

Resource Generation Capability, Organizational Learning, and Data-Driven Decision-Making Ability on Strategic Foresight of School Leaders

Ronie A. Nietes¹; James L. Paglinawan²

¹School Head, Department of Education, Division of Valencia City, Valencia City, Bukidnon, Philippines

²Professor, College of Education, Central Mindanao University, Musauan, Maramag, Bukidnon, Philippines

Publication Date: 2026/05/09

Abstract: This study examined the influence of resource-generation capability, organizational learning, and data-driven decision-making ability on the strategic foresight of school leaders in Region 10 during School Year 2025-2026. Employing a quantitative, non-experimental research design utilizing correlation analysis, regression analysis, and structural equation modeling.

Results revealed consistently high levels across all variables. Resource generation capability was rated high, with staff management for resource mobilization as the strongest indicator. Organizational learning was also high, driven primarily by dialogue as a mechanism for knowledge sharing and collective reflection. Data-driven decision-making was rated high, with data-use purpose identified as the leading indicator. Strategic foresight obtained the highest overall rating among all variables, with implementing strategic school pathways as the top-rated dimension. Correlation analysis demonstrated that all three independent variables and their respective indicators were significantly and positively correlated with strategic foresight, with data-driven decision-making ability exhibiting the strongest association.

Regression analysis identified eight significant predictors that collectively explained a substantial proportion of the variance in strategic foresight, with data usage purpose and data literacy emerging as the most powerful predictors. The best-fitting structural model confirmed that the strategic foresight of school leaders is best anchored in data-driven decision-making ability, with this as its dominant predictor, complemented by resource generation capability and organizational learning, thereby offering a validated framework for educational policymakers to prioritize data literacy, technological infrastructure, and evidence-based management in leadership development programs.

Keywords: Resource Generation Capability, Organizational Learning, Data-Driven Decision-Making Ability and Strategic Foresight.

How to Cite: Ronie A. Nietes; James L. Paglinawan (2026) Resource Generation Capability, Organizational Learning, and Data-Driven Decision-Making Ability on Strategic Foresight of School Leaders. *International Journal of Innovative Science and Research Technology*, 11(4), 3965-3975. <https://doi.org/10.38124/ijisrt/26apr2038>

I. INTRODUCTION

Philippine basic education continues to face persistent leadership challenges, as school leaders are increasingly expected to lead reform initiatives, ensure accountability, and manage digital and crisis-related demands despite limited time, staffing, and institutional support. Recent studies highlight systemic constraints such as weak instructional leadership, excessive administrative workload, limited professional development opportunities, and inadequate digital and crisis leadership capacities. These conditions often compel school leaders to prioritize reactive problem-solving over long-term strategic planning (Said & Aclao, 2026). While research on school planning underscores the

importance of stakeholder participation and data-informed decision-making, these practices remain inconsistently implemented across Philippine schools [1](Biñas et al., 2023).

A critical factor underlying these constraints is Resource Generation Capability. Strategic foresight requires sufficient human, financial, and technological resources to support long-range planning and anticipatory leadership. However, chronic underfunding, staffing shortages, and weak systemic support structures within the Department of Education (DepEd)—including the continued operation of schools without plantilla principals—limit leaders' ability to engage in strategic thinking. [2] Bantilan et al. (2023) note that these

resource limitations also reduce stakeholder involvement in strategic planning, weakening environmental scanning and scenario development processes that are vital to effective foresight. As a result, many school leaders remain confined to managing immediate operational demands rather than preparing for future educational challenges.

Organizational learning serves as a key mechanism through which individual leadership capacities are transformed into collective strategic foresight. It enables schools to systematically generate, share, and apply knowledge for future-oriented decision-making, establishes a strong link between foresight competence and strategic thinking, with organizational learning facilitating this relationship at the institutional level. More recent studies emphasize that foresight practices such as scenario planning foster innovation, systems thinking, and strategic agility [3] (Lawrence Poperwi et al., 2025). However, the dominant hierarchical and top-down management culture within DepEd constrains collaborative learning processes. NQESH performance data reveal that a significant proportion of school leaders struggle with team development, limiting distributed leadership and shared sense-making necessary for building anticipatory capacity.

Data-Driven Decision-Making (DDDM) further strengthens strategic foresight by equipping leaders with analytical tools for trend identification, predictive planning, and evidence-based scenario building. [4] Magdato et al. (2025) demonstrate that data literacy is a significant predictor of strategic foresight among school leaders. Although data infrastructure and data-use purposes are relatively strong, a weak data-usage culture persists, particularly in interpreting and applying data for forward-looking decisions. This challenge is reflected in NQESH results and is exacerbated by digital divide issues affecting remote and underserved areas.

