
Management Styles, Management Strategies, and Operational Efficiency of School Supply Offices: Evidence from Selected Schools in Zone 4, Division of Catanduanes

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Abstract — Management styles and strategies are widely recognized as critical determinants of operational efficiency in organizational settings, particularly in public educational institutions where resource optimization and service delivery are paramount concerns. This study examined the management styles, management strategies, and operational efficiency of Supply Offices in selected schools in Zone 4, Division of Catanduanes, Philippines, during the School Year 2025–2026. Specifically, it assessed the levels of management styles in terms of authoritative, democratic, and coaching approaches; evaluated the extent of management strategies implemented in terms of inventory management, standardization, and communication; determined the level of operational efficiency in terms of order frequency tracking, lead time analysis, and cost analysis; and investigated the significant relationships among these variables. Employing a descriptive-correlational research design, the study involved 277 teaching and non-teaching personnel from five selected high schools who participated through complete enumeration. Data were gathered

using a validated researcher-developed questionnaire with excellent internal consistency (Cronbach's $\alpha = 0.94$) and analyzed using weighted mean and Pearson's product-moment correlation coefficient at 0.05 level of significance.

Findings revealed that the Supply Offices demonstrated highly manifested management styles (WM=3.30), with democratic leadership emerging as the most prominent approach, followed by coaching and authoritative styles. Management strategies were highly demonstrated (WM=3.36), with communication ranking highest, followed by standardization and inventory management. Operational efficiency was highly exhibited (WM=3.27), with lead time analysis obtaining the highest rating, followed by cost analysis, while order frequency tracking, though within the demonstrated level, presented opportunities for improvement. Significant positive relationships were established between management styles and management strategies ($r=0.613$), management styles and operational efficiency ($r=0.139$), and management strategies and operational efficiency ($r=0.254$), indicating that effective leadership practices and sound management strategies collectively contribute to enhanced supply office performance.

The study underscores that while Supply Offices maintain effective management practices and efficient operations, strategic improvements in inventory monitoring and process optimization are necessary to sustain and enhance service delivery. Anchored on Lewin's Leadership Style Theory and Fayol's Administrative Management Theory, the findings provide empirical evidence on the interplay between leadership behaviors, management practices, and operational outcomes in public school administrative units. Based on the findings, a Strategic Management Enhancement Framework was developed to strengthen leadership practices, improve management strategies, and enhance the operational efficiency of public secondary school supply offices. The study contributes localized empirical evidence to the growing literature on educational management and provides practical implications for strengthening administrative operations, resource utilization, and service delivery in geographically isolated and resource-constrained school contexts.

Keywords: management styles, management strategies, operational efficiency, supply offices, descriptive-correlational design, public secondary schools, Strategic Management Enhancement Framework, Philippines

I. INTRODUCTION

Management style plays a critical role in directing, coordinating, and controlling organizational operations to achieve institutional goals. It encompasses the patterns of behavior and approaches that managers employ to influence employees, allocate resources, and integrate organizational functions, with its effectiveness largely dependent on organizational context and situational demands (Antonakis & Day, 2018; Northouse, 2022). Effective management styles influence decision-making, communication, employee motivation, and organizational performance by fostering coordination, commitment, and adaptability within organizations (Hadziahmetović et al., 2023; Yukl, 2020). Contemporary leadership literature further emphasizes that successful organizations adopt flexible management approaches that combine participative, developmental, and directive leadership behaviors to address changing organizational and environmental conditions (Northouse, 2022; Sulich et al., 2021).

Within the educational sector, institutions increasingly emphasize transparency, accountability, and efficiency in managing financial and material resources to improve organizational performance and public trust (OECD, 2023; UNESCO, 2021). Effective management strategies that align organizational controls with operational objectives enable institutions to optimize resource utilization, improve service delivery, and strengthen institutional governance (Hitt et al., 2020). Transparent procurement systems reduce opportunities for corruption and promote accountability, while stakeholder participation in planning and budgeting enhances institutional ownership and decision-making quality (OECD, 2023). Likewise, collaboration with external stakeholders strengthens organizational capacity, promotes resource sharing, and improves long-term institutional sustainability (UNESCO, 2021).

In the Philippine public education system, supply offices play a vital role in ensuring the timely procurement, storage, and distribution of instructional materials, equipment, and other resources necessary to support teaching, learning, and administrative operations. These functions are governed by Republic Act No. 9184, otherwise known as the *Government Procurement Reform Act*, which institutionalizes transparency, competitiveness, accountability, and efficiency in public procurement. Despite these policy frameworks, many public schools continue to experience operational challenges, including procurement delays, fragmented inventory systems, inadequate

monitoring mechanisms, communication gaps, and limited personnel capability. These constraints may reduce the efficiency of supply office operations and hinder effective resource utilization, highlighting the need for appropriate management styles and management strategies to improve operational performance.

