

Optimizing school maintenance and other operating expenses through business administration practices: Evidence from public schools in the Philippines

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Abstract

This study aimed to determine the relationship between institutional characteristics, business-administration practices, and Maintenance and Other Operating Expenses (MOOE) optimization in public schools in Congressional District III of the Schools Division of Nueva Ecija, Philippines. Additionally, this study sought to discover the role of the School Improvement Plan (SIP) and Annual Implementation Plan (AIP) in effective resource management. Descriptive-correlational research was utilized, and a total of 50 school heads, head teachers, and officers-in-charge were asked to participate and answer a set of questions. Descriptive statistical analysis and correlation tests were conducted to explore the study's research questions. The results revealed that most of the participating schools had a high level of MOOE optimization and business administration practices. Moreover, findings demonstrated that the AIP and SIP implementation played an essential role in aligning school needs and financial resources. Lastly, there were significant relationships among the variables of this study. However, since this study was only focused on 50 public schools in the district, the results could not be generalized to other school divisions. The results provided empirical data for achieving financial planning, utilizing resources efficiently, ensuring financial transparency, and enhancing accountability and sustainability in school-based financial management.

Keywords: *MOOE optimization, business administration in education, school financial management, sustainability in schools, school improvement planning*

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1. Introduction

Effective management of funds is crucial in sustaining the operations and educational services of schools. In the Philippine public school system, Maintenance and Other Operating Expenses (MOOE) is utilized to suffice basic and essential requirements such as instructional materials, utilities, and minor repairs. In accordance with the guidelines provided by the Department of Education (DepEd), the management of MOOE must be practiced in a manner that follows the priorities and financial management procedures approved by the department (DepEd, 2016).

Even with existing policies and guidelines in place, MOOE management still encounters difficulties in financial planning, resource allocation, monitoring, and overall financial management. Research in Quezon and Ilocos Norte similarly highlighted the necessity of enhancing school heads' financial management skills and expertise (Macalos, 2025; Zulueta & Limpiada, 2018), while Separis (2026) identified a notable positive link between financial management practices and MOOE utilization in Panabo City.

Empirical evidence indicated that resource allocation was most strongly connected to MOOE optimization (Macalos, 2025), underscoring the significance of sound financial planning and effective resource use. Nevertheless, few studies have explored MOOE optimization through a business administration lens (i.e. Principe, 2024; Tomboc, 2026). This research fills this gap by looking into institutional characteristics, business administration practices, and MOOE optimization in public schools within Congressional District III, Schools Division of Nueva Ecija, focusing on efficient and accountable resource management.

The following objectives guide the investigation:

1. To assess the extent of MOOE optimization through the Annual Improvement Plan (AIP), School Improvement Plan (SIP), The General Assessment of AIP and SIP.
2. To examine the application of business administration practices of MOOE management through financial planning and budget allocation, resource management and cost optimization, transparency, accountability, and stakeholders' involvement, sustainability strategies and business administration practices for efficiency improvement.
3. To determine the relationship of school's profile with MOOE optimization and business administration.

2. Literature Review

Effective school administration requires effective financial management that will ensure proper budgeting and allocation of resources while monitoring and accountability to achieve cost-saving strategies for the operation of the institutions, programs, and improvement plans (Gabriel, 2022; Hernandez, 2024). According to Aina and Bipath (2020), the absence of adequate financial skills and stakeholder relationships could hinder financial decision-making in public schools. In the same way, Yasin and Mokhtar (2022) identified the problems of financial management training, transparency, accountability, and monitoring in the practices of school principals.

In the Philippines, MOOE is a vital source of funds for school operations, and its use is determined at the school level, guided by specific accountability and financial regulations (DepEd, 2016). Thus, to optimize the use of MOOE, schools need to consider their needs in relation to the funds available to them. Different schools have different student populations, infrastructure, staffing, and other factors that determine their specific needs. Therefore, coordinating AIP and SIP help prioritize initiatives and use MOOE efficiently while staying within financial limits. Transparency, oversight, and accountability are likewise crucial for the responsible handling of public funds, aligning with Rulashe and Dyan (2023), who stressed the importance of financial accountability in the public sector.

