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Website: https://etcor.org
iJOINED ETCOR
P - ISSN 2984-7567
E - ISSN 2945-3577
The Exigency
P - ISSN 2984-7842
E - ISSN 1908-3181

Demographic and Financial Predictors of School Performance in Rural Public Elementary Schools: Evidence from Glan District 4

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Received: 24 May 2025 **Revised**: 27 June 2025 **Accepted**: 04 July 2025

Available Online: 07 July 2025

Volume IV (2025), Issue 3, P-ISSN – 2984-7567; E-ISSN - 2945-3577

https://doi.org/10.63498/etcor402

Abstract
Aim: This study aimed to determine how school demographic characteristics and financial constraints influence academic performance in rural public elementary schools, with specific focus on Glan District 4. It sought to identify whether budget allocation, per-student expenditure, funding sources, resource availability, and infrastructure development serve as significant predictors of enrolment, participation, promotion, graduation, and dropout rates.
Methodology: A descriptive-correlational research design was employed. Data were gathered through validated survey questionnaires and official school performance records. Descriptive statistics, Spearman's Rho correlation, ANOVA, and linear regression analyses were used to examine the relationship and predictive influence of financial and demographic variables on academic outcomes.
Results: Findings revealed that while most financial management indicators were rated to a high extent, infrastructure development remained a moderate concern. Performance indicators showed generally high enrolment, promotion, and graduation rates, and very low dropout rates. Significant correlations were found between per-student expenditure, overall financial management, and reduced dropout rates. However, regression and ANOVA analyses showed no significant predictive influence of financial constraints on broader school performance metrics.
Conclusion: Demographic and financial factors alone do not significantly predict school performance. While effective financial management—particularly per-student spending—contributes to lower dropout rates, other non-financial factors such as leadership, community engagement, and instructional practices play more substantial roles. The study highlights the need for integrative, multi-factor strategies in improving education outcomes in rural areas.
Keywords: *Academic Performance, Financial Management, Rural Education, School Demographics, Student Dropout*

INTRODUCTION

Education continues to be a cornerstone of national development, particularly in rural contexts where access to learning remains unequal. In the Philippines, rural schools often face layered challenges—geographic isolation, underfunding, lack of infrastructure, and limited access to trained educators—which compromise their capacity to deliver quality education. These systemic issues are especially evident in the Glan District 4 of Sarangani Province, where schools must operate with minimal resources yet are expected to meet the same academic benchmarks as their urban counterparts.

Globally, research has consistently shown that both demographic and financial variables significantly shape educational outcomes (Reardon, 2019; Sims, 2020). In low- and middle-income countries, public education systems grapple with limited per-student expenditure and infrastructure backlogs (Al-Samarrai & Benveniste, 2021). In the Philippine setting, these limitations are further compounded by geographic barriers and disparities in budget allocation (Abrigo, 2021). For instance, schools located more than 30 kilometers from the town center, especially those accessible only via dirt roads, report increased absenteeism and teacher attrition—factors directly influencing school performance (Barrett et al., 2019; Yamauchi & Parandekar, 2014).

School demographics, such as size and teacher-student ratio, play a dual role. Smaller schools often foster stronger relationships between students and teachers, yet they operate with lower total funding due to enrollment-

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based budget formulas (Monte de Ramos, 2021; Cruz & Vargas, 2021). Conversely, larger schools benefit from greater resource pools but face overcrowding and reduced instructional quality (Wang & Calvano, 2022). These dynamics make it essential to assess how demographic compositions intersect with financial constraints to affect outcomes such as enrollment, participation, promotion, graduation, and dropout rates.

The Philippine government has introduced various reforms to address these inequalities, including School-Based Management (SBM) and public-private partnerships. While SBM has empowered school leaders in decision-making, studies show that many rural school heads lack the training or autonomy to manage financial resources effectively (Estonanto, 2022; Tadle, 2021). Moreover, rural schools continue to face persistent gaps in per-student spending, which affects their ability to procure instructional materials, maintain facilities, and support extracurricular programs (Orbeta et al., 2021; Abrigo, 2021).

In Glan District 4, a predominantly rural region, many schools fall below the national average in terms of budget allocation and infrastructure availability. Yet, anecdotal reports suggest that some schools have found innovative ways to manage limited resources, raising questions about which specific financial and demographic factors predict stronger school performance. Previous studies have largely examined urban-centric data or focused on isolated performance indicators. There remains a clear gap in understanding how a combination of financial management and demographic context affects multiple academic indicators simultaneously in rural public elementary schools.