Although numerous studies have examined leadership, strategic management, and procurement systems across public and private organizations, limited empirical evidence specifically investigates the relationships among management styles, management strategies, and operational efficiency in school supply offices. Existing studies have largely focused on business organizations, healthcare institutions, and general educational management, with relatively little attention given to supply office operations in Philippine public secondary schools, particularly in the Division of Catanduanes. Moreover, operational efficiency has rarely been examined using indicators such as order frequency tracking, lead time analysis, and cost analysis within educational supply management. Addressing these gaps, this study provides context-specific evidence on how management styles and management strategies relate to the operational efficiency of Supply Offices in selected public secondary schools.

This study was conducted to assess management styles, management strategies, and operational efficiency of the Supply Office in selected high schools in Zone 4, Division of Catanduanes, during School Year 2025–2026. Specifically, it sought to evaluate management styles employed (authoritative, democratic, or coaching), assess strategies implemented in procurement and inventory management, determine operational efficiency indicators including lead time and supply availability, and identify challenges encountered. The findings were expected to provide insights into current supply management practices, serving as a basis for improving operational procedures and contributing to a proposed Recipe for Effective Management (REM) Model to guide schools in strengthening supply office management and improving institutional efficiency.

Statement of the Problem. This study examined the management **styles**, management strategies, and operational efficiency of the Supply Offices in selected schools in Zone 4, Division of

Catanduanes, during the School Year 2025–2026. Specifically, it sought to answer the following research questions:

1. What is the level of management styles of the Supply Offices in selected schools in Zone 4, Division of Catanduanes, in terms of:
 - 1.1. authoritative;
 - 1.2. democratic; and
 - 1.3. coaching?
2. What is the extent of the management strategies implemented by the Supply Offices in selected schools in Zone 4, Division of Catanduanes, in terms of:
 - 2.1. inventory management;
 - 2.2. standardization; and
 - 2.3. communication?
3. What is the level of operational efficiency of the Supply Offices in selected schools in Zone 4, Division of Catanduanes, in terms of:
 - 3.1. order frequency tracking;
 - 3.2. lead time analysis; and
 - 3.3. cost analysis?
4. Is there a significant relationship between management styles and management strategies of the Supply Offices in selected schools in Zone 4, Division of Catanduanes?
5. Is there a significant relationship between management styles and operational efficiency of the Supply Offices in selected schools in Zone 4, Division of Catanduanes?

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6. Is there a significant relationship between management strategies and operational efficiency of the Supply Offices in selected schools in Zone 4, Division of Catanduanes?

Null Hypotheses. The following null hypotheses were tested at the 0.05 level of significance:

1. There is no significant relationship between the management styles and management strategies of the Supply Offices

in selected schools in Zone 4, Division of Catanduanes.
2. There is no significant relationship between the management styles and operational efficiency of the Supply Offices

in selected schools in Zone 4, Division of Catanduanes.
3. There is no significant relationship between the management strategies and operational efficiency of the Supply

Offices in selected schools in Zone 4, Division of Catanduanes.

Scope and Delimitation. This study examined the management styles, management strategies, and operational efficiency of the Supply Offices in selected schools in Zone 4, Division of Catanduanes during School Year 2025–2026. Employing a descriptive-correlational design, it assessed management styles in terms of authoritative, democratic, and coaching; management strategies in terms of inventory management, standardization, and communication; and operational efficiency in terms of order frequency tracking, lead time analysis, and cost analysis. The respondents comprised Supply Officers, administrative staff, and faculty members directly involved in supply office transactions related to procurement, inventory, and distribution of school supplies. The study was confined to the operations of the Supply Offices in the selected schools and did not include other administrative units. Such delimitations are appropriate in descriptive-

correlational studies, as they define the specific context and boundaries of the investigation while ensuring the validity and relevance of the findings (Creswell & Creswell, 2018).

Theoretical / Conceptual Framework. This study is anchored on Kurt Lewin's Leadership Style Theory (Lewin et al., 1939) and Henri Fayol's Administrative Management Theory (Fayol, 1916), which collectively explain how leadership behaviors and management practices influence organizational performance and operational efficiency. Lewin's Leadership Style Theory posits that leadership behavior significantly affects employee motivation, decision making, productivity, and organizational effectiveness through three leadership styles: authoritative, democratic, and laissez faire. Among these, democratic leadership emphasizes participation, collaboration, and shared responsibility, making it highly applicable to contemporary organizations that value employee involvement. Recent studies continue to affirm that appropriate leadership styles improve employee engagement, organizational performance, and service efficiency (Northouse, 2021). In the context of school supply offices, the theory provides the foundation for examining how management styles influence the implementation of management strategies and contribute to operational efficiency.

Complementing this perspective, Henri Fayol's Administrative Management Theory views management as a systematic process involving planning, organizing, commanding, coordinating, and controlling organizational activities. Fayol's principles remain fundamental to effective organizational management and performance (Pryor et al., 2019). Applied to school supply offices, the theory emphasizes systematic inventory management, standardized procedures, effective communication, and coordinated resource utilization to ensure efficient procurement, storage, and distribution of supplies. Together, Lewin's and Fayol's theories establish the theoretical foundation of the study by explaining that effective leadership and sound administrative practices are essential for achieving efficient organizational operations.