Strategic foresight, therefore, emerges as a core leadership competence that enables school leaders to anticipate change, construct plausible futures, and initiate adaptive responses before challenges escalate into crises. It shifts leadership from compliance-driven administration toward anticipatory governance and purposeful school development [5] (Baskarada et al., 2016). Evidence from Philippine studies suggests that resource generation capability, organizational learning, and data-driven decision-making are not isolated abilities but mutually reinforcing conditions for effective strategic foresight. This study addresses a critical gap by examining how these three capabilities jointly influence strategic foresight among DepEd school leaders, with implications for leadership development, school planning, and future-ready governance in basic education.

II. OBJECTIVES OF THE STUDY

- *Describe the Level of the Resource Generation Capability on Strategic Foresight of School Leaders in Terms of:*
 - financial management;
 - management of staff;
 - innovation and networking;
 - leveraging emerging opportunities.
- *Assess the Level of Organizational Learning on Strategic Foresight of School Leaders in Terms of:*
 - school leadership;
 - dialogue;
 - participative decision-making;
 - demonstration of mission and goals;
 - managerial commitment; and
 - openness and experimentation.
- *Examine the Level of the Data-Driven Decision-Making Ability on Strategic Foresight of School Leaders in Terms of:*
 - technological infrastructure and hardware;
 - data usage culture;
 - data usage purpose; and
 - data literacy.
- *Ascertain the Level of the Strategic Foresight of School Leaders in Terms of:*
 - framing the educational domain;
 - scanning the educational landscape;
 - forecasting future school scenarios;
 - envisioning the school's future; and
 - implementing the strategic school pathways.
- *Evaluate the Significant Relationship Between the Strategic Foresight of School Leaders with:*
 - resource generation management;
 - organizational learning, and
 - data-driven decision-making ability.
- *Identify the Variables, Singly or in Combination, that Best Predict School Leaders' Strategic Foresight.*

III. METHODOLOGY

➤ *Research Design*

The study employed a descriptive-correlational design and causal-comparative research methods in analyzing quantitative data. It used a descriptive approach to examine Resource Generation Capability, Organizational Learning, and Data-Driven Decision-Making Ability in the context of School Leaders' Strategic Foresight. Pearson's Product-Moment Correlation assessed relationships among variables, while multiple regression analysis identified the variables influencing school leaders' strategic foresight.

➤ *Research Setting*

This study was conducted in the Northern Mindanao region X, specifically targeting various educational divisions, including Lanao Del Norte, Bukidnon, and Misamis Oriental. The selected cities for this research include Malaybalay City, Cagayan de Oro City, El Salvador City, Iligan City, and Valencia City. This geographic diversity allows for a comprehensive examination of the strategic foresight of school leaders across different contexts within the region.

The Northern Mindanao region is known for its unique cultural diversity and socioeconomic conditions, which can significantly affect educational practices and leadership dynamics. Conducting the study in this area provides an opportunity to explore how local political, social, and economic factors effectively influence school leaders' strategic foresight.

Understanding the geographical and cultural landscape is crucial for interpreting the findings and developing relevant recommendations that can be applied to enhance strategic foresight in schools across this region. This contextual awareness ensures that the study remains grounded in the realities faced by educational leaders, making the findings more applicable and impactful in promoting effective strategies for predicting the school's future and improvement. Moreover, Figure 6 presents a map of the Northern Mindanao Region, highlighting the specific locations of interest and providing visual context for the study.

➤ *Participants of the Study*

In this study, a total of 14 divisions were considered for sampling, from which 8 divisions were randomly selected to optimize time and resource use. The chosen divisions included Bukidnon, Cagayan de Oro City, El Salvador City, Misamis Oriental, Iligan City, Lanao Del Norte, Malaybalay City, and Valencia City. The specific respondents from these divisions were selected using the fishbowl method. This thorough sampling strategy aimed to improve the reliability and applicability of the study's findings, in line with the methodological requirements for structural equation modeling.

➤ *Sampling Procedure*

This study implemented a meticulous sampling procedure to accurately represent school leaders across Region 10. The sampling approach combined stratified and simple random sampling techniques. First, the population of school leaders was organized into separate strata according to their divisions, ensuring proportional representation of each group. This approach guaranteed that all divisions were sufficiently represented within the sample. Individual respondents were then randomly selected from each division using the fishbowl method, which ensured equal chances of inclusion and reduced selection bias.