Thus, this study is both timely and relevant. Anchored in the Resource-Based View (Barney, 1991), Systems Theory (von Bertalanffy, 1968), and Educational Production Function Theory (Hanushek, 1979), the study seeks to uncover the predictive relationships between school demographics, financial constraints, and academic performance in the rural context of Glan District 4. Findings from this research aim to inform local and national education policymakers on how to equitably allocate resources, strengthen support systems for rural schools, and close the persistent performance gap between rural and urban institutions.

Ultimately, the goal is to contribute evidence that can shape data-driven, context-specific interventions—ensuring that rural learners are not left behind simply because of where they live or how their schools are resourced.

Objectives

This study aimed to examine the demographic and financial predictors of school performance in rural public elementary schools, focusing on the unique context of Glan District 4 in Sarangani Province. It specifically sought to determine how school-level demographic characteristics and financial constraints influence key indicators of educational outcomes. The research was guided by the following questions:

1. What is the demographic profile of the schools in Glan District 4 in terms of:
   - 1.1. School size category;
   - 1.2. Student population;
   - 1.3. Teacher population;
   - 1.4. Maintenance and Other Operating Expenses (MOOE);
   - 1.5. Distance from the center of the poblacion (in kilometers);
   - 1.6. Type of access roads from the school to the national highway?
2. What is the extent of financial constraints faced by schools in Glan District 4, specifically in terms of:
   - 2.1. Budget allocation;
   - 2.2. Per-student expenditure sufficiency;
   - 2.3. Diversity and reliability of funding sources;
   - 2.4. Availability of instructional and operational resources;
   - 2.5. Status of infrastructure development?
3. What is the level of school performance in Glan District 4 in relation to the following key indicators:
   - 3.1. Enrollment rate;
   - 3.2. Participation rate;
   - 3.3. Promotion rate;
   - 3.4. Graduation rate;
   - 3.5. Dropout rate?
4. Do demographic factors significantly influence school performance indicators such as enrollment, participation, promotion, graduation, and dropout rates?
5. Do financial constraints significantly predict or affect school performance among public elementary schools in Glan District 4?

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Hypotheses:

Ho$_1$: Demographic factors significantly influence school performance indicators such as enrollment, participation, promotion, graduation, and dropout rates.

Ho$_2$: Financial constraints significantly predict or affect school performance among public elementary schools in Glan District 4.

METHODS

Research Design

This study used a descriptive-correlational design to explore how demographic and financial factors predict school performance in rural public elementary schools in Glan District 4. Data were collected through validated surveys and secondary records to analyze the relationship between school profiles, financial constraints, and key performance indicators.

Population and Sampling

This study was conducted in Glan District 4, Sarangani Province, involving 15 public elementary schools. The population included all school heads and selected teachers from these schools. A total enumeration technique was used for the 15 school heads, while stratified random sampling was employed to select 150 teachers, proportionately distributed based on school size.

Instrument

A structured survey questionnaire was utilized to gather data, thoughtfully designed to align with the study's objectives and grounded in established literature on educational finance. The instrument was divided into three parts: the first covered school demographic information; the second assessed financial constraints using a five-point Likert scale; and the third captured school performance indicators, supported by official data from the Division Planning Office. To strengthen content validity, the questionnaire was reviewed by experts in school leadership and financial management. A pilot test was also conducted with teachers from a neighboring district, resulting in a Cronbach's alpha above 0.70—indicating that the instrument met accepted standards for reliability and internal consistency.

Data Collection

Data were collected across 15 public elementary schools in Glan 4 District, Sarangani Province. Upon securing approvals from the Graduate School and District Supervisor, the researchers personally administered the validated questionnaires to school heads and selected teachers. Despite logistical challenges in remote areas, data collection proceeded smoothly with full cooperation from school personnel. Completed forms were retrieved on-site to ensure accuracy and completeness, and all data were processed in adherence to research ethics and study objectives.

Treatment of Data

Descriptive and inferential statistics were used to analyze the data. Frequencies, percentages, means, and standard deviations summarized school demographics and financial indicators. Spearman's Rho, ANOVA, and Linear Regression tested relationships and predictive effects on school performance at a 0.05 significance level.

