suggesting that familiarity with digital research tools contributes to better research outcomes. This highlights the importance of equipping school heads with the necessary technological competencies to facilitate research productivity.

This result is supported by the study of Gunduzalp (2021), who found that digital proficiency enhances research engagement among educational leaders. Similarly, Oestar and Marzo (2022) emphasized the role of digital awareness in facilitating research collaborations and improving access to research resources. Conversely, Agatep and Villalobos (2020) pointed out that despite increased digital accessibility, some school heads still struggle with utilizing digital tools for research due to inadequate training. This reinforces the need for targeted digital literacy programs to bridge competency gaps.

The third independent variable, managerial capability, was also found to predict research practices, specifically through school operation management ($\beta = .092, p = .018$). This indicates that school heads with strong operational management skills are more capable of integrating research activities into institutional frameworks. Effective management ensures that research initiatives are well-supported and aligned with school priorities.

Johnson and Christensen (2019) support this finding, arguing that effective managerial skills significantly contribute to research productivity in educational institutions. Fraenkel et al. (2019) further emphasized that well-managed research programs lead to systematic inquiry and improved decision-making processes. However, Tamban and Maningas (2020) noted that managerial responsibilities often limit school heads' time for conducting research, which suggests that balancing administrative duties with research engagement remains a challenge.

From the foregoing, the equation useful in predicting the percentage of research practices (Y) as indicated by F-value (81.348) with its corresponding probability value (.000) is significant at ($p < .01$). This model is illustrated in the equation:

$$Y = 0.550 + 0.367x_1 + 0.120x_2 + 0.178x_3 + 0.096x_4 + 0.098x_5$$

Where:

Y = Research Practices

X₁ = Building a Strong Culture

X₂ = Achieving Goals

X₃ = Self-Efficacy

X₄ = Awareness

X₅ = School Operation Management

The regression equation means that if there is a unit increase in any of the predictor variables, research practices among school heads will increase accordingly based on the respective coefficient values. Specifically, a unit increase in Building a Strong Culture (X₁) improves research practices by 0.367, making it the strongest predictor. A unit increase in Achieving Goals (X₂) raises research practices by 0.120, while Self-Efficacy (X₃) increases it by 0.178, indicating that confidence in research abilities enhances engagement. Similarly, a unit increase in Awareness (X₄) results in a 0.096 increase, reflecting the role of research knowledge in practice. Lastly, a unit increase in School Operation Management (X₅) leads to a 0.098 rise, showing that effective management supports research initiatives. Overall, improving these factors enhances research practices among school heads.

The overall model demonstrated a substantial predictive power with an R-value of .675 and an R-squared value of .455, indicating that 45.5% of the variance in research practices can be explained by the identified factors. Thus, the null hypothesis which states that there is no variable, singly or in combination that best predicts the research practices of school heads is rejected.

Research provides substantial evidence that supports digital assessment and evaluation as a critical factor in enhancing the research capabilities of educational institutions, a perspective that is particularly relevant for school heads. Cumhur et al. (2021) asserted that digital assessment and evaluation are vital for improving research practices within schools, and school heads play an essential role in facilitating these initiatives. By advocating for the adoption of digital assessment tools, school heads can enhance their own capacity to collect, analyze, and utilize data effectively, thereby influencing the overall research culture of their schools. The Department of Education (2021) also emphasized that school heads who utilize digital assessment methods can significantly improve their own decision-making processes and strategic planning. By integrating educational technologies into their research practices, school heads not only enhance their digital literacy but also set a precedent for fostering an environment that encourages data-driven decision making.

Moreover, Gasanova et al. (2021) highlighted that the implementation of digital assessment fosters a culture of reflection among school heads regarding their research practices. By reflecting on their knowledge and attitudes toward technology, school heads can promote continuous improvement and innovation at the institutional level. This proactive approach to embracing digital tools positions school heads as pivotal figures in driving their schools toward advanced research methodologies, ultimately contributing to better educational outcomes and a stronger research-oriented culture within their institutions.

IV. CONCLUSIONS AND RECOMMENDATIONS

4.1. Conclusions

Based on the findings of the study, the following conclusions are drawn:

The school heads were highly capable in all three aspects of managerial capability - school operation management, fiscal management, and learning climate management, which plays a crucial role in the overall effectiveness of school leadership. Therefore, they manage and support the smooth operation of schools, allocate resources efficiently, create a positive learning environment, and uphold high standards of institutional governance.