Business administration principles offer a viewpoint on the effective use of school funds. It helps teachers and school leaders see how to budget, plan, report and keep funds (Yizengaw & Agegnehu, 2021). Similarly, it also shows that insufficient resources or weak financial systems hamper school operations (Mlakalaka & Rulashe, 2024). Effective school financial management requires careful use, maintenance, and improvement of resources.

The studies undertaken in South Africa, Ethiopia and Malaysia suggest that financial literacy, planning, stakeholder participation and transparency are important in effective financial management in schools (Aina & Bipath, 2020; Mlakalaka & Rulashe, 2024; Yasin & Mokhtar, 2022; Yizengaw & Agegnehu, 2021). The maximization of MOOE is not only dependent on the availability of funds but also on proper planning, accountability and institutional capacity. However, only a limited number of studies have examined these factors together in Philippine public schools using a business administration perspective. This study addresses that gap by investigating institutional characteristics, financial planning, resource

management, sustainability strategies, and business administration practices in relation to MOOE optimization through the AIP and SIP.

3. Methodology

3.1 Research Design

This study used a quantitative descriptive-correlational research design that described the existing MOOE management practices and established the links between the institution's characteristics, business administration practices, and MOOE optimization. At the same time, the study used descriptive analysis to assess the prevailing situations and a correlational analysis to determine how the variables related to each other (Saunders et al., 2023; Klein, 2021). The method of correlation was appropriate for investigating existing relationships without establishing cause-and-effect relationships.

3.2 Participants of the Study

The research was carried out in public schools within Congressional District III of the Schools Division of Nueva Ecija in the Philippines, which includes General Mamerto Natividad, Palayan City, Bongabon, Laur, and Gabaldon. Using purposive sampling, fifty (50) participants who were directly engaged in the MOOE process were chosen. The district was chosen because of its diversity in school size, enrollment, personnel, physical resources, and MOOE requirements, making it a suitable setting for studying financial planning and business administration practices related to MOOE optimization in School Year 2025–2026.

Table 1 presents the descriptive profile of the participating schools in terms of student population, teaching and non-teaching personnel, available facilities, annual MOOE allocation, lot area, and school classification. Half (50%) of the schools were classified as small schools, followed by medium (30%), large (12%), and mega schools (8%). In terms of teaching personnel, 48% had 6–10 teachers, 18% had 11–15, and 34% had 16 or more, while non-teaching personnel ranged from 1–3 (40%), 4–6 (22%), 7–10 (30%), to 11 or more (8%). Regarding facilities, all participating schools had canteens, 80% had gymnasiums, and 44% had libraries, reflecting variations in available physical resources consistent with infrastructure gaps noted by Navarro (2024). Annual MOOE allocations also varied, with 50% of schools receiving Php250,000–Php450,000, 30% receiving Php450,000–Php800,000, and 20% receiving more than Php1 million. In terms of land area, 46% of schools had 5,000 sq. m. or

less, while 30% had approximately 20,000 sq. m. There are differences in physical space of the schools that may influence facility planning and maintenance (Bauscher & Poe, 2023). Similarly, there is considerable variation in school size, staffing, facilities, financial resources, and physical space, which are important contextual factors in school resource planning and MOOE management (Bantilan et al., 2025; Kaplan & Owings, 2023; Mendoza & Callo, 2022; OECD, 2024).

Table 1*Characteristics of participating schools*

	F	%
School Population		
440 enrollees (Small School)	25	50
441 - 840 enrollees (Medium School)	15	30
842 - 1240 enrollees (Large School)	6	12
> 1240 enrollees (Mega School)	4	8
Number of Teaching Personnel		
6–10	24	48
11–15	9	18
16 and above	17	34
Number of Non-Teaching Personnel		
1–3	20	40
4–6	11	22
7–10	15	30
11 and above	4	8
Availability of School Facilities		
Library	22	44
Canteen	50	100
Gymnasium	40	80
Classrooms		
<10 classroom	22	44
10 - 30 classroom	25	50
>30 classroom	3	6
Laboratories		
1 laboratory	3	6
2 - 5 laboratories	4	8
> 5 laboratories	2	4
Others	6	12
facilities	35	70
Annual MOOE Budget Allocation		
Php 250,000 - Php450,00 (Small School)	25	50
Php 450,000 - Php800,000 (Medium School)	15	30
Can exceed Php1,000,000 (Large School)	6	12
Php 1.5 million (Mega School)	4	8
Total Lot Area (in square meters)		
500 students or less (5,000 sq.m)	23	46
501 - 1,000 students (10,000 sq.m)	9	18
1,001 - 2000 students (20,000 sq.m)	15	30
2001 - 3,000 students (30,000 sq.m.)	3	6
School Classification/Category		
Small	25	50
Medium	15	30
Large	6	12
Mega	4	8
Total	50	100