Ethical Considerations

The researchers ensured that all ethical research protocols were strictly observed to safeguard the rights and welfare of all individuals and institutions involved in the conduct of the study.

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RESULTS and DISCUSSION

Table 1.
Profile of the School in terms

Profile	f	(%)
Student Population		
Less than 500 students	12	80
500–999 students	3	20
3.Teacher Population		
Less than 10	9	60
11-15	3	20
16 or more	3	20
Less than P 100,000.00 per year	5	33.33
P 200,000.00-250,000.00	4	26.67
P 250,001.00-300,000.00 per year	0	0
P 300,001.00 or more	6	40
Less than 10 Kilometers	0	0
11-20 Kilometers	0	0
21-30 Kilometers	3	20
31-40 Kilometers	2	13.33
More than 41 Kilometers	10	66.67
Paved road	5	33.33
Gravel road	4	26.67
Dirt road	6	40.00

Table 1 presents the demographic characteristics of the 15 participating schools in Glan District 4. The majority of the schools (80%) have student populations of less than 500, categorizing them as small schools under the Department of Education's classification system (DepEd, 2017). Only 20% fall under the medium-sized category (500–999 students), and none exceed 1,000 students. This distribution aligns with national trends in rural areas, where most schools serve smaller populations due to scattered settlements and geographic isolation (Barrett et al., 2019; Wang & Calvano, 2022).

In terms of teacher population, 60% of the schools employ fewer than 10 teachers, while only 20% have 11–15 and another 20% employ 16 or more. This reflects the limited teaching workforce typically available in rural areas, which may negatively impact individualized instruction and teacher workload (Blatchford et al., 2021; Tarraya, 2023).

Regarding financial allocation, 33.33% of schools receive less than ₱100,000 in annual MOOE, while 40% receive ₱300,001 or more. The absence of schools in the ₱250,001–₱300,000 bracket indicates a sharp disparity in funding levels. These findings echo studies noting unequal distribution of financial resources in geographically isolated and disadvantaged areas (Briones, 2022; Cruz & Vargas, 2021).

Geographically, 66.67% of schools are situated more than 41 kilometers from the poblacion (town center), and none are located within 20 kilometers. This substantial distance affects access to learning materials, community engagement, and even teacher retention (Luna & Francisco, 2020; Yamauchi & Parandekar, 2014).

Finally, the schools' accessibility via road types further complicates logistics. While 33.33% are accessible through paved roads, a combined 66.67% rely on gravel (26.67%) or dirt roads (40%). Poor road conditions have been linked to higher absenteeism and delays in resource delivery, as documented in infrastructure studies (Barrett et al., 2019; Francisco & Tanaka, 2019).

The school profiles underscore the structural challenges faced by public elementary schools in Glan District 4. The prevalence of small school sizes, limited teacher numbers, and difficult geographic conditions reinforce the need for targeted interventions and equitable financial support, particularly in underserved rural areas.

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Financial Constraints of Schools

Table 2.
Extent of Financial Management in Terms of Budget Allocation and Utilization

Statement	Mean	SD	Interpretation
1. The school's budget allocation is sufficient to cover essential operational needs.	3.40	1.06	High Extent
2. The budget allocated to our school has increased over the past few years.	3.98	0.84	High Extent
3. The school leadership effectively manages the allocated budget to ensure optimal use of resources.	3.78	1.06	High Extent
4. The budget is appropriately distributed across various school functions.	3.76	1.13	High Extent
Section Mean	**3.73**	**1.02**	**High Extent**

Table 2 shows that schools in Glan District 4 reported a high extent of financial management in budget allocation and utilization (M = 3.73, SD = 1.02). The highest-rated item, increased budget over the years (M = 3.98), reflects the perceived gains from reforms like School-Based Management and improved MOOE support (Estonanto, 2022; DepEd, 2017).

Effective budget management (M = 3.78) and equitable distribution (M = 3.76) suggest that school leaders are utilizing resources strategically, consistent with findings on the role of financial leadership in rural education (Cruz & Vargas, 2021). This supports the Resource-Based View (Barney, 1991), emphasizing that internal capabilities, such as leadership and budgeting skills, influence school performance more than funding alone (Briones, 2022).

While variability in responses indicates differences in school experiences, the overall findings affirm that strong financial governance helps rural schools manage limited resources effectively.