Figure 1 presents the conceptual framework of the study, illustrating the hypothesized relationships among management styles, management strategies, and operational efficiency of the Supply Offices in selected schools in Zone 4, Division of Catanduanes. Management styles, consisting of authoritative, democratic, and coaching approaches, are hypothesized to have

significant relationships with management strategies, represented by inventory management, standardization, and communication, and with operational efficiency, measured through order frequency tracking, lead time analysis, and cost analysis. Likewise, management strategies are hypothesized to have a significant relationship with operational efficiency. Consistent with the descriptive correlational research design, the framework depicts these relationships as correlational rather than causal. The empirical findings derived from these relationships will serve as the basis for developing a Strategic Management Enhancement Framework for Supply Offices, which aims to strengthen leadership practices, improve management strategies, and enhance the operational efficiency of public secondary school supply offices.

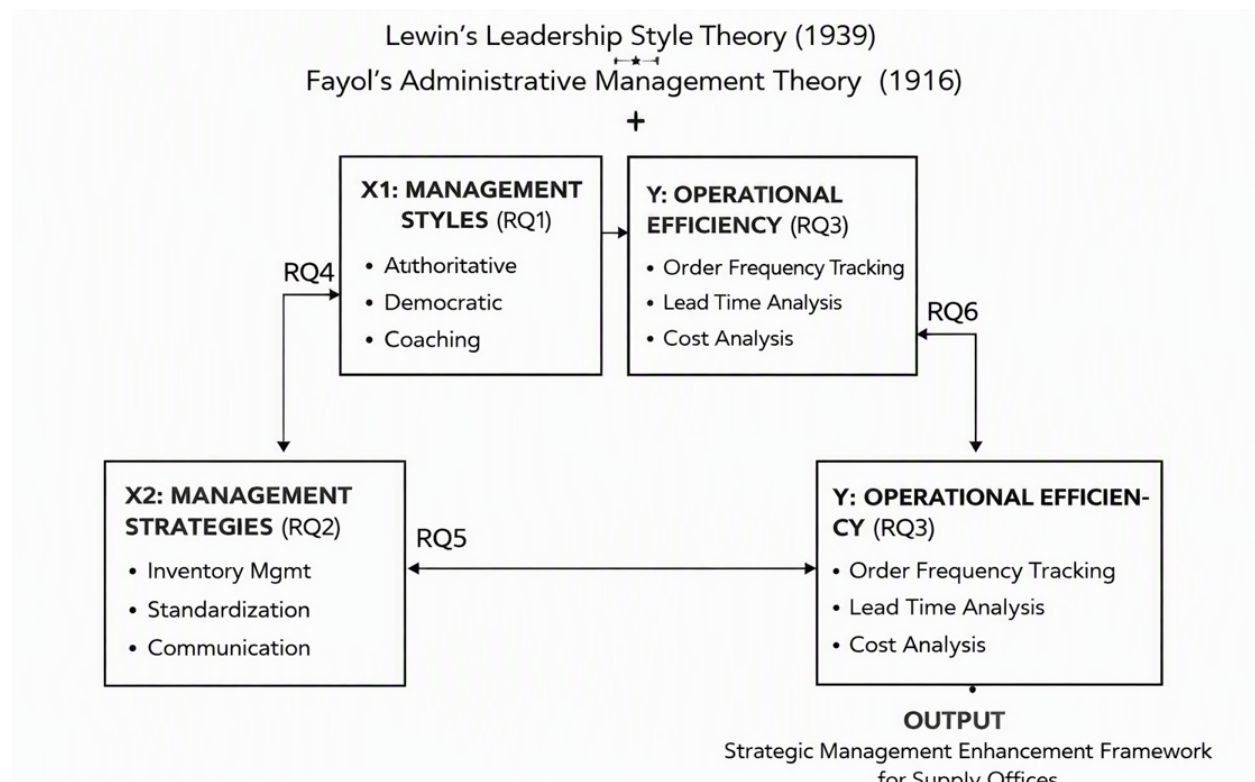


FIGURE 1. CONCEPTUAL PARADIGM OF THE STUDY

LITERATURES REVIEW

The literature reviewed in this study provides the theoretical and empirical foundation for understanding the relationships among management styles, management strategies, and operational efficiency in school supply offices. It synthesizes relevant studies that explain the influence of leadership approaches and management practices on organizational performance while identifying existing research gaps. The review also establishes the basis for the present investigation by demonstrating the need for context-specific evidence on supply office management in public secondary schools, particularly in the Division of Catanduanes.

Management Styles

Management styles refer to the approaches leaders use to direct, motivate, and supervise employees to achieve organizational goals. They significantly influence organizational performance, employee engagement, decision-making, and operational efficiency, particularly in educational institutions where effective leadership supports efficient resource management and service delivery. In school supply offices, management styles shape procurement, inventory management, communication, and policy implementation. Hadziahmetović, Tandır, and Džambić (2023) emphasized that effective leadership requires flexibility in adapting management styles to organizational needs, while Pizzolitto, Verna, and Venditti (2022) found that authoritative leadership enhances compliance in structured environments despite its potential impact on employee morale. Similarly, Sulich, Sołoducho-Pelc, and Ferasso (2021) reported that management styles significantly influence organizational decision-making and operational effectiveness.