3.3 Instrumentation and Data Gathering Process

A structured survey questionnaire was used to gather the necessary information. The developed instrument captured the study's key constructs, including the achievement of AIP and SIP optimization, financial planning, resource management, transparency, sustainability, and effective business administration practices. The survey instrument was validated and pilot-tested to determine its clarity, validity, and reliability. In addition, the level of internal consistency was assessed using Cronbach's alpha, which yielded a value of 0.891, while the standardized alpha was 0.888, indicating a high level of consistency among the items.

Permission to conduct the study was sought and obtained from the relevant authorities. Moreover, the participants were informed of the study's objectives and provided voluntary consent to participate. Finally, all data collected from the participants were treated as confidential and used exclusively for the purposes of the study (Creswell & Creswell, 2022; Mertler, 2024).

3.4 Data Analysis

The collected data were processed using SPSS and Microsoft Excel. To describe the characteristics of the schools and evaluate their MOOE financial practices, descriptive statistical measures, including frequencies, percentages, means, and standard deviations, were used. Pearson's correlation was employed when the required statistical assumptions, including normality of the sample distribution, linearity, and the absence of significant outliers, were met. Otherwise, Spearman's rank-order correlation was used when these assumptions were not fully satisfied (Baran, 2021; de Raadt et al., 2021; van den Heuvel & Zhan, 2022). The statistical significance level was set at 5%.

3.5 Research Ethics

The ethical standards applicable to research involving human participants were observed throughout the study. Ethical approval was granted by the Graduate School of Wesleyan University-Philippines, and authorization to conduct the study was obtained from the Schools Division Office of Nueva Ecija. In accordance with the Department of Education Research Management Guidelines, the principles of informed consent, voluntary participation, confidentiality, anonymity, and appropriate data management practices were observed (DepEd, 2017).

The participants were informed of their right to withdraw from or decline participation in the study at any time and without penalty. To minimize response bias, standardized questionnaires and uniform data collection procedures were employed across all participating schools.

4. Finding and Discussion

Table 2 presents the participants' evaluation of AIP optimization in terms of addressing school needs, MOOE allocation, stakeholder involvement, transparency, and resource utilization. The participants strongly agreed that the schools' AIPs were generally optimized, as reflected by the overall mean of 4.82. The highest-rated indicator was the use of funds, which obtained a weighted mean of 4.92, where MOOE funds were utilized efficiently and aligned with the schools identified needs.

Table 2

Annual Improvement Plan (AIP) optimization

Indicators	Mean	Description
The AIP aligns with the school's operational and instructional needs.	4.82	Strongly Agree
The AIP is based on a well-defined assessment of school priorities.	4.78	Strongly Agree
The AIP effectively allocates the MOOE budget to cover essential school expenses.	4.86	Strongly Agree
Stakeholders are involved in the AIP planning process.	4.66	Strongly Agree
The AIP is regularly reviewed and updated.	4.78	Strongly Agree
AIP involves provisions for infrastructure maintenance and improvements.	4.82	Strongly Agree
Funds allocated in the AIP are utilized efficiently without wastage.	4.92	Strongly Agree
There is transparency in the allocation and disbursement of AIP funds.	4.88	Strongly Agree
AIP ensures sufficient budget for teaching and learning materials.	4.88	Strongly Agree
Overall Weighted Mean	4.82	Strongly Agree

Legend: 4.20-5.00 Strongly Agree; 3.40-4.19 Agree; 2.60-3.39 Undecided; Disagree; 1.80-2.59; Strongly Disagree – 1.00-1.79

The lowest-rated indicator was stakeholder involvement in planning, with a weighted mean of 4.66; however, this still fell within the “Strongly Agree” category. Enhancing stakeholder participation may further strengthen AIP implementation, consistent with DepEd's emphasis on participatory school planning and Aina and Bipath's (2020) findings on the importance of stakeholder engagement in financial management. Overall, the findings indicate strong AIP implementation, with stakeholder participation identified as a potential area for further improvement.