Table 3.
Extent of Per Student Expenditure

Statement	Mean	SD	Interpretation
1. The current per-student expenditure is sufficient to provide quality education.	3.41	1.06	High Extent
2. The per-student expenditure allows for the provision of necessary learning materials.	3.29	1.12	Moderate Extent
3. The school allocates adequate funds for each student's extracurricular needs.	3.68	0.93	High Extent
4. There is a direct relationship between per-student expenditure and student performance.	3.50	0.96	High Extent
Section Mean	**3.47**	**1.02**	**High Extent**

Table 3 shows that schools in Glan District 4 rated per-student expenditure at a high extent (M = 3.47, SD = 1.02), indicating perceived adequacy in supporting both academic and extracurricular needs. The highest score was for funding extracurricular activities (M = 3.68), while the lowest was for learning materials (M = 3.29), reflecting limitations aligned with national data on underfunded instructional resources (Abrigo, 2021; Orbeta et al., 2021). Despite this, school heads expressed confidence in managing funds effectively, supporting the idea that efficient resource use, more than increased funding alone, contributes to improved outcomes (Briones, 2022; Reardon, 2019).

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Table 4.
Extent of Financial Management in Terms of Funding Sources

Statement	Mean	SD	Interpretation
1. The school receives funding from a variety of sources.	3.58	0.99	High Extent
2. The current funding sources are reliable and consistent.	3.60	0.85	High Extent
3. The school is able to secure additional funding when needed.	3.62	0.92	High Extent
4. There are sufficient alternative funding sources available.	3.55	0.92	High Extent
Section Mean	**3.59**	**0.92**	High Extent

Table 4 indicates that schools in Glan District 4 perceive their funding sources to be highly sufficient (M = 3.59, SD = 0.92), with school heads confident in securing additional and consistent support beyond MOOE. The ability to access diverse and alternative funding streams suggests proactive resource mobilization through partnerships and community involvement, consistent with School-Based Management principles (Mercado, 2021; Estonanto, 2022). These findings align with the Resource-Based View (Barney, 1991), highlighting that strategic use of varied resources enhances institutional performance. Overall, schools show strong financial adaptability despite rural limitations.

Table 5.
Extent of Financial Management of Resource Allocation Implemented in the Schools of Glan 4 District in terms of Infrastructure Development

	Statements	Mean	SD	Interpretation
1	The school has adequate infrastructure (classrooms, laboratories, facilities) to support student learning.	2.78	1.05	Moderate Extent
2	The current infrastructure is regularly maintained and upgraded as needed.	2.89	1.04	Moderate Extent
3	Infrastructure limitations (classroom size, technology, etc.) negatively affect the quality of education.	3.35	0.98	Moderate Extent
4	The school has a long-term plan for improving and expanding its infrastructure.	3.81	0.93	High Extent
	Section Mean	**3.21**	**1.00**	**Moderate Extent**

Table 5 shows that infrastructure development in Glan District 4 schools was rated at a moderate extent (M = 3.21, SD = 1.00), indicating ongoing limitations in facilities, maintenance, and resource investment. While the presence of long-term infrastructure plans scored highest (M = 3.81), adequacy of current spaces received the lowest rating (M = 2.78), highlighting persistent gaps. These findings align with studies showing that poor infrastructure hinders learning outcomes (Barrett et al., 2019; Orbeta et al., 2021). Challenges in maintenance and procurement, especially in remote areas (Francisco & Tanaka, 2019), further exacerbate these issues. Guided by Systems Theory (von Bertalanffy, 1968), the results stress the need for sustained and targeted investments in rural school infrastructure.

Table 6.
Summary on the Extent of Financial Management of Resource Allocation Implemented in the Schools of Glan 4 District

	Indicators	Mean	SD	Interpretation
1	Budget Allocation	3.73	1.02	High Extent
2	Sufficiency of Per Student Expenditure	3.47	1.02	High extent
3	Funding Sources	3.59	0.92	High extent
4	Resource Availability	3.59	0.92	High Extent
5	Infrastructure Development	3.21	1.00	Moderate Extent

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Table 6 summarizes financial management in Glan District 4, with four indicators—budget allocation (M = 3.73), per-student expenditure (M = 3.47), funding sources (M = 3.59), and resource availability (M = 3.59)—rated at a high extent, reflecting effective financial practices and alignment with School-Based Management goals (Estonanto, 2022; Mercado, 2021). Only infrastructure development scored moderately (M = 3.21), echoing prior findings and highlighting ongoing capital investment challenges in rural schools (Barrett et al., 2019). While operational funds are managed well, schools still require support for large-scale infrastructure, consistent with the Resource-Based View (Barney, 1991).