Recent studies further indicate that participative and transformational leadership approaches promote collaboration, innovation, and organizational performance. Northouse (2021) and Yukl (2020) emphasized that participative leadership increases employee engagement, whereas Bass and Riggio (2018) noted that transformational leadership fosters innovation and adaptability. Likewise, Parker (2017) associated participative management with improved employee motivation and well-being, while Antonakis and Day (2018) stressed that leadership

effectiveness depends on organizational context. Choi, Goh, Adam, and Tan (2016) also demonstrated that management styles aligned with sound human resource practices enhance organizational performance, and Dinh et al. (2016) highlighted the growing importance of adaptive leadership in responding to changing organizational demands.

Despite these findings, existing studies primarily focus on corporate, healthcare, and general educational settings, with limited research on school supply offices. Moreover, few studies have examined how authoritative, democratic, and coaching management styles relate to management strategies and operational efficiency in public schools. Empirical evidence from Philippine public secondary schools, particularly in the Division of Catanduanes, also remains limited. This study addresses these gaps by examining the relationships among management styles, management strategies, and operational efficiency of Supply Offices in selected schools in Zone 4, Division of Catanduanes, thereby providing context-specific evidence to strengthen supply office management and improve operational efficiency.

Management Strategies at the Supply Office

Management strategies are systematic plans and actions that guide organizations in achieving operational efficiency, effective resource utilization, and organizational sustainability. In school supply offices, these strategies are essential for ensuring the efficient procurement, inventory control, standardization of procedures, and communication necessary for timely and accurate delivery of supplies. Alharbi (2024) emphasized that strategic management integrates planning, implementation, and evaluation to achieve organizational goals, while Iyobhebhe, John-Igbiele, and Olayinka (2024) highlighted that aligning management strategies with institutional objectives is fundamental to improving organizational performance. Likewise, Holm, Kringelum, and Anand (2025) noted that successful strategy implementation depends on effective communication, leadership, and accountability mechanisms.

The literature further underscores the importance of adaptability, innovation, and organizational capabilities in implementing effective management strategies. Pisano (2017) explained that organizations must continuously adapt their strategies by leveraging dynamic

capabilities, whereas Teece (2018) emphasized that business models and strategic capabilities should evolve in response to changing environments. Similarly, Barney and Mackey (2018) argued that sustainable organizational performance is achieved through strategic alignment. Li and Liu (2019) identified human resource practices, including training and performance management, as critical to successful strategy implementation, while George, Haas, and Pentland (2016) highlighted the value of data-driven decision-making in improving organizational efficiency. Furthermore, Hitt, Ireland, and Hoskisson (2020) stressed that management strategies should respond to competitive and environmental changes, whereas Johnson, Scholes, and Whittington (2021) emphasized balancing long-term strategic objectives with short-term operational priorities.

Despite these contributions, existing studies largely focus on business organizations and general management contexts, with limited attention to management strategies within school supply offices. Moreover, few studies have examined how inventory management, standardization, and communication strategies relate to operational efficiency in public educational institutions. Empirical evidence from Philippine public secondary schools, particularly in the Division of Catanduanes, also remains limited. This study addresses these gaps by examining the management strategies implemented by Supply Offices and their relationship with operational efficiency, thereby providing context-specific evidence to strengthen supply management practices and improve service delivery in public schools.

Operational Efficiency

Operational efficiency refers to an organization's ability to deliver products and services effectively while minimizing costs, reducing waste, and maximizing the use of available resources. In school supply offices, operational efficiency is reflected in the timely procurement, accurate inventory management, prompt distribution of supplies, and cost-effective operations that support uninterrupted teaching and learning. Al-Momani and Alshura (2016) emphasized that operational efficiency is closely associated with organizational performance, as streamlined processes reduce costs and improve service delivery. Likewise, Slack and Brandon-Jones (2018) explained that operations management approaches, including lean and agile systems, enhance efficiency by optimizing workflows and resource utilization. Chiarini and Bracci (2019) further noted that lean

management practices improve organizational efficiency by eliminating waste and enhancing work processes, while Womack and Jones (2017) demonstrated that lean thinking principles can be effectively applied in service-oriented organizations, including public institutions.

Recent literature also identifies technology, innovation, and human resource management as essential drivers of operational efficiency. Kane et al. (2019) reported that digital transformation enhances operational transparency, accuracy, and processing speed, while Davenport and Westerman (2018) highlighted that data-driven decision-making improves forecasting, resource allocation, and organizational efficiency. Similarly, Becker and Huselid (2016) emphasized that employee competencies and motivation significantly influence operational outcomes, whereas Delery and Roumpi (2017) underscored the strategic role of human resource management in sustaining organizational efficiency. George et al. (2020) further argued that participative planning and technology integration help organizations overcome operational challenges, while Teece (2020) emphasized that dynamic capabilities enable organizations to continuously adapt and reconfigure resources to maintain efficiency in changing environments.