The results also demonstrate that school heads were generally fluent particularly in self-efficacy, leadership, and affective dimensions of e-fluency. This digital fluency is essential in modern school leadership, enabling school heads to integrate technology effectively in their administrative and instructional functions. While they exhibit strong confidence and leadership in digital engagement, there remains a need for further enhancement in awareness-related competencies to maximize the potential of digital tools in educational leadership and research practices.

Organizational culture was found to be another critical factor in fostering a research-driven environment among school heads. With an overall highly favorable rating, school heads demonstrate strong commitment to service, adaptability to change, teamwork coordination, and goal achievement. These qualities establish a positive institutional culture that encourages collaboration and continuous improvement. A well-established organizational culture enhances research practices by fostering an environment that values teamwork, goal-oriented leadership, and a shared vision for academic excellence.

School heads also exhibit strong engagement in research practices, as they generally practiced collaborative research efforts and strengthened their personal interest in research activities. However, areas such as research infrastructure, funding opportunities, and research capability require additional support to further enhance research participation. Encouraging a more robust research culture through improved access to funding and infrastructure, as well as improved research capability can help sustain and increase research practices among school heads.

The study also highlights the significant relationships between managerial capability, e-fluency, and organizational culture with research practices. Statistical analyses indicate that organizational culture is the strongest correlate of research practices, followed by e-fluency and managerial capability. The strong correlations between these variables suggest that school heads who cultivate a highly favorable organizational culture and demonstrate high e-fluency are more likely to engage in research practices. This finding underscores the importance of leadership development programs that enhance digital fluency and institutional culture to promote research practices.

Furthermore, the regression analysis showed that organizational culture, e-fluency, and managerial capability collectively explain a significant portion of the variance in research practices. This suggests that these factors work together in shaping research practices among school heads. Organizational culture, particularly in building a strong culture and achieving institutional goals, has the most substantial impact on research practices. E-fluency, specifically self-efficacy and awareness, also plays a crucial role, indicating that confidence in digital engagement and knowledge dissemination influences research practices. Managerial capability, particularly school operation management, serves as a supportive factor in sustaining research practices.

4.2. Recommendations

Based on the findings and conclusions, the following recommendations are proposed to enhance managerial capability, e-fluency, organizational culture, and research practices among school heads:

For the DepEd Regional Officials, it is recommended to develop and implement policies that integrate research-based decision-making in school leadership. Providing continuous training on managerial capability, digital literacy, and research methodologies can enhance the effectiveness of school heads in fostering a research-driven environment.

For the Schools Division Superintendents and Public Schools District Supervisors, targeted professional development programs should be designed to improve school heads' competencies in managerial leadership, e-fluency, and research practices. Strengthening institutional support systems and creating incentives for research participation can further encourage school heads to conduct meaningful research.

For school heads, allocating sufficient resources for research-related activities is essential. Schools should establish research committees or mentorship programs to guide school heads in conducting quality research. Additionally, integrating research-based initiatives into school improvement plans (SIPs) can reinforce the importance of research in decision-making.

For stakeholders, including policymakers, parents, and community members, it is recommended to support school research initiatives through funding, collaboration, and participation. Strengthening partnerships with academic institutions and research organizations can provide additional resources and expertise to improve research engagement among school heads.

For learners, school heads should ensure that research findings are utilized to enhance teaching methodologies and school policies. Encouraging a culture of inquiry-based learning and innovation within schools will contribute to improved student outcomes and academic growth.

For future researchers, it is recommended to explore further the impact of managerial capability, e-fluency, and organizational culture on research practices in various educational settings. Expanding the scope of research to include other leadership variables and using longitudinal studies may provide deeper insights into the effectiveness of research-driven leadership.

Lastly, for higher education institutions offering graduate degree programs in Educational Administration, curriculum enhancements should be made to emphasize research leadership, digital literacy, and evidence-based decision-making. Strengthening partnerships with DepEd and school heads can bridge the gap between theory and practice, ensuring that future educational leaders are equipped with the necessary skills to promote a research-driven school culture.

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