Level of Academic Performance

Table 7.
Level of the Academic Performance of the Public Schools of Glan 4 District

School	Enrolment Rate (in %)	Participation Rate (in %)	Promotion Rate (in %)	Graduation Rate (in %)	Dropout Rate (in %)
A	100.00	100.00	119.00	100.00	0.00
B	114.89	100.00	101.43	100.00	0.00
C	103.50	100.00	112.63	100.00	0.00
D	100.00	100.00	97.27	96.00	2.36
E	98.16	98.16	112.62	100.00	2.50
F	105.78	100.00	144.50	100.00	0.00
G	100.00	100.00	89.93	96.00	0.00
H	100.00	100.00	100.00	96.94	0.00
I	39.67	22.67	86.23	88.23	0.00
J	100.43	100.00	100.00	100.00	0.00
K	115.03	93.51	84.79	100.00	0.00
L	112.12	112.12	78.68	100.00	0.00
M	100.00	96.11	99.94	100.00	0.00
N	116.32	100.00	91.63	97.30	0.00
O	114.76	96.10	93.19	100.00	0.00
Overall Rate	99.89	94.58	101.80	98.16	0.32

As shown in Table 7, the overall academic performance of public elementary schools in Glan District 4 is relatively strong across multiple indicators. The average enrolment rate is 99.89%, while the participation rate stands at 94.58%, indicating that most school-age children are enrolled and actively attending classes. These figures reflect commendable efforts by school leaders and community stakeholders to ensure access and participation, even in geographically disadvantaged settings (Reyes & Dela Cruz, 2021).

The average promotion rate is slightly above 100% (101.80%), which may be attributed to the promotion of over-aged or previously retained students, a common scenario in multi-grade and catch-up programs in rural schools (Llego, 2020). This result demonstrates that schools are making strides in reducing learning delays and improving student progression.

Graduation performance is equally positive, with an average graduation rate of 98.16%. High graduation levels suggest that most students who begin schooling in the district are able to complete their basic education, despite resource limitations. This aligns with the findings of Bernardo and Mendoza (2020), who emphasized that strong school-community collaboration enhances student retention and completion rates in rural Philippine settings.

Notably, the dropout rate is very low, averaging 0.32%, with most schools reporting zero dropouts. This may indicate effective school-based interventions, such as feeding programs, child protection initiatives, and flexible learning arrangements (DepEd, 2022). However, one school (School E) recorded a relatively high dropout rate of 2.5%, warranting further investigation into localized challenges such as poverty, distance from school, or family-related responsibilities (Alinsunurin, 2021).

Interestingly, a few schools reported enrolment and promotion rates exceeding 110%, such as Schools B, F, and N. While this may appear unusual, such rates can result from transfers, re-enrollments, or late registrations

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being counted within the same reporting period (Orbeta et al., 2021). Nevertheless, it also underscores the fluidity of student data in rural schools and the need for accurate monitoring systems.

Overall, these performance metrics indicate that the majority of schools in Glan District 4 are achieving positive educational outcomes, despite financial and infrastructural limitations. These results affirm the critical role of school leadership, financial stewardship, and community engagement in promoting inclusive and sustained learning in rural contexts.

Relationship Between Financial Management and Academic Performance

Table 8.
Results of Spearman's Rho Correlation Analysis between Financial Management and Academic Performance in Glan 4 District

	Enrolment Rate	Participation Rate	Promotion Rate	Graduation Rate	Dropout Rate	Overall Academic Performance
Budget Allocation and Utilization	-.190 (.498)	-.243 (.382)	-.061 (.828)	.292 (.291)	-.324 (.238)	.580 (.306)
Per Student Expenditure	.020 (.943)	-.223 (.425)	.001 (.997)	.042 (.882)	-.597* (.019)	.462 (.434)
Funding Sources	.119 (.672)	-.148 (.598)	.041 (.883)	.193 (.490)	0.554* (.032)	.100 (.873)
Resource Availability	.016 (.953)	-.254 (.361)	.054 (.848)	.252 (.365)	-.332 (.227)	.205 (.741)
Infrastructure Development	.359 (.188)	-.464 (.082)	-.270 (.330)	.205 (.464)	-.421 (.118)	.308 (.614)
Overall Financial Management	.160 (.569)	-.250 (.369)	-.060 (.832)	.259 (.351)	-.571* (.026)	.300 (.624)

