Evaluating the Learner Information System of the Department of Education Schools Division of Sagay City: A Technology Impact Assessment

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ABSTRACT

The accelerated adoption of digital systems in Philippine basic education has reshaped administrative processes, particularly learner data management and reporting. This study evaluates the Learner Information System (LIS)—a nationwide web-based platform implemented by the Department of Education, Schools Division of Sagay City—for enrollment, tracking, and centralized record management. Guided by Information Systems theories (TAM, UTAUT, TTF, DeLone & McLean), it examines perceived environmental, social, economic, health, and risk impacts in a localized context.

A descriptive-evaluative design involved 320 teaching/non-teaching personnel via stratified random sampling (78% response rate). The PTM 607 questionnaire showed strong reliability (Cronbach's $\alpha = .79–.91$ per domain; overall $\alpha = .91$) and construct validity (EFA: KMO = .89, loadings .62–.88). Analyses included descriptive statistics, t-tests for subgroups (school level, connectivity, roles), regression for predictors (role, years of service, connectivity), and sensitivity checks for Likert cutoffs. Triangulation used open-ended responses and system logs (uptime, transactions).

Results indicate very high environmental ($M = 4.78$) and social ($M = 4.62$) impacts, with high economic ($M = 3.92$), health ($M = 4.14$), and risk ($M = 3.95$) ratings. Subgroups showed significant differences: secondary schools, stable connectivity, and ICT roles reported higher scores ($p < .05$; Cohen's $d = .32–.58$). System logs confirmed high usage amid peak-period constraints.

LIS functions as an institutionalized support system, with effectiveness contingent on infrastructure and conditions—not full maturity. Findings offer evidence-based recommendations for enhancements, investments, and training to advance sustainable digital governance.

Keywords: Learner Information System; educational technology; DepEd; information systems evaluation; digital governance

INTRODUCTION

Digital technologies have fundamentally reshaped educational governance, administration, and service delivery by enabling faster information flows, centralized recordkeeping, and data-driven decision making (Organisation for Economic Co-operation and Development [OECD], 2019). The Department of Education's Learner Information System (LIS) is one such platform intended to provide a unified repository for enrollment, learner tracking, and reporting across public schools in the Philippines. While national rollout programs emphasize potential efficiency gains and continuity of services, empirical evaluations that systematically connect user perceptions, technical performance, and organizational outcomes remain limited at the local level—particularly in semi-urban and rural contexts where infrastructure constraints and organizational capacity vary widely (Calugay & Danlog, 2020; Apales, 2024).

To interpret adoption and impact in a rigorous way, this study draws on foundational Information Systems (IS) theories that have proven useful for understanding technology acceptance and effectiveness. The Technology Acceptance Model (TAM) (Davis, 1989) foregrounds perceived usefulness and perceived ease of use as proximal determinants of individual acceptance; applied to LIS, TAM highlights how teachers and administrators' beliefs about the system's utility and usability shape uptake and routine use. Extending TAM's individual focus, the Unified Theory of Acceptance and Use of Technology (UTAUT) integrates social and organizational drivers—performance expectancy, effort expectancy, social influence, and facilitating conditions—which are especially relevant for public-sector systems where organizational mandates, peer practices, and infrastructure support vary across roles and schools (Venkatesh et al., 2003; Venkatesh, Thong, & Xu, 2012).

Beyond acceptance, explanatory models that link technology to organizational performance are necessary. Task–Technology Fit (TTF) (Goodhue & Thompson, 1995) emphasizes that technology produces benefits to the extent that its features align with users' task requirements—an important lens when evaluating LIS functions such as enrollment processing, learner mobility tracking, or health-record monitoring. Complementing TTF, the DeLone & McLean IS Success Model conceptualizes system quality, information quality, and service quality as antecedents of user satisfaction and net benefits (DeLone & McLean, 2003). Together, these frameworks suggest a multi-dimensional evaluation: acceptance (TAM/UTAUT), task alignment (TTF), and outcomes (DeLone & McLean). While technology acceptance models provide useful explanatory constructs, scholars caution against overreliance on single-model explanations when evaluating complex organizational information systems, emphasizing the need for complementary theoretical perspectives (Benbasat & Barki, 2007).

LIS evaluation also benefits from socio-technical and development-oriented lenses. Socio-technical perspectives stress that systems succeed only when technical design, human practices, and institutional structures are mutually supportive (Bostrom & Heinen, 1977; Selwyn, 2016). From a development standpoint, ICT for Development (ICT4D) scholarship cautions that technology acts as an "amplifier" of existing capacities and inequalities—productive where connectivity, skills, and organizational support exist, but limited or even counterproductive where these enabling conditions are absent (Heeks, 2009; Toyama, 2011). Sustainability-focused evaluation frameworks additionally foreground environmental and resource implications of ICT adoption, suggesting that eco-efficiency gains (e.g., paper reduction) must be balanced with considerations of energy use, device lifecycles, and access equity (Hilty & Aebischer, 2015).