Table 3 presents the participants' perceptions of SIP optimization in terms of MOOE utilization, planning priorities, stakeholder participation, facility improvement, and accountability. The results show an overall weighted mean of 4.83, interpreted as "Strongly Agree," indicating that the participants perceived SIP practices as contributing to the integration of MOOE, long-term planning, accountability, stakeholder participation, and school operations. Efficiency and sustainability received the highest weighted mean of 4.96, while stakeholder consultation received the lowest at 4.70; both indicators were interpreted as "Strongly Agree." These findings support the view of Sorenson and Goldsmith (2024) regarding the importance of aligning school budgets with identified priorities, needs assessments, and systematic planning. However, the findings alone cannot establish the actual efficiency of expenditures, the achievement of sustainability outcomes, or compliance with budgetary requirements.

Table 3

School Improvement Plan (SIP) optimization

Indicators	Mean	Description
The SIP effectively integrates MOOE funds to support school programs and projects.	4.82	Strongly Agree
The SIP aligns with the long-term goals and development plans of the school.	4.74	Strongly Agree
The SIP ensures that MOOE funds are used for improving student learning outcomes.	4.86	Strongly Agree
The SIP includes provisions for professional development and training for teachers.	4.78	Strongly Agree
The school effectively implements SIP programs within the allocated MOOE budget	4.84	Strongly Agree
Stakeholders (teachers, parents, community members) are consulted in SIP planning and budgeting.	4.70	Strongly Agree
The SIP helps in maintaining and upgrading school facilities and equipment.	4.84	Strongly Agree
There is a clear reporting and auditing system to track SIP-related expenditures.	4.84	Strongly Agree
The school administration ensures that SIP activities are executed on time and within budget.	4.82	Strongly Agree
The SIP contributes to the overall efficiency and sustainability of the school's operations.	4.96	Strongly Agree
Overall Weighted Mean	4.83	Strongly Agree

Legend: 4.20–5.00 Strongly Agree; 3.40–4.19 Agree; 2.60–3.39 Undecided; Disagree; 1.80–2.59; Strongly Disagree – 1.00–1.79

Table 4 presents the overall assessment of AIP and SIP practices in terms of MOOE utilization, financial accountability, transparency, budget optimization, and monitoring. The results show an overall weighted mean of 4.88, interpreted as "Strongly Agree," indicating that the participants perceived AIP-SIP coordination, financial management, monitoring, and

accountability practices as supportive of effective MOOE utilization. AIP-SIP coordination and efforts to optimize MOOE received the highest rating ($M = 4.94$), while financial accountability policies received the lowest rating ($M = 4.82$), although both were interpreted as “Strongly Agree.” Consistent with DepEd Order No. 44, s. 2015, the findings underscore the importance of participatory planning and accountable resource management (DepEd, 2015). However, as the results are perception-based, further improvements in MOOE management may be achieved through enhanced financial documentation, stakeholder involvement, and regular monitoring.

Table 4

General Assessment – AIP and SIP

Indicators	Mean	Description
The coordination between the AIP and SIP ensures optimal utilization of the MOOE budget.	4.94	Strongly Agree
The school has clear policies for financial accountability and budget management.	4.82	Strongly Agree
There is sufficient training for school personnel on budget planning and financial management.	4.86	Strongly Agree
External audits and evaluations help improve the transparency of MOOE fund usage.	4.84	Strongly Agree
The school administration continuously seeks ways to optimize and maximize the MOOE budget.	4.94	Strongly Agree
The implementation of the AIP and SIP is regularly monitored to ensure that planned activities are achieved and MOOE funds are used appropriately.	4.86	Strongly Agree
Overall Weighted Mean	4.88	Strongly Agree

Legend: 4.20–5.00 Strongly Agree; 3.40–4.19 Agree; 2.60–3.39 Undecided; Disagree; 1.80–2.59; Strongly Disagree – 1.00–1.79