Despite these contributions, most existing studies examine operational efficiency in business, manufacturing, healthcare, and general public sector organizations, with limited attention to school supply offices. Moreover, few studies have investigated operational efficiency using indicators such as order frequency tracking, lead time analysis, and cost analysis within public educational institutions. Empirical evidence from Philippine public secondary schools, particularly in the Division of Catanduanes, also remains scarce. This study addresses these gaps by examining the operational efficiency of Supply Offices and its relationship with management styles and management strategies, thereby providing context-specific evidence to strengthen supply office operations and improve the efficiency of procurement, inventory management, and resource distribution in public schools.

II. METHODOLOGY

Research Design. This study employed a descriptive-correlational research design to examine the management styles, management strategies, and operational efficiency of the Supply Offices in selected schools in Zone 4, Division of Catanduanes. The descriptive component was used to characterize the prevailing management styles, management strategies, and level of operational efficiency, while the correlational component examined the relationships among these variables without manipulating the research setting. This design is appropriate for describing existing organizational conditions and determining the magnitude and direction of relationships among naturally occurring variables (Creswell & Creswell, 2018; Gray, 2017). The findings provided empirical evidence on how management styles and management strategies relate to operational efficiency, serving as a basis for recommending strategies to strengthen supply office management and service delivery.

Population of the Study. The study population comprised 277 teaching and non teaching employees from five selected high schools in Zone 4, Division of Catanduanes, namely Pandan School of Arts and Trades (98), Caramoran Rural Development High School (41), Tubli National High School (50), Supang Datag National High School (42), and Caramoran School of Fisheries (46). A complete enumeration (census) was employed, wherein all members of the target population were included as respondents to ensure comprehensive representation, eliminate sampling error, and generate reliable data on the management styles, management strategies, and operational efficiency of the schools' Supply Offices (Creswell & Creswell, 2018; Saunders et al., 2019).

A researcher developed questionnaire consisting of three sections was utilized to collect the primary data. Part I assessed management styles, Part II measured management strategies, and Part III evaluated the operational efficiency of the Supply Offices in selected high schools in Zone 4, Division of Catanduanes. The instrument underwent face and content validation by a panel of experts in public administration, human resource management, and research methodology to ensure the clarity, relevance, and alignment of the items with the study objectives (Polit & Beck, 2021). Their comments and recommendations were incorporated to refine the questionnaire before

its administration. Subsequently, the instrument was pilot tested among 30 employees who possessed characteristics similar to those of the target respondents but were excluded from the actual study. The internal consistency of the instrument was assessed using Cronbach's alpha, which yielded an overall reliability coefficient of 0.94, indicating excellent internal consistency and confirming that the questionnaire was highly reliable and appropriate for the conduct of the study (Taber, 2018). All responses were measured using a standardized four-point Likert scale, as presented in Table 1.

TABLE 1
RATING SCALE MATRIX FOR MANAGEMENT STYLES, MANAGEMENT STRATEGIES, AND OPERATIONAL EFFICIENCY

Assigned Points	Numerical Range	Management Styles	Management Strategies	Operational Efficiency
4	3.25–4.00	Highly Manifested	Highly Demonstrated	Highly Exhibited
3	2.50–3.24	Manifested	Demonstrated	Exhibited
2	1.75–2.49	Less Manifested	Less Demonstrated	Less Exhibited
1	1.00–1.74	Least Manifested	Least Demonstrated	Least Exhibited

Data Collection. Prior to data collection, the researcher obtained the necessary approvals from the Schools Division Office and the principals of the selected high schools in Zone 4, Division of Catanduanes. Eligible respondents were informed of the study's objectives and invited to participate voluntarily after providing their informed consent. A validated researcher developed questionnaire was personally administered following standardized data collection procedures, with

clear instructions provided to ensure consistent responses. Completed questionnaires were retrieved, checked for completeness, and encoded for statistical analysis. Throughout the process, ethical principles, including voluntary participation, confidentiality, anonymity, and the exclusive use of data for research purposes, were strictly observed in accordance with established research ethics guidelines (Creswell & Creswell, 2018; Israel & Hay, 2006).

Data Analysis. The collected data were coded, tabulated, and analyzed using appropriate descriptive and inferential statistical techniques. Weighted mean was employed to determine the level of management styles, management strategies, and operational efficiency of the Supply Offices in the selected high schools in Zone 4, Division of Catanduanes, while the Pearson Product Moment Correlation Coefficient (Pearson's r) was used to examine the significance, strength, and direction of the relationships among the study variables. All statistical analyses were performed at the 0.05 level of significance, providing the basis for accepting or rejecting the null hypotheses (Field, 2018; Schober et al., 2018).