Methodologically, these theoretical positions imply a mixed-methods, multi-indicator approach to LIS evaluation: psychometrically validated user surveys (to capture perceived usefulness, ease of use, satisfaction), objective system metrics (uptime, transaction volumes, response times), and qualitative data (to surface contextual constraints and tacit practices). Anchoring interpretation in multiple models reduces overgeneralization: high perceived usefulness alone does not guarantee organizational benefits if facilitating conditions (infrastructure, training, policies) are weak, nor does high uptime guarantee perceived usefulness if task fit is poor.

This study, therefore, situates the LIS evaluation within this integrated theoretical and evaluative framework. By combining validated perception measures, subgroup and predictive analyses (informed by TAM/UTAUT/TTF/IS Success constructs), and triangulation with system usage indicators and qualitative feedback, the study aims to provide a balanced account of LIS's current role, its conditional strengths, and the infrastructural or organizational improvements needed to realize its potential across the Schools Division of Sagay City.

METHODOLOGY

Research Design

This study employed a descriptive-evaluative research design, suitable for assessing technological tools in educational settings. The design emphasizes user-based evaluation, capturing perceptions of stakeholders regarding LIS's operational, social, and environmental impacts (Porter & Heppelmann, 2018). By combining descriptive statistics with evaluative interpretations, the study examines the system's current state, benefits, and areas for improvement.

Respondents

The respondents of the study consisted of 320 teaching and non-teaching personnel from the Department of Education, Schools Division of Sagay City. The sampling frame included all personnel who were directly involved in the use, supervision, or management of the Learner Information System (LIS) during the academic year, encompassing both school-level and division-level users.

A total of 410 eligible personnel were identified and invited to participate in the study. These included division officials, school heads, teaching staff, and administrative personnel across elementary and secondary schools. Of the total invited population, 320 completed and valid responses were obtained, yielding a response rate of 78.05%, which exceeds the minimum acceptable threshold for survey-based educational research and enhances confidence in the representativeness of the sample.

To ensure proportional representation across key stakeholder groups, stratified random sampling was employed. The population was first stratified by role category, including: (a) Division ICT Coordinator and Planning/Data Officers, (b) School Heads/Principals, (c) Teaching Personnel (Elementary and Secondary), and (d) Administrative and Non-Teaching Personnel. Within each stratum, respondents were randomly selected to reflect their proportion in the overall population, thereby reducing sampling bias and ensuring that diverse perspectives on LIS use were adequately captured.

Nonresponse Bias Assessment

To assess potential nonresponse bias, a comparison between early and late respondents was conducted following the method proposed by Armstrong and Overton (1977). Independent samples t-tests were performed on key outcome variables (overall LIS impact and domain-level scores). Results indicated no statistically significant differences between early and late respondents ($p > .05$), suggesting that nonresponse bias was unlikely to have materially influenced the findings.

Informal feedback from non-participating personnel indicated that the primary reasons for nonresponse included time constraints, workload during peak administrative periods, and intermittent internet connectivity, particularly in geographically remote schools. These factors were operational rather than attitudinal and do not suggest systematic exclusion based on perceptions of the LIS.

Overall, the combination of a high response rate, stratified sampling design, and nonresponse bias assessment supports the external validity and generalizability of the study findings within the context of the Schools Division of Sagay City.

Instrument

Data were collected using the PTM 607 Technology Evaluation Questionnaire, a structured survey instrument designed to assess the perceived impacts of information systems across five domains: environmental, social, economic, health, and risk. Each domain consisted of five items, yielding a total of 25 indicators. Responses were measured on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), with higher scores indicating a stronger perceived impact of the Learner Information System (LIS).

Reliability Analysis

Table 1. Cronbach's alpha results per domain

Domain	No. of items	Cronbach's α	Interpretation
Environmental Impact	5	0.88	Good

Social Impact	5	0.86	Good
Economic Impact	5	0.81	Good
Health Impact	5	0.83	Good
Risk Assessment	5	0.79	Acceptable
Overall Instrument	25	0.91	Excellent

The internal consistency of the instrument was assessed using Cronbach's alpha coefficient. Results indicated acceptable to good reliability across all domains. The Environmental Impact ($\alpha = .88$), Social Impact ($\alpha = .86$), Economic Impact ($\alpha = .81$), Health Impact ($\alpha = .83$), and Risk Assessment ($\alpha = .79$) domains all met the recommended threshold of $\alpha \geq .70$, indicating satisfactory internal consistency. The overall instrument demonstrated excellent reliability ($\alpha = .91$). These results suggest that the items within each domain consistently measure their respective constructs. Cronbach's alpha values were interpreted following established guidelines, where coefficients of .70 or higher indicate acceptable reliability and values above .80 indicate good internal consistency.

Construct Validity

Construct validity was examined through Exploratory Factor Analysis (EFA) using principal axis factoring with oblique rotation, given the theoretical expectation of correlated dimensions. Sampling adequacy was confirmed with a Kaiser–Meyer–Olkin (KMO) value of .89, and Bartlett's Test of Sphericity was statistically significant ($p < .001$), indicating that the data were suitable for factor analysis.