➤ *Data Gathering Procedure*

A formal request for the data collection was secured from the Institutional Ethics Review Committee, then from the Regional Director, Schools Division Superintendents, and Public Schools District Supervisors to allow the researcher to

administer the survey questionnaire through a letter signed by the dissertation adviser and the Dean of the Graduate School to distribute the survey questionnaire. Voluntary participation was emphasized, and the respondents were assured of the confidentiality of their responses. After the approval, the researcher personally visited schools to distribute and retrieve the questionnaires. Pilot testing of the research instrument was conducted in Region XI – Division of Davao City, with the necessary approvals secured from the schools to ensure compliance with research protocols.

As an ethical procedure, the researchers distributed an ethics statement to the individuals who were involved in the study. The letter mentioned all the ethical practices observed throughout by the researchers. The distribution of the ethical statement was carried out personally by the researchers, along with the letter of permission and the approval note.

On the day of the administration, the respondents were given sufficient time to complete the questionnaires to ensure valid and reliable responses. Upon retrieval of the questionnaires, the data were gathered, encoded, and tallied, and subjected to data analysis, discussion, and interpretation.

➤ *Data Analysis*

Descriptive statistics, including the mean, frequency, standard deviation, and percentage, were used to determine the extent of Resource Generation Capability, Organizational Learning, and Data-Driven Decision-Making Ability in the Strategic Foresight of School Leaders. The Pearson Product-Moment Correlation was used to assess relationships among variables. At the same time, Multiple Linear Regression was used to identify the variable that best predicted the strategic foresight of school leaders.

➤ *Ethical Considerations*

Ethical considerations were rigorously upheld throughout the research process, guided by established norms in research ethics, a subfield of applied ethics that regulates researchers' conduct to protect participants' dignity and ensure responsible dissemination of findings. The researcher obtained approval from the Research Review Committee (REC) of Central Mindanao University's Research Department, along with consents from relevant authorities. Respondents, comprising school administrators from public elementary and secondary schools across the seven divisions of Region 10, were selected via random sampling.

To safeguard ethical treatment, the following measures were implemented. Respondents received a sign pen and refrigerator magnet as a token of appreciation for their time. The survey questionnaire was designed for completion in 30 minutes to minimize inconvenience. Participants were briefed on the study's objectives prior to involvement, enabling informed consent.

Questionnaires were personally administered to uphold confidentiality. Completed forms were collected and stored securely in an Excel file on a password-protected computer accessible only to the researcher. An alternative mode of administering the questionnaire was employed through an

online platform with the aid of Google Forms. The study examined resource generation capability, organizational learning, and data-driven decision-making ability on the strategic foresight of school leaders, with ethical standards maintained at every stage.

This study was conducted in accordance with recognized ethical standards, including obtaining informed consent from all the respondents before the collection of data in the Northern Mindanao region. Participation in this study was entirely voluntary, and respondents were assured of the right to withdraw from the study at any point without incurring penalty or disadvantage. The privacy and confidentiality of the research respondents were upheld through rigorous data anonymization and secure storage of research materials. [8] Ali and Okoro (2025).

IV. RESULTS AND DISCUSSION

➤ Resource Generation Capability

Table 1 presents the respondents' assessments on resource allocation capability. The highest indicators were "Management of Staff for Resource Mobilization" (MEAN =4.46) and "Financial Management for Resource Generation" (MEAN =4.43), both of which were qualitatively interpreted as High Level. The two lowest indicators were "Innovation and Networking for Resource Generation" (MEAN =4.40) and "Leveraging Emerging Opportunities for Resource Generation" (MEAN =4.36), which were also interpreted as High Level. This shows that all indicators fall within the Agree range, reflecting a consistently high level of capability.

Table 1. Resource Allocation Capability of School Leaders

Indicators	Mean	Descriptive Rating	Qualitative Interpretation
Management of Staff for Resource Mobilization	4.46	Agree	High Level
Financial Management for Resource Generation	4.43	Agree	High Level
Innovation and Networking for Resource Generation	4.40	Agree	High Level
Leveraging Emerging Opportunities for Resource Generation	4.36	Agree	High Level
Overall Mean	4.41	Agree	High Level

LEGEND:	DESCRIPTIVE RATING	QUALITATIVE INTERPRETATION
RANGE		
4.51-5.0	Strongly Agree	Very High Level
3.51-4.50	Agree	High Level
2.51-3.50	Moderately Agree	Moderate Level
1.51-2.50	Disagree	Low Level
1.0-1.50	Strongly Disagree	Very Low Level

The results show a balanced pattern across all indicators, as all means fall within the High Level qualitative interpretation. School leaders are perceived as capable in managing staff, finances, innovation, and opportunities.