Ethical Considerations. The study adhered to established ethical standards for research involving human participants. Prior to data collection, approval was obtained from the appropriate educational authorities and school administrators. Respondents were informed of the study's objectives, procedures, and their rights before providing informed consent. Participation was voluntary, and respondents could withdraw at any stage without penalty. Confidentiality and anonymity were maintained through the use of coded responses, and all data were used solely for research purposes. The researcher ensured honesty, objectivity, and integrity throughout the data collection, analysis, and reporting processes while upholding the ethical principles of respect for persons, beneficence, and justice in accordance with current research ethics guidelines (Resnik, 2020; American Psychological Association, 2020).

III. RESULTS

This section presents the findings of the study on the management styles, management strategies, and operational efficiency of the Supply Offices in selected schools in Zone 4, Division of Catanduanes. The results are organized according to the research questions and are discussed in relation to the relevant theories and empirical literature to provide a comprehensive interpretation of the findings.

Management Styles of the Supply Offices

Table 2 presents the composite level of management styles practiced by the Supply Offices. The findings indicate a grand weighted mean of 3.30 ($SD = 0.57$), interpreted as Highly Manifested, suggesting that managers consistently employ effective leadership practices in supervising personnel and managing supply operations. Among the dimensions, Democratic Management Style obtained the highest rating ($WM = 3.33$, $SD = 0.59$), indicating that managers frequently encourage employee participation, collaboration, and shared decision-making. This was followed by Coaching Management Style ($WM = 3.30$, $SD = 0.59$), reflecting managers' commitment to guiding, mentoring, and developing employees' competencies. Although Authoritative Management Style ranked lowest ($WM = 3.27$, $SD = 0.54$), it remained Highly Manifested, implying that managers also maintain clear direction, enforce organizational policies, and ensure accountability when necessary. Overall, the consistently high ratings across all dimensions demonstrate that the Supply Offices adopt a balanced management approach that integrates participative leadership, employee development, and organizational control, creating an environment that supports effective coordination, regulatory compliance, and efficient operational performance.

TABLE 2
COMPOSITE LEVEL OF MANAGEMENT STYLES OF THE SUPPLY OFFICE (N = 277)

Dimensions	Weighted Mean	Standard Deviation	Verbal Interpretation	Rank
1. Authoritative Management Style	3.27	0.54	Highly Manifested	3
2. Democratic Management Style	3.33	0.59	Highly Manifested	1
3. Coaching Management Style	3.30	0.59	Highly Manifested	2
Grand Weighted Mean	3.30	0.57	Highly Manifested	—

Management Strategies Implemented by the Supply Offices

Table 3 presents the composite level of management strategies implemented by the Supply Offices. The findings reveal a grand weighted mean of 3.36 (SD = 0.53), interpreted as Highly Demonstrated, indicating that the Supply Offices consistently implement effective management strategies that support efficient procurement, inventory control, and service delivery. Among the dimensions, Communication obtained the highest rating (WM = 3.38, SD = 0.54), suggesting that

managers prioritize timely information sharing, coordination, and collaboration among personnel and stakeholders to facilitate smooth operational processes. This was followed by Standardization (WM = 3.36, SD = 0.53), reflecting the consistent application of established procedures, policies, and quality standards in carrying out supply management functions. Inventory Management ranked third (WM = 3.35, SD = 0.53), yet remained Highly Demonstrated, indicating that systematic monitoring, control, and utilization of inventory resources are integral components of supply office operations. Overall, the uniformly high ratings across all dimensions demonstrate that the Supply Offices employ well-established management strategies that promote operational consistency, effective resource utilization, regulatory compliance, and improved organizational performance.

TABLE 3
COMPOSITE MANAGEMENT STRATEGIES OF THE SUPPLY OFFICE (N = 277)

Dimensions	Weighted Mean	Standard Deviation	Verbal Interpretation	Rank
1. Inventory Management	3.35	0.53	Highly Demonstrated	3
2. Standardization	3.36	0.53	Highly Demonstrated	2
3. Communication	3.38	0.54	Highly Demonstrated	1
Grand Weighted Mean	3.36	0.53	Highly Demonstrated	—

Operational Efficiency of the Supply Offices

Table 4 presents the composite level of operational efficiency of the Supply Offices. The findings reveal a grand weighted mean of 3.27 (SD = 0.53), interpreted as Highly Demonstrated, indicating that the Supply Offices consistently achieve a high level of operational efficiency in managing procurement and supply chain activities. Among the dimensions, Lead Time Analysis

obtained the highest rating (WM = 3.34, SD = 0.53), suggesting that the offices effectively monitor and minimize the time required to process procurement requests and deliver needed supplies, thereby enhancing service responsiveness. This was closely followed by Cost Analysis (WM = 3.33, SD = 0.54), reflecting the offices' strong capability to manage expenditures, optimize resource utilization, and maintain cost-effective procurement practices. Order Frequency Tracking received the lowest rating (WM = 3.14, SD = 0.52), although it remained within the Demonstrated level, indicating that while order monitoring practices are generally evident, they present greater opportunities for improvement compared with the other operational efficiency indicators. Overall, the findings suggest that the Supply Offices maintain efficient operational processes characterized by effective lead time management, prudent cost control, and satisfactory order monitoring, all of which contribute to reliable service delivery and improved organizational performance.