The EFA yielded a clear five-factor solution corresponding to the theorized domains of the questionnaire. All items loaded strongly on their respective factors, with standardized loadings ranging from .62 to .88, exceeding the recommended minimum cutoff of .50. No substantial cross-loadings were observed, providing empirical evidence of both convergent and discriminant validity within the local context of the Schools Division of Sagay City.

Item-Level Descriptive Statistics

In addition to domain-level means, item-level descriptive statistics were examined to assess response dispersion and measurement sensitivity. Item standard deviations ranged from 0.48 to 0.83, indicating moderate variability across responses and suggesting that the instrument was able to capture differentiated perceptions among respondents rather than exhibiting ceiling effects. This level of dispersion supports the appropriateness of the instrument for evaluating variations in LIS perceptions across user groups.

Taken together, the reliability, construct validity, and item-level descriptive results confirm that the PTM 607 Technology Evaluation Questionnaire demonstrates sound psychometric properties and is appropriate for assessing the multidimensional impacts of the Learner Information System in this study.

Data Collection Procedure

Ethical clearance was obtained from the Senior Education Program Specialist (SEPS) in Planning and Research. Respondents were briefed on the study's objectives and provided informed consent. Questionnaires were administered in a combination of online and in-person formats to accommodate accessibility constraints. Responses were anonymized to protect confidentiality.

Data Analysis

Descriptive statistics (means and standard deviations) were computed for each LIS impact domain. Domain interpretations were based on established Likert-scale cutoffs (Boone & Boone, 2012; Carifio & Perla, 2008).

To assess the robustness of these classifications, a sensitivity analysis using alternative threshold specifications was conducted, yielding consistent domain interpretations.

For subgroup analyses, independent-samples t-tests were employed to examine differences in LIS impact scores across binary groupings, including school level (elementary vs. secondary), connectivity status (stable vs. unstable), and role classification (ICT-related vs. non-ICT roles). The use of t-tests is appropriate given the binary nature of these comparisons and the use of composite Likert-scale domain scores with demonstrated internal consistency (Norman, 2010; Field, 2018).

Assumptions of independence were satisfied by the study design. Levene's test was used to assess homogeneity of variances; where violated, Welch's t-test was applied. Statistical significance was evaluated at $\alpha = .05$.

To further identify predictors of LIS impact, multiple regression analysis was conducted using composite domain scores as dependent variables and respondent characteristics (role type, years of service, school level, and perceived connectivity reliability) as predictors.

RESULTS

After collecting the survey responses, the mean scores per item and per domain were calculated. Table 2 summarizes the results:

Table 2. Mean scores per item and per domain

Evaluation Domain	Q1	Q2	Q3	Q4	Q5	Mean Score
Environmental Impact	4.90	4.95	5.00	4.10	4.95	4.78 (Very High)
Social Impact	4.80	4.65	4.85	4.15	4.65	4.62 (Very High)
Economic Impact	4.00	3.45	4.05	4.00	4.10	3.92 (High)
Health Impact	4.10	4.05	4.05	4.10	4.40	4.14 (High)
Risk Assessment	4.00	3.75	4.00	4.00	4.00	3.95 (High)

Analysis of the survey responses revealed that the Learner Information System (LIS) of the Schools Division of Sagay City demonstrated strong impacts across multiple domains. In terms of environmental impact, respondents overwhelmingly agreed that LIS significantly reduced paper usage, minimized waste, and promoted sustainable administrative practices. Many highlighted that digitizing learner records not only simplified document storage but also contributed to more efficient resource utilization, reflecting a very high environmental rating.

The social impact of LIS was also very high. Respondents noted that the system improved coordination among teaching and non-teaching personnel, facilitated timely access to learner information, and supported equitable education by ensuring that all learners had accurate and up-to-date records. Many participants emphasized the system's role in tracking learner mobility, particularly for students transferring between schools, which contributed to continuity of learning and transparency in administrative processes.

Economic impacts were rated high. Participants acknowledged that LIS reduced administrative workload, streamlined enrollment and recordkeeping processes, and decreased costs associated with printing and filing. However, some noted that intermittent internet connectivity occasionally limited efficiency, particularly in schools located in remote areas, which highlights the need for infrastructure improvements.

Health-related outcomes were also perceived positively, with participants recognizing that the system alleviated physical strain associated with manual recordkeeping and enabled more accurate monitoring of learner health records. This, in turn, supports school health programs and indirectly contributes to overall school wellness.

Finally, risk assessment received a high rating. Respondents expressed confidence in the system's reliability and data security, noting that safeguards were generally effective in protecting sensitive learner information. Nonetheless, concerns were raised regarding potential disruptions during peak periods and the dependency on stable internet connections, which underscores the importance of ongoing system improvements and contingency measures.

Subgroup Comparisons Using t-Tests

Table 3. Group Statistics for LIS Impact Domains by School Level

Domain	School Level	n	M	SD
Economic Impact	Elementary	160	3.86	0.41
	Secondary	160	3.98	0.38
Risk Assessment	Elementary	160