Table 5 presents the participants’ evaluation of financial planning and budget allocation in relation to MOOE management. The results show an overall weighted mean of 4.88, interpreted as “Strongly Agree,” indicating that the participants perceived financial planning and MOOE budgeting as generally aligned with the schools’ priorities and future needs. The highest-rated indicator was the organization of the financial planning process, which obtained a weighted mean of 4.92, while data-based decision-making, alignment with school objectives, and financial forecasting each received a weighted mean of 4.86. These findings support Brimley et al. (2021), who emphasized the importance of budgeting and financial planning in educational resource allocation and decision-making. However, the results are based on the participants’ perceptions and, therefore, cannot be considered evidence of the adequacy of budget allocations, the accuracy of financial forecasts, or the efficiency of budgetary decisions.

Table 5*Financial planning and budget allocation*

Indicators	Mean	Description
The school follows a well-structured financial planning process for MOOE allocation.	4.92	Strongly Agree
MOOE budgeting aligns with the school's long-term goals and sustainability strategies.	4.86	Strongly Agree
The school uses data-driven decision-making for MOOE budget distribution.	4.86	Strongly Agree
The school has a clear system to prioritize expenditures based on urgency and importance.	4.88	Strongly Agree
The budget allocation process ensures a balance between academic, operational, and infrastructure needs.	4.90	Strongly Agree
The school uses financial forecasting techniques to anticipate future requirements.	4.86	Strongly Agree
Overall Weighted Mean	4.88	Strongly Agree

Legend: 4.20-5.00 Strongly Agree; 3.40-4.19 Agree; 2.60-3.39 Undecided; Disagree; 1.80-2.59; Strongly Disagree – 1.00-1.79

Table 6 presents the participants' assessment of resource management and cost optimization in MOOE utilization, focusing on expenditure tracking, cost reduction, resource shortages, energy conservation, and inventory control.

Table 6*Resource management and cost optimization*

Indicators	Mean	Description
The school effectively monitors and controls expenditures to avoid unnecessary costs.	4.88	Strongly Agree
The school applies cost-reduction strategies while maintaining service quality.	4.74	Strongly Agree
The school leverages economies of scale when procuring supplies and services.	4.80	Strongly Agree
The school has a system for tracking and minimizing resource was shortage.	4.76	Strongly Agree
The school adopts energy-saving and eco-friendly practices to reduce operational costs.	4.66	Strongly Agree
The school implements effective inventory management to prevent over-purchasing or shortages.	4.70	Strongly Agree
Overall Weighted Mean	4.76	Strongly Agree

Legend: 4.20-5.00 Strongly Agree; 3.40-4.19 Agree; 2.60-3.39 Undecided; Disagree; 1.80-2.59; Strongly Disagree – 1.00-1.79

The results show an overall weighted mean of 4.76, interpreted as “Strongly Agree.” The participants perceived expenditure control, cost reduction, procurement, resource monitoring, energy conservation, and inventory management practices as being favorably implemented. Monitoring and controlling expenditures received the highest weighted mean of 4.88, while energy-saving and environmentally friendly practices received the lowest at 4.66; both were interpreted as “Strongly Agree.” These findings support Levenson's (2022) assertion that effective resource allocation and efficient management are essential strategies for

managing limited school resources. However, the findings are based solely on the participants' perceptions and cannot independently verify the actual extent of cost savings, procurement efficiency, inventory management, or reductions in operating expenses.

Table 7 presents the participants' assessment of MOOE transparency and financial accountability practices.

Table 7

Transparency, accountability, and stakeholder involvement

Indicators	Mean	Description
The school ensures transparency in the allocation and utilization of MOOE funds.	4.80	Strongly Agree
A clear reporting system is in place to document financial transactions related to MOOE.	4.90	Strongly Agree
The school conducts regular financial audits and evaluations are conducted to maintain accountability.	4.92	Strongly Agree
Stakeholders (teachers, parents, community) are actively involved in budget planning and decision-making.	4.80	Strongly Agree
The school administration provides financial reports and updates to relevant stakeholders.	4.82	Strongly Agree
The school provides training for staff on financial transparency and accountability.	4.84	Strongly Agree
Overall Weighted Mean	4.85	Strongly Agree