TABLE 4
COMPOSITE LEVEL OF OPERATIONAL EFFICIENCY OF THE SUPPLY OFFICE
(N = 277)

Dimensions	Weighted Mean	Standard Deviation	Verbal Interpretation	Rank
1. Order Frequency Tracking	3.14	0.52	Demonstrated	3
2. Lead Time Analysis	3.34	0.53	Highly Demonstrated	1
3. Cost Analysis	3.33	0.54	Highly Demonstrated	2
Grand Weighted Mean	3.27	0.53	Highly Demonstrated	—

Relationship Between Management Styles and Management Strategies

The results of the correlation analysis between management styles and management strategies of the Supply Offices are shown in Table 5. The findings reveal a computed Pearson correlation coefficient of 0.613, which exceeds the critical value of 0.118 at the 0.05 level of significance. Consequently, the null hypothesis was rejected, indicating a statistically significant relationship between management styles and management strategies. The correlation coefficient further indicates a moderately high positive relationship, suggesting that improvements in management styles are associated with corresponding enhancements in the implementation of management strategies. This implies that managers who effectively employ participative, coaching, and authoritative leadership approaches are more likely to implement sound inventory management, standardization, and communication strategies. Overall, the findings highlight that effective management styles play a crucial role in strengthening strategic management practices that contribute to the efficient operation of Supply Offices.

TABLE 5
SIGNIFICANT RELATIONSHIP BETWEEN MANAGEMENT STYLES AND
MANAGEMENT STRATEGIES OF THE SUPPLY OFFICE (N = 277)

Variables	Statistical Test	Computed Value	Critical Value @ .05	Decision	Interpretation
Management Styles and Management Strategies	Pearson r	0.613	0.118	Reject H_0	Significant Relationship

H_0 : There is no significant relationship between management styles and management strategies of the Supply Office.

$\alpha = 0.05$ level of significance.

Relationship Between Management Styles and Operational Efficiency

The results of the correlation analysis between management styles and operational efficiency of the Supply Offices are shown in Table 6. The findings reveal a computed Pearson correlation coefficient of 0.139, which is greater than the critical value of 0.118 at the 0.05 level of significance. Consequently, the null hypothesis was rejected, indicating a statistically significant relationship between management styles and operational efficiency. However, the magnitude of the correlation indicates a very low positive relationship, suggesting that although management styles are significantly associated with operational efficiency, their direct influence is relatively weak. This implies that improvements in management styles may contribute to enhanced operational efficiency, but other organizational and operational factors are likely to have a greater impact on the efficiency of supply office functions. Overall, the findings suggest that while effective management styles remain important in supporting operational performance, achieving higher levels of operational efficiency also depends on complementary factors such as management strategies, resource availability, process optimization, and organizational systems.

TABLE 6
SIGNIFICANT RELATIONSHIP BETWEEN MANAGEMENT STYLES AND
OPERATIONAL EFFICIENCY OF THE SUPPLY OFFICE (N = 277)

Variables	Statistical Test	Computed Value	Critical Value @ .05	Decision	Interpretation
Management Styles and Operational Efficiency	Pearson <i>r</i>	0.139	0.118	Reject Ho	Significant Relationship

Ho: There is no significant relationship between management styles and the operational efficiency of the Supply Office.

$\alpha = 0.05$ level of significance.

Relationship Between Management Strategies and Operational Efficiency

The results of the correlation analysis between management strategies and operational efficiency of the Supply Offices are presented in Table 7. The findings reveal a computed Pearson correlation coefficient of 0.254, which is higher than the critical value of 0.118 at the 0.05 level of significance. Thus, the null hypothesis was rejected, indicating a statistically significant relationship between management strategies and operational efficiency. The correlation coefficient indicates a low positive relationship, suggesting that better implementation of inventory management, standardization, and communication strategies is associated with improved operational efficiency. Although the relationship is modest, the findings imply that effective management strategies contribute to enhancing supply office performance and operational effectiveness.

TABLE 7
SIGNIFICANT RELATIONSHIP BETWEEN MANAGEMENT STRATEGIES AND
OPERATIONAL EFFICIENCY OF THE SUPPLY OFFICE (N = 277)

Variables	Statistical Test	Computed Value	Critical Value @ .05	Decision	Interpretation
Management Strategies and Operational Efficiency	Pearson <i>r</i>	0.254	0.118	Reject Ho	Significant Relationship

Ho: There is no significant relationship between management strategies and the operational efficiency of the Supply Office.

$\alpha = 0.05$ level of significance.

IV. DISCUSSION

The discussion interprets the study's findings on the management styles, management strategies, and operational efficiency of the Supply Offices, highlighting their interrelationships and implications for effective supply office management in public secondary schools in light of existing literature.