However, none of the indicators reached the Very High Level, suggesting that while practices are effective, they are not yet exemplary. The slightly lower mean for leveraging emerging opportunities indicates a relative weakness in adapting to new or external resource possibilities.

Since "Leveraging Emerging Opportunities for Resource Generation" obtained the lowest mean but remains at a High Level, school leaders may benefit from targeted training on strategic partnerships, external funding, and digital opportunities. Strengthening skills in environmental scanning, innovation adoption, and stakeholder collaboration can elevate this area to a Very High Level, thereby improving overall resource sustainability.

[6] Hernández (2024) found that staff and financial management were practiced at a High Level among school

leaders. [7] Ngare (2023) emphasized that proactive leadership enhances effective resource mobilization. [8] Nachinguru and Mwila (2023) also reported that strong financial management improves school performance, while limited opportunity leveraging constrains growth, aligning with the present High Level but improvable results.

➤ Organizational Learning

Table 2 presents the organizational learning among school leaders, highlighting their competence across various indicators. The highest mean is "Dialogue" at 4.62, descriptively rated as Agree and qualitatively interpreted as High Level. This is followed by "Demonstration of mission and goals" with a mean of 4.51, also rated Agree with a High Level qualitative interpretation. These results show strong communication and clear alignment of vision among school leaders. On the other hand, the lowest means are "School Leadership" and "Participative Decision Making", both with a mean of 4.40, descriptively rated as Agree and qualitatively interpreted as High Level, indicating competence but with room for improvement.

Table 2. Organizational Learning among School Leaders

Indicators	Mean	Descriptive Rating	Qualitative Interpretation
School Leadership	4.40	Agree	High Level
Dialogue	4.62	Agree	High Level
Participative Decision Making	4.40	Agree	High Level
Demonstration of mission and goals	4.51	Agree	High Level
Managerial commitment	4.41	Agree	High Level
Openness and experimentation	4.43	Agree	High Level
Overall Mean	4.46	Agree	High Level

LEGEND:	DESCRIPTIVE RATING	QUALITATIVE INTERPRETATION
RANGE		
4.51-5.0	Strongly Agree	Very High Level
3.51-4.50	Agree	High Level
2.51-3.50	Neither	Moderate Level
1.51-2.50	Disagree	Low Level
1.0-1.50	Strongly Disagree	Very Low Level

The findings indicate that school leaders demonstrate a consistently high level of organizational learning across all indicators. Strong dialogue suggests an environment where open communication, collaboration, and shared learning are practiced. A clear demonstration of mission and goals reflects a unified direction and purpose in school operations. Although School Leadership and Participative Decision Making obtained the lowest means, they still fall under the High Level interpretation. This suggests that leadership practices and shared decision-making are present, but not as strongly as communication and vision alignment.

The results imply that schools are functioning as effective learning organizations, yet improvement is still possible. To enhance the lowest indicators, school leaders may strengthen School Leadership by engaging in continuous leadership training, coaching, and mentoring programs. Participative decision-making can be improved by increasing teacher involvement in planning and policy formulation. Regular feedback mechanisms, collaborative committees, and shared governance structures may help raise these indicators from High Level toward Very High Level, ensuring more inclusive and empowered school environments.

[9] Kools et al. (2020) emphasized dialogue and shared vision as key dimensions of schools as learning organizations, consistent with the high-level qualitative interpretation of Dialogue and mission clarity. [10] Chin et al. (2022) found that dialogue and participative decision-making significantly predict organizational learning across educational settings.

In the Philippine context, [11] Caballero (2021) reported that organizational learning capability, particularly dialogue and openness, positively influences staff commitment, reinforcing the importance of strengthening lower but still high-rated leadership indicators.

Philippine studies echo these patterns in DepEd contexts. [11] Caballero (2021) found that organizational learning capability, led by experimentation/openness and dialogue, predicts commitment among private school library staff, aligning with the table's top means. [12] Moquia and Melchor (2024) reported extensive strategic leadership and organizational learning in Panabo City public secondary schools, with significant correlations supporting high leadership and participation ratings.