**Significant at the .05 level (2-tailed).*

Table 8 presents the results of the Spearman's Rho correlation analysis examining the relationship between various financial management indicators and school performance outcomes in Glan District 4. Most correlation coefficients were not statistically significant, indicating that financial variables generally do not have a strong or consistent linear relationship with performance indicators. However, three notable correlations emerged as significant at the 0.05 level.

First, per-student expenditure was significantly and negatively correlated with dropout rate ($r = -.597$, $p = .019$). This suggests that higher spending per student is associated with lower dropout rates, supporting previous studies that link targeted financial support with improved retention (Reardon, 2019; Abrigo, 2021). When students' educational and welfare needs are adequately funded, they are more likely to stay in school, particularly in low-income, rural communities (Alinsunurin, 2021).

Second, funding sources were positively correlated with dropout rate ($r = .554$, $p = .032$). This finding, while statistically significant, is counterintuitive and may indicate a complex relationship wherein schools with more diverse or external funding streams may also be responding to higher dropout challenges through compensatory mechanisms. It may also reflect reporting inconsistencies or reactive funding arrangements in high-risk areas.

Third, the overall financial management index showed a significant negative correlation with dropout rate ($r = -.571$, $p = .026$). This supports the idea that better overall financial management—encompassing budget use, resource allocation, and infrastructure—contributes to reducing student attrition, which aligns with the findings of Cruz and Vargas (2021) and the systemic insights from Systems Theory (von Bertalanffy, 1968).

On the other hand, none of the financial variables showed a significant relationship with enrolment, participation, promotion, or graduation rates. This suggests that while financial inputs are essential, they may not directly influence these performance indicators in a linear manner, especially in rural settings where non-financial factors such as community support, leadership, and geographic accessibility may play stronger roles (Reyes & Dela Cruz, 2021).

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In summary, the analysis highlights that effective and sufficient financial management—particularly in per-student expenditure—plays a crucial role in minimizing dropout rates, thereby supporting student continuity. However, other academic performance indicators may be shaped by a broader set of structural and contextual influences beyond financial factors alone.

Analysis of Variance on School Performance Indicators

Table 9.
Results of Analysis of Variance (ANOVA) on the Key Influence of the School Performance Indicators in Glan 4 District

Indicators	Sum	Mean	SD	df	F	Sig	Interpretation
Enrolment Rate	1421.66	94.78	31.70	4	83.149	.767	Not Significant
Participation Rate	1418.67	94.58	20.29	70			
Promotion Rate	1511.84	100.79	16.37				
Graduation Rate	1474.47	98.30	3.20				
Dropout Rate	4.86	.32	.86				

**Significant at the .05 level (2-tailed).*

Table 9 presents the results of the Analysis of Variance (ANOVA) conducted to determine whether there were significant differences in the five school performance indicators—enrolment rate, participation rate, promotion rate, graduation rate, and dropout rate—based on selected groupings. The ANOVA results revealed that none of the indicators showed statistically significant differences, as evidenced by the p-value of .767 for the enrolment rate and similar non-significant values across other indicators.

The non-significant result suggests that variations in school performance across Glan District 4 are not strongly influenced by the variables used for grouping in this analysis. This outcome may indicate a degree of uniformity in how schools across the district perform, regardless of potential demographic or financial differences. It also implies that external factors—such as community involvement, learner readiness, or localized support systems—could be contributing to a consistent level of performance among schools (Bernardo & Mendoza, 2020; Reyes & Dela Cruz, 2021).

While ANOVA is a robust method for comparing group means, its usefulness depends on clearly defined groupings with adequate variance. The lack of significant findings may also reflect homogeneity in school contexts within the district, or the relatively small sample size used for the analysis. As noted by Field (2018), small or unbalanced group sizes can reduce the statistical power of ANOVA, making it difficult to detect real differences even when they exist.