Legend: 4.20–5.00 Strongly Agree; 3.40–4.19 Agree; 2.60–3.39 Undecided; Disagree; 1.80–2.59; Strongly Disagree – 1.00–1.79

The results yielded an overall weighted mean of 4.85, interpreted as “Strongly Agree.” There are favorable practices in MOOE transparency, financial reporting, audits, staff training, and stakeholder involvement. Financial audits and evaluations received the highest rating, with a weighted mean of 4.92, while transparency in MOOE allocation and stakeholder involvement received the lowest rating of 4.80; both indicators remained within the “Strongly Agree” range. These findings support Sorenson and Goldsmith (2024), who emphasized that accounting, auditing, and collaborative decision-making are important components of responsible school budgeting. However, the findings are based on the participants' perceptions and do not independently verify the completeness of financial reports, the quality of audits, or the actual extent of stakeholder participation. Therefore, the results should be understood as favorable perceptions of accountability practices rather than objective evidence of strong financial management.

Table 8 presents the participants' evaluation of sustainability strategies in MOOE management, focusing on financial planning, resource generation, environmental practices, technology use, awareness, and continuous improvement. The results show an overall

weighted mean of 4.84, interpreted as “Strongly Agree.” The highest ratings were obtained for the inclusion of sustainability objectives in budgeting and the promotion of sustainability awareness, both with a weighted mean of 4.90, while investments in technology received the lowest rating of 4.76. These findings support Beasy et al. (2023), who emphasized the important role of schools in integrating sustainability into education and institutional practices. However, the results reflect the participants’ perceptions and do not provide direct evidence of actual financial savings, environmental impacts, or the long-term efficiency of the implemented practices. Therefore, the findings should be interpreted as evidence of favorable perceptions toward sustainability-related practices rather than objective evidence of sustainable and effective MOOE management.

Table 8

Sustainability strategies in MOOE management

Indicators	Mean	Description
The school incorporates sustainability goals in MOOE financial planning.	4.90	Strongly Agree
The school explores alternative funding sources (e.g., grants, partnerships, donations) are explored to support school operations.	4.82	Strongly Agree
The school implements green initiatives to reduce utility expenses.	4.78	Strongly Agree
The school invests in technology to streamline financial processes and optimize efficiency.	4.76	Strongly Agree
The school promotes awareness program on sustainability among staff and students.	4.90	Strongly Agree
The school regularly evaluates the effectiveness of its sustainability initiatives and adjust plans accordingly.	4.86	Strongly Agree
Overall Weighted Mean	4.84	Strongly Agree

Legend: 4.20-5.00 Strongly Agree; 3.40-4.19 Agree; 2.60-3.39 Undecided; Disagree; 1.80-2.59; Strongly Disagree – 1.00-1.79

Table 9 presents the participants’ assessment of business administration practices aimed at enhancing MOOE efficiency, with emphasis on financial risk management, benchmarking, partnerships, continuous improvement, and innovation. The results show an overall weighted mean of 4.83, interpreted as “Strongly Agree.” Continuous improvement received the highest rating, with a weighted mean of 4.88, while financial risk management received the lowest rating of 4.74; both indicators were interpreted as “Strongly Agree.” These findings support the view of Daft (2022) that continuous improvement, risk awareness, and strategic resource management facilitate sound decision-making. Nevertheless, the results are based solely on the participants’ perceptions and cannot be considered evidence of actual improvements in financial efficiency, risk reduction, or MOOE savings. Therefore, the

findings should be interpreted as favorable perceptions of business administration practices rather than objective evidence of their effectiveness.

Table 9

Business administration practices for efficiency improvement

Indicators	Mean	Description
The school applies business administration strategies to improve MOOE efficiency.	4.78	Strongly Agree
The school implements financial risk management principles that are implemented to safeguard school funds.	4.74	Strongly Agree
The school benchmarks its techniques to compare financial performance with other institutions.	4.84	Strongly Agree
Strategic partnerships with local businesses and government agencies help in resource mobilization.	4.86	Strongly Agree
The school maintains a continuous improvement framework in place to optimize MOOE budget utilization.	4.88	Strongly Agree
The school encourages innovation in financial management practices to enhance efficiency.	4.86	Strongly Agree
Overall Weighted Mean	4.83	Strongly Agree