➤ *Data-Driven Decision-Making Ability*

Table 3 presents the Data-Driven Decision-Making Ability of school leaders. The indicator with the highest mean was “Data Usage Purpose” with a mean of 4.49, verbally rated as Often and qualitatively interpreted as Competency Equipped. This indicated that school leaders frequently understood why data was collected and how it was used for decision-making. The lowest mean was recorded by “Data Usage Culture” with a mean of 4.35, also verbally rated as Often and qualitatively interpreted as Competency Equipped. This suggested that although data use was common, embedding data-driven practices into the daily decision-making culture was comparatively less strong among school leaders

Table 3. Summary of Data-Driven Decision-Making Ability

Indicators	Mean	Descriptive Rating	Qualitative Interpretation
Technological Infrastructure and Hardware	4.45	Often	Competency Equipped
Data Usage Culture	4.35	Often	Competency Equipped
Data Usage Purpose	4.49	Often	Competency Equipped
Data Literacy	4.38	Often	Competency Equipped
Overall Mean	4.42	Often	Competency Equipped

LEGEND:		
RANGE	DESCRIPTIVE RATING	QUALITATIVE INTERPRETATION
4.51-5.0	Always	Exceptionally Proficient
3.51-4.50	Often	Competency Equipped
2.51-3.50	Sometimes	Moderately Capable
1.51-2.50	Seldom	Minimal Skilled
1.0-1.50	Never	Not Capable

The results showed that school leaders generally demonstrated a consistent level of competence in data-driven decision-making. The high mean for Data Usage Purpose suggested clarity in aligning data with organizational and instructional decisions. Meanwhile, the lower mean for Data Usage Culture indicated that data use was not yet fully embedded in collective norms and routines. Although Data Literacy also remained within the Competency Equipped range, it reflected that leaders possessed adequate but not exceptional skills in interpreting and applying data. Overall, the findings showed balanced capability, yet they revealed uneven development across cultural and skill-based dimensions of data use.

The findings implied that strengthening data-driven decision-making required more than technology and clear goals. To improve the lowest mean, school leaders could promote shared data discussions, collaborative data review sessions, and regular reflection meetings. Providing continuous professional development focused on practical data use and interpretation could also help. Encouraging leaders to model consistent data use in everyday decisions might foster stronger data usage culture. Establishing school policies that reward evidence-based decisions could further support cultural change. These actions could help move the lowest indicator from basic competence toward more sustained and embedded data-driven practices.

The findings were supported by recent studies emphasizing the importance of culture and skills in data-driven decision-making. [13] Szukits and Móricz (2023) found that analytical culture depended on leadership support and daily data-use behaviors rather than technology alone. [14] Dimaano (2024) reported that higher education leaders in the Philippines showed adequate data literacy, but limitations existed in translating data into optimal decisions. Similarly, [15] Ortiz (2025) revealed that while school leaders frequently used data collaboratively, gaps remained in fully integrating data analysis into instructional improvement. These studies aligned with the present results, where school leaders were Competency Equipped but had not yet reached an exceptionally proficient level of data-driven practice.

➤ *Strategic Foresight*

Table 4 presents the overall strategic foresight of school leaders, summarizing their competence in emerging challenges in dynamic educational landscapes. The highest mean was for “Implementing the Strategic School Pathways. As a school leader,” with a mean of 4.59, verbally rated as “Always” and qualitatively interpreted as “Exceptionally Demonstrated.” This showed that school leaders consistently translated strategic plans into action. In contrast, the lowest mean was recorded for “Scanning the Educational Landscape. As a school leader,” with a mean of 4.49, verbally rated as “Often” and qualitatively interpreted as “Highly Demonstrated.” Although still strong, this indicator showed comparatively less consistent practice than the others.

Table 4. Summary on Strategic Foresight of school leaders

Indicators	Mean	Descriptive Rating	Qualitative Interpretation
Implementing the Strategic School Pathways. As a school leader,	4.59	Always	Exceptionally Demonstrated
Envisioning the School Future. As a school leader,	4.55	Always	Exceptionally Demonstrated
Framing the Educational Domain. As a school leader,	4.53	Always	Exceptionally Demonstrated
Forecasting Future School Scenarios. As a school leader,	4.51	Always	Exceptionally Demonstrated
Scanning the Educational Landscape. As a school leader,	4.49	Often	Highly Demonstrated
Overall Mean	4.53	Always	Exceptionally Demonstrated

LEGEND:		
RANGE	DESCRIPTIVE RATING	QUALITATIVE INTERPRETATION
4.51-5.0	Always	Exceptionally Demonstrated
3.51-4.50	Often	Highly Demonstrated
2.51-3.50	Sometimes	Moderately Demonstrated
1.51-2.50	Seldom	Minimally Demonstrated
1.0-1.50	Never	Not Demonstrated

The results indicated that school leaders consistently demonstrated a high level of strategic foresight, as reflected by the overall mean of 4.53, interpreted as “Exceptionally Demonstrated.” Strengths were evident in internal leadership functions such as implementing strategies and envisioning the school future. However, external-oriented practices, particularly scanning the educational landscape, were practiced less frequently. This suggested that school leaders focused more on internal planning and execution than on systematically monitoring external trends, policies, and innovations affecting education.

The findings implied that while school leaders were strategically competent, stronger emphasis on environmental scanning was needed. To improve the lowest mean, school leaders could be supported through continuous professional development on trend analysis, horizon scanning, and futures thinking. Providing access to data dashboards, research briefings, and collaborative networks could also help leaders stay informed about emerging educational issues. Strengthening this practice could enhance anticipation of change and sustain strategic decision-making.

[5] Magdato et al. (2025) found that strong strategic foresight among school leaders was linked to effective planning and implementation. [16] Castillo (2025) emphasized that envisioning and anticipating the future were core elements of strategic leadership, though still underdeveloped in practice. [4] Poperwi et al. (2025) highlighted that horizon scanning was essential for adaptability but often underutilized. professional development significantly enhanced foresight skills among school leaders.

➤ *Correlation of the Strategic Foresight of School Leaders and the Independent Variables*

Table 5 presents the correlation coefficients indicate highly significant positive relationships between all leadership practices and strategic foresight ($p < .01$). These results clearly demonstrate that strategic foresight is not an isolated leadership characteristic but is highly significantly reinforced by leaders’ abilities to generate and manage resources, cultivate organizational learning, and employ data strategically. The findings show that analytically grounded and evidence-based leadership practices maintain highly significant relationships with strategic foresight.

Table 5. Correlation Between the Dependent and Independent Variables

Variables	CORRELATION COEFFICIENT r	P-VALUE
Resource Allocation Capability	.579	.000**
Financial Management for Resource Generation	.485	.000**
Management of Staff for Resource Mobilization	.532	.000**
Innovation and Networking for Resource Generation	.516	.000**
Leveraging Emerging Opportunities for Resource Generation	.538	.000**
Organizational Learning	.595	.000**
School Leadership	.461	.000**
Dialogue	.463	.000**
Participative Decision Making	.368	.000**
Demonstration of mission and goals	.543	.000**
Managerial commitment	.501	.000**
Openness and experimentation	.555	.000**
Data-Driven Decision-Making Ability	.695	.000**
Technological Infrastructure and Hardware	.537	.000**
Data Usage Culture	.552	.000**
Data Usage Purpose	.615	.000**
Data Literacy	.578	.000**

*** $p < 0.01$, NS = Not Significant

These results indicate that improvements in leadership practices related to resources, learning, and data use are associated with stronger strategic foresight among school leaders.

Resource generation capability shows highly significant correlations with strategic foresight across all its sub-dimensions ($r = .485$ to $r = .579$, $p < .01$). These findings indicate that school leaders who demonstrate strong capacities in financial management, staff mobilization, innovation, networking, and leveraging emerging opportunities possess highly significant advantages in anticipating and preparing for future challenges. Strategic foresight is highly significantly enhanced when leaders can

secure, allocate, and optimize resources in alignment with long-term institutional goals. From an organizational behavior perspective, effective resource mobilization promotes resilience and adaptability, enabling leaders to respond proactively to environmental changes. Innovation and networking further reinforce highly significant future-oriented and anticipatory decision making.

Organizational learning exhibits a highly significant positive relationship with strategic foresight ($r = .595$, $p < .01$), emphasizing the essential role of learning-centered school cultures in fostering future-oriented leadership. Sub-dimensions such as dialogue, participative decision making, openness and experimentation, and managerial

commitment all demonstrate highly significant positive associations, showing that strategic foresight develops in environments where collaboration, reflection, and continuous improvement are systematically embedded. These dimensions align with cultural intelligence, as leaders must interpret diverse perspectives while scanning for emerging trends. Organizational learning also strengthens quality assurance by institutionalizing evidence-based reflection and alignment with future standards, enabling schools to highly significantly influence change rather than merely respond to it.

Data-Driven Decision-Making Ability shows the most highly significant relationship with strategic foresight ($r = .695, p < .01$), underscoring its central role in anticipatory and strategic leadership. All sub-dimensions—including data usage purpose, data usage culture, data literacy, and technological infrastructure demonstrate highly significant positive relationships, indicating that systematic and purposeful data use substantially strengthens leaders’ ability to anticipate trends and manage uncertainty. When leaders align data use with institutional goals and promote an evidence-based culture, decision-making shifts toward highly significantly predictive and proactive approaches. From an innovation perspective, data functions as a strategic asset for scenario analysis and institutional experimentation, thereby highly significantly reinforcing strategic foresight in complex educational environments.

Given that all independent variables and their corresponding sub-dimensions exhibit highly significant correlations with strategic foresight at $p < .01$, the null hypothesis stating that there is no significant relationship between school leaders’ strategic foresight and resource generation capability, organizational learning, and data-driven decision-making ability is rejected.

The correlation results presented in Table 5 reveal a consistent pattern of highly significant relationships. Strategic foresight among school leaders is most highly significantly associated with data-driven decision-making ability, followed by organizational learning and resource generation capability. Although participative decision making and dialogue display comparatively smaller coefficients, their high statistical significance confirms that they contribute meaningfully to the development of strategic foresight, potentially through mediating factors such as school climate, leadership style, and stakeholder. The findings confirm that strategic foresight is a multidimensional leadership capacity that is highly significantly shaped by analytical competence, learning orientation, cultural intelligence, and innovation-driven resource practices. Strengthening these areas holistically can therefore highly significantly enhance leaders’ ability to anticipate change, guide sustainable development, and ensure long-term institutional success.

➤ *Variables that Best Predict the Strategic Foresight of School Leaders in Region 1*

Table 6 presents the regression analysis result identifying key predictors of strategic foresight among school leaders. The result shows that among the eight predictors, data usage purpose emerged as the strongest predictor of strategic foresight ($\beta = .250, t = 7.254, p < .001$). This indicates that school leaders who possess a clear and intentional understanding of why data are collected and used whether for instructional improvement, accountability, or long-term planning are significantly more likely to demonstrate higher levels of strategic foresight. The strength of this predictor underscores the idea that purposeful data use provides direction and coherence to leadership decision-making and serves as a foundation for anticipating future challenges and opportunities.

Table 6: Regression Analysis Between the Independent and Dependent Variables

Model 8	UNSTANDARDIZED COEFFICIENTS		STANDARDIZED COEFFICIENTS		T	Sig.
	B	STD ERROR	BETA			
(Constant)	.344	.153			2.253	.025
Data Usage Purpose	.220	.030	.250		7.254	.000
Data Literacy	.170	.026	.215		6.428	.000
Technological Infrastructure and Hardware	.078	.033	.087		2.374	.018
Data Use Culture	.067	.032	.081		2.120	.034
Innovation and Networking for Resource Generation	.135	.031	.146		4.310	.000
Demonstration of Mission and Goals	.097	.043	.094		2.273	.023
Openness and Experimentation	.098	.039	.099		2.511	.012
Dialogue	.076	.037	.072		2.060	.040
$R = .764^h$ $R^2 = .583$	$F = 108.715$				$P = 0.000^i$	

The regression equation derived from the unstandardized coefficients is:

$$Y1=0.344 + 0.220X1 + 0.170X2 + 0.078X3 + 0.067X4 + 0.135X5 + 0.097X6 + 0.098X7 + 0.076X8$$

Where:

Y1 = Strategic Foresight

X1 = Data Usage Purpose

X2 = Data Literacy

X3 = Technological Infrastructure and Hardware

X4 = Data Use Culture

X5 = Innovation and Networking for Resource Generation

X6 = Demonstration of Mission and Goals

X7 = Openness and Experimentation

X8 = Dialogue

The model yielded a coefficient of determination of $R^2 = .583$, meaning that 58.3% of the variance in strategic foresight is explained by the combined effect of the eight predictors. In social science research, this represents a large effect size, surpassing Cohen's (1988) benchmark of .26 for a strong model. This substantial explanatory power indicates that the selected predictors collectively offer a robust framework for understanding strategic foresight among school leaders. The remaining 41.7% of unexplained variance suggests that other factors such as leadership style, policy context, organizational climate, or resource availability may also play important roles.

The null hypothesis stating that the independent variables do not significantly predict strategic foresight is rejected. The overall regression model was statistically significant ($F = 108.715$, $p < .001$), and all eight predictors demonstrated significant t-values ($p < .05$). These results confirm that the predictors, both individually and collectively, have meaningful explanatory power in predicting the strategic foresight of school leaders.

The findings are strongly supported by the theoretical and empirical literature summarized in the provided thread. The primacy of Data Usage Purpose and Data Literacy aligns with [17] Mandinach and Gummer's (2016) framework of purposeful and skilled data use as a driver of effective decision-making. The significance of Innovation and Networking supports the view of schools as interconnected learning institutions embedded within broader innovation ecosystems. Human-centered variables such as openness, shared vision, and dialogue outperform purely technological factors, reinforcing the conclusion that strategic foresight is primarily driven by intentional, data-literate leadership supported by a collaborative and innovative organizational culture, rather than by infrastructure alone.

V. CONCLUSION

After carefully examining different factors affecting the school leaders' strategic foresight, the researcher draws several conclusions.

The findings of this study lead to several important conclusions about the nature of strategic foresight among school leaders. The data-informed strategist emerged as the most critical leadership identity for fostering strategic foresight.

School leaders who ground their planning and decision-making in evidence rather than intuition or authority are significantly better positioned to anticipate challenges, identify opportunities, and chart sustainable institutional paths. This redefines the core competency profile of effective school leaders, placing purposeful and disciplined use of data at the center of future-oriented leadership.

Beyond personal data competence, school leaders serve as cultural architects who embed evidence-based thinking into their schools' institutional fabric. When leaders visibly model data-informed reasoning through regular data review cycles, cross-functional data teams, and integrated dashboards, data use transitions from a compliance activity to a shared professional norm. The school leader is the primary agent through whom a data culture either flourishes or stagnates, making this cultural role inseparable from strategic foresight.

School leaders who embrace innovation, networking, and entrepreneurial resource strategies are better equipped for strategic foresight than those relying solely on conventional financial management. Leaders who actively build networks with external stakeholders and pursue non-traditional funding mechanisms expand the resource horizon within which foresight can operate.

This is especially consequential in the Philippine public school context, where institutional budgets are often insufficient to fund forward-looking initiatives, and the capacity to generate supplementary resources directly determines whether strategic visions become actionable.

Organizational learning influences foresight primarily through openness, vision communication, and dialogue rather than solely through governance structures. School leaders who publicly experiment with new approaches, discuss failures as learning opportunities, and articulate the school's mission in ways connecting daily work to long-term aspirations build the organizational conditions that make strategic foresight possible. However, school leaders demonstrated stronger competence in executing strategies than in the anticipatory practices that should precede execution.

The relative weakness in scanning the educational landscape suggests that implementation efforts may not always be informed by awareness of emerging trends, policy shifts, and evolving community needs, posing risks for long-term institutional adaptability.

The validated structural model provides a clear priority architecture for leadership development, positioning data competencies as the highest-return investment for professional growth. Nevertheless, the 41.7% of unexplained variance reminds us that other factors, including emotional intelligence, political acuity, resilience, experience, and context, meaningfully shape a leader's capacity for foresight.

RECOMMENDATION

Based on the study's conclusions, the following recommendations are made.

School supervisors are encouraged to reorient their evaluation and development frameworks around data literacy as a foundational leadership competency.

Supervisory mechanisms can move beyond assessing compliance with data submission requirements to examine whether school leaders have established functioning data ecosystems, including regular data review cycles, data teams, and monitoring dashboards linked to meaningful educational outcomes. Additionally, supervisory protocols may incorporate environmental scanning checkpoints that require leaders to demonstrate awareness of shifting external conditions, rather than just the fidelity of plan execution.

Policy makers are encouraged to redesign leadership development programs based on the validated structural model. The findings argue against generic training approaches and in favor of targeted interventions that establish data literacy and purposeful data use as foundational competencies upon which innovation capacity and learning culture orientations are developed. Policy frameworks can also incentivize entrepreneurial resource-generation strategies, including grant writing, public-private partnerships, and social enterprise initiatives, while recognizing environmental scanning as a formal leadership discipline deserving of dedicated time and structural support through access to conferences, research platforms, and benchmarking networks.

School leaders themselves can recognize that deepening their data competencies represents the highest-return investment in their professional growth, not as a narrow technical skill but as an integrated capacity connecting analytical rigor with strategic vision. They may evolve from individual data consumers to cultural architects who embed evidence-based thinking school-wide through data review routines, collaborative data teams, accessible dashboards, and visible modeling of data-informed reasoning. Leaders are encouraged to adopt an entrepreneurial posture toward resource generation, cultivating external partnerships and non-traditional funding mechanisms, while deliberately practicing environmental scanning by monitoring policy

developments, engaging with emerging research, and benchmarking against high-performing institutions.

Stakeholders, including local government units, parents, private sector partners, and alumni associations, can understand that their engagement is structurally consequential to institutional foresight. They are urged to engage with schools' data-informed planning processes and share community-level intelligence on demographic, economic, and social trends that bridge the environmental scanning gap.

Future researchers may investigate the unexplained 41.7% of variance by examining variables such as emotional intelligence, political acuity, and resilience through mixed-methods designs. The scanning-implementation gap, the structural model's generalizability beyond Region 10, and the developmental trajectory of the data-informed strategist identity across leaders' careers all warrant further systematic investigation.

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