This result aligns with the idea that school performance in rural areas is less differentiated by traditional financial or demographic categorizations and more influenced by complex, overlapping factors such as teacher commitment, parental involvement, and cultural values (Barrett et al., 2019).

In conclusion, the ANOVA findings emphasize the need for multi-dimensional analysis in evaluating school performance and caution against over-reliance on isolated variables or grouping methods. Future research may consider clustered or mixed-model approaches that better capture the interactions between financial, demographic, and contextual variables.

Predictive Influence of Financial Constraint on School Performance

Table 10.
Results of Linear Regression Analysis between Financial Constraint and the School Performance in Glan 4 District

Indicators	Sum of Squares	df	Mean Square	F	Sig	Interpretation
Regression	324.085	5	64.817	.482	.782	Not Significant
Residual	1209.607	9	134.401			
Total	1533.692	14				

**Significant at the .05 level (2-tailed).*

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Table 10 presents the results of the linear regression analysis conducted to determine whether financial constraints significantly predict school performance in Glan District 4. The analysis yielded an F-value of 0.482 with a p-value of 0.782, indicating that the model is not statistically significant at the 0.05 level. This means that the combined influence of the five financial constraint indicators—budget allocation, per-student expenditure, funding sources, resource availability, and infrastructure development—does not significantly predict the variation in school performance outcomes.

This result suggests that while financial constraints are relevant to school operations, they may not directly determine performance levels in the studied rural context. As supported by previous findings, school outcomes are often shaped by a broader range of non-financial factors, including teacher quality, parental support, leadership, and learner motivation (Reyes & Dela Cruz, 2021; Luna & Francisco, 2020). In rural and close-knit communities, even schools with limited financial resources may still perform well due to strong community engagement and adaptive leadership strategies (Villanueva & Torres, 2018).

Moreover, this result aligns with the findings from the ANOVA and Spearman's correlation analyses, reinforcing the idea that financial inputs alone are not sufficient predictors of academic success. According to Hanushek et al. (2016), increases in education spending do not automatically translate to improved outcomes unless funds are strategically allocated and accompanied by accountability and instructional quality.

The lack of significant predictive power in this model also resonates with the Systems Theory framework (von Bertalanffy, 1968), which posits that school performance is an output of interconnected subsystems—resources, leadership, culture, and environment—working together. Focusing on one subsystem (i.e., finance) may provide an incomplete picture.

In summary, while financial resources are undeniably important, the regression results underscore the need for integrative, context-sensitive approaches to improving school performance. Interventions should not only increase funding but also strengthen leadership capacity, instructional quality, and stakeholder engagement.

Conclusion

This study explored the extent to which demographic and financial factors predict school performance in the rural public elementary schools of Glan District 4. The results revealed that while schools generally demonstrated effective financial management—especially in terms of budget allocation, per-student expenditure, and sourcing of funds—infrastructure development remains a moderate concern. Despite financial constraints and challenging school profiles (e.g., small student population, remote location, unpaved access), school performance indicators such as enrolment, promotion, and graduation rates were notably high, with dropout rates remaining exceptionally low.

Statistical analysis further revealed that per-student expenditure and overall financial management were significantly associated with reduced dropout rates, highlighting their importance in student retention. However, regression and ANOVA findings indicated that financial and demographic variables do not significantly predict or explain variation in broader school performance metrics. This suggests that other contextual factors—such as school leadership, community engagement, and socio-cultural dynamics—play a more defining role in shaping student outcomes.

Overall, the findings underscore the resilience and adaptive leadership of rural schools, but also point to persistent inequities in infrastructure and resource availability that must be addressed for sustainable improvement.

Recommendations

To improve rural school performance, it is recommended that infrastructure investments be strengthened through targeted programs enhancing classrooms, water systems, ICT tools, and access roads. Given the observed link between per-student expenditure and lower dropout rates, MOOE allocation should be reviewed to ensure equitable support for remote and underserved schools. Capacity-building for school heads in financial leadership, budgeting, and fund management must be intensified to optimize School-Based Management practices. Furthermore, community-driven resource generation should be encouraged by fostering partnerships with LGUs and private stakeholders. Future improvement efforts must adopt multi-factor approaches that go beyond financial inputs, incorporating leadership, instruction, and community engagement. Lastly, further research using larger and more diverse samples is needed to uncover deeper, non-financial determinants of academic success in rural settings.

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