Legend: 4.20-5.00 Strongly Agree; 3.40-4.19 Agree; 2.60-3.39 Undecided; Disagree; 1.80-2.59; Strongly Disagree – 1.00-1.79

Table 10 presents the relationship between school characteristics and MOOE utilization through Overall Annual Improvement Plan (OAIP) and Overall School Improvement Plan (OSIP) optimization. The results show that school population, school facilities, and school category had significant positive relationships with AIP optimization ($r = .299$, $p = .035$; $r = .307$, $p = .030$; and $\rho = .318$, $p = .024$, respectively). The number of non-teaching personnel was also significantly related to overall AIP-SIP optimization ($\rho = .290$, $p = .041$). These findings suggest that school size, available facilities, and personnel may be associated with how effectively schools plan and utilize MOOE funds.

The findings support the Resource-Based View and Financial Management Theory, which emphasize the importance of efficiently managing and allocating human, physical, and financial resources (Tomal & Schilling, 2013). They are also consistent with Lean Management principles, which advocate for the efficient utilization of resources and the minimization of wasteful expenditures (Womack & Jones, 2003). Sound planning and administration are important for maximizing available resources and enhancing MOOE utilization. However, given the correlational design of the study, the results indicate associations rather than causal relationships.

Table 10*Test of significant relationship between school characteristics and business administration practices*

		OAIP	OSIP	OAIPSIP
School Population	Pearson Correlation	.299*	0.175	0.04
	Sig. (2-tailed)	0.035	0.225	0.784
	N	50	50	50
No. Non-Teaching Personnel	Spearman's rho	0.267	0.263	.290*
	Sig. (2-tailed)	0.061	0.065	0.041
	N	50	50	50
School Facilities	Pearson Correlation	.307*	0.089	-0.094
	Sig. (2-tailed)	0.03	0.541	0.518
	N	50	50	50
School Category	Spearman's rho	.318*	0.257	0.189
	Sig. (2-tailed)	0.024	0.072	0.189
	N	50	50	50

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

*. Correlation is significant at the 0.05 level (2-tailed).

Table 11 presents the relationship between school characteristics and business administration practices in MOOE management, with emphasis on financial planning, resource management, transparency, sustainability, and overall business administration practices. The number of non-teaching personnel was significantly related to overall business administration practices ($\rho = .338$, $p = .016$), while school facilities had a significant relationship with transparency ($r = .280$, $p = .049$). In addition, lot area was significantly related to financial planning ($\rho = .424$, $p = .002$), sustainability strategies ($\rho = .333$, $p = .018$), and overall business administration practices ($\rho = .288$, $p = .043$). Institutional resources and personnel are associated with the implementation of business administration practices in schools.

Table 11*Test of significant relationship between MOOE optimization and business administration practices*

		Financial Planning	Resource Management	Transparency	Sustainability	Business Administration
No. Non-Teaching Personnel	Spearman's rho	0.264	0.241	0.113	0.135	.338*
	Sig. (2-tailed)	0.064	0.092	0.433	0.351	0.016
	N	50	50	50	50	50
School Facilities	Pearson Correlation	0.183	0.163	.280*	0.154	0.205
	Sig. (2-tailed)	0.203	0.257	0.049	0.287	0.154
	N	50	50	50	50	50
Lot Area	Spearman's rho	.424**	0.257	0.221	.333*	.288*
	N	50	50	50	50	50
School Category	Spearman's rho			.327*		
	Sig. (2-tailed)			0.02		
	N			50		

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

*. Correlation is significant at the 0.05 level (2-tailed).

The findings are consistent with the Resource-Based View, which emphasizes the importance of organizational resources and capabilities (Barney et al., 2020), and with financial management principles that promote effective planning, budgeting, and control (Finkler et al., 2022). They also align with Lean Management principles emphasizing efficiency and the elimination of waste (Womack & Jones, 2003). However, given the correlational nature of the study, these findings demonstrate relationships among variables rather than cause-and-effect relationships.

Table 12 presents the relationships between MOOE optimization and business administration practices in terms of financial planning, resource management, transparency, sustainability, and overall business administration.