The findings indicate that the Supply Offices exhibited a highly manifested level of management styles, with democratic management style ranked highest, followed by coaching and authoritative leadership. This suggests that managers adopt a balanced leadership approach that promotes collaboration, employee development, and organizational accountability while maintaining compliance with institutional policies. The predominance of democratic leadership supports previous studies emphasizing that participative leadership enhances employee engagement and organizational performance (Northouse, 2021; Yukl, 2020). Likewise, coaching leadership strengthens employee competence and adaptability (Hadziahmetović et al., 2023), whereas authoritative leadership reinforces organizational control in structured work environments (Pizzolitto et al., 2022). These findings further support the view that leadership effectiveness depends on adapting management styles to organizational requirements (Antonakis & Day, 2018).

The Supply Offices likewise demonstrated highly implemented management strategies, with communication receiving the highest rating, followed by standardization and inventory management. This indicates that effective communication, standardized procedures, and systematic inventory practices are consistently integrated into supply office operations. The findings are consistent with evidence that communication facilitates successful strategy implementation (Holm et al., 2025), while standardization and strategic resource management improve organizational effectiveness (Alharbi, 2024; Iyobhebhe et al., 2024). Overall, the results reinforce the importance of aligning management strategies with organizational goals to sustain operational performance (Hitt et al., 2020; Johnson et al., 2021).

Operational efficiency was likewise highly demonstrated, with lead time analysis obtaining the highest rating, followed by cost analysis and order frequency tracking. The findings indicate that the Supply Offices effectively manage procurement timelines and expenditures, although order frequency tracking remains an area for improvement. These results support previous studies

highlighting the role of process optimization, cost control, and data-driven decision-making in improving operational performance (Slack & Brandon-Jones, 2018; Al-Momani & Alshura, 2016; George et al., 2016). They also affirm that digital technologies can further enhance transparency and operational efficiency (Kane et al., 2019; Davenport & Westerman, 2018).

The correlation analysis revealed a moderately high positive relationship between management styles and management strategies ($r = 0.613$, $p < .05$), indicating that effective leadership is closely associated with stronger strategic management practices. This finding supports the view that leadership capabilities influence strategy formulation and implementation (Hadziahmetović et al., 2023; Sulich et al., 2021) and are essential for developing adaptive organizational capabilities (Pisano, 2017; Teece, 2018).

In contrast, management styles exhibited only a very low positive relationship with operational efficiency ($r = 0.139$, $p < .05$), suggesting that leadership alone has limited direct influence on operational outcomes. This implies that operational efficiency depends on broader organizational conditions, including strategic management, resource availability, and process optimization (Becker & Huselid, 2016; Delery & Roumpi, 2017; Teece, 2020).

Similarly, management strategies showed a low positive relationship with operational efficiency ($r = 0.254$, $p < .05$), indicating that sound strategic practices contribute to improved operational performance, although other contextual factors also influence efficiency. This finding is consistent with previous studies emphasizing strategic alignment, human resource practices, and technology integration as determinants of organizational performance (Alharbi, 2024; Iyobhebhe et al., 2024; Holm et al., 2025; Barney & Mackey, 2018; Li & Liu, 2019; George et al., 2020).

Overall, the stronger association between management styles and management strategies than with operational efficiency suggests that leadership primarily influences operational performance through strategic management practices. This supports the dynamic capabilities perspective, which posits that leadership shapes organizational capabilities that ultimately determine operational outcomes (Teece, 2018, 2020). The findings further reinforce the need to integrate leadership, strategic management, and operational processes to achieve sustainable organizational performance (Barney & Mackey, 2018; Hitt et al., 2020).

Finally, this study contributes context-specific evidence on supply office management in Philippine public secondary schools by extending leadership and strategic management theories to educational supply chain operations. The findings provide empirical support for strengthening leadership development, strategic planning, digital transformation, and performance monitoring to improve supply office effectiveness, particularly in enhancing order frequency tracking and overall operational efficiency.

Conclusion. The findings indicate that the Supply Offices in selected schools in Zone 4, Division of Catanduanes exhibit highly manifested management styles and highly demonstrated management strategies and operational efficiency. Democratic leadership emerged as the dominant management style, while communication was the most practiced management strategy and lead time analysis was the strongest indicator of operational efficiency. Significant relationships were found among the variables, with a moderately high positive relationship between management styles and management strategies, a very low positive relationship between management styles and operational efficiency, and a low positive relationship between management strategies and operational efficiency. These findings suggest that leadership primarily enhances operational efficiency through the effective implementation of management strategies and provide empirical evidence on supply office management in Philippine public secondary schools

Recommendations. School administrators and supply office managers should strengthen participative leadership, enhance communication, standardization, and inventory management systems, and improve order frequency tracking through digital and data-driven approaches. The Schools Division Office should provide continuous capacity-building programs on leadership, procurement, strategic management, and operational efficiency, while the Department of Education should develop standardized policies and monitoring frameworks for supply office management. Future studies should validate these findings in other educational settings and examine the influence of organizational factors, such as institutional support, technology adoption, organizational culture, and resource availability. Supply Offices are likewise encouraged to implement continuous improvement initiatives, including benchmarking, professional learning

communities, and operational efficiency enhancement plans with measurable performance indicators.

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