Table 12

Test of relationship between MOOE optimization and business administration approach to MOOE

		Financial Planning	Resource Management	Transparency	Sustainability	Business Administration
OAIP	Spearman's rho	.393**	.324*	0.234	.391**	.321*
	Sig. (2-tailed)	0.005	0.022	0.101	0.005	0.023
	N	50	50	50	50	50
OSIP	Spearman's rho	.586**	.511**	.521**	.597**	.516**
	Sig. (2-tailed)	0	0	0	0	0
	N	50	50	50	50	50
OAIPSIP	Spearman's rho	.642**	.417**	0.239	.466**	.528**

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

* . Correlation is significant at the 0.05 level (2-tailed).

The results show that financial planning ($\rho = .642$, $p < .001$), overall business administration practices ($\rho = .528$, $p < .001$), sustainability strategies ($\rho = .466$, $p < .001$), and resource management ($\rho = .417$, $p < .001$) were positively and significantly associated with overall AIP-SIP optimization (OAIPSIP). Transparency was not significantly associated with overall AIP optimization ($\rho = .234$, $p = .101$) but showed a significant positive association with SIP optimization ($\rho = .521$, $p < .001$). Effective financial planning, resource management, sustainability practices, and overall business administration are closely associated with MOOE optimization through AIP and SIP. The results support Financial Management Theory, which emphasizes planning, budgeting, and control for effective resource utilization (Finkler et al., 2022), and are consistent with Lean Management principles that promote efficiency and waste reduction (Womack & Jones, 2003). However, given the correlational design of the study, these associations should not be interpreted as cause-and-effect relationships.

6. Conclusion

The study shows that MOOE optimization is significantly associated with financial planning, resource management, sustainability practices, and business administration practices. The AIP and SIP support schools in planning and utilizing MOOE funds in accordance with identified needs and priorities. Among the variables examined, financial planning demonstrated the strongest relationship with overall MOOE optimization.

The study has several limitations that should be considered when interpreting the findings. First, the use of self-reported data may have introduced response bias, as participants' assessments may not fully reflect actual financial management practices. Second, the sample was limited to 50 public schools in Congressional District III, Schools Division of Nueva Ecija, which restricts the generalizability of the findings. Third, cross-sectional design captures conditions at a single point in time and therefore does not account for changes in MOOE management practices over time. Finally, the correlational approach identifies associations among the variables but does not establish cause-and-effect relationships. Accordingly, the findings should be interpreted within the context of the participating schools. Therefore, future studies should involve larger samples and include schools from other divisions and cities to determine the generalizability of the findings. Researchers may also consider longitudinal or mixed methods designs and incorporate objective financial records to complement self-reported data and provide a more comprehensive assessment of MOOE management.

Based on the findings of the study, the school heads should strengthen budgeting, spending prioritization, and financial oversight to ensure that MOOE funds are utilized in accordance with SIP-AIP priorities and the actual needs of the school. To achieve this, the Schools Division Office should provide continuous training and technical assistance in financial management, procurement, resource optimization, sustainability, and MOOE monitoring, with priority given to schools requiring additional support. Similarly, finance officers and MOOE coordinators should strengthen expenditure monitoring, financial documentation, forecasting, cost control, inventory management, and financial reporting to promote the responsible and efficient utilization of MOOE funds. Schools should promote the active participation of teachers, parents, learners, and community members in MOOE planning, monitoring, and evaluation while strengthening transparency and accountability mechanisms.

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Institutional Review Board Statement

This study was conducted in accordance with the ethical guidelines set by the Graduate School, Wesleyan University-Philippines. The conduct of this study has been approved and given relative clearance(s) by the Graduate School, Wesleyan University-Philippines and the participation in the study was voluntary, and informed consent was obtained from all respondents before they participated in the survey. All collected data were handled with strict confidentiality and used exclusively for academic research purposes.

AI Declaration

The authors declare the use of Artificial Intelligence (AI) in writing this paper. In particular, the authors used QuillBot and Scribbr as support for improving clarity, grammar, and organization. These tools were used only for paraphrasing and refining language, while all core ideas, analysis, and conclusions remain the author's original work. All AI-assisted outputs were carefully reviewed for accuracy and properly cited following APA 7th Edition. The author assumes full responsibility for the integrity, originality, and authenticity of the study in ensuring proper review and editing the contents using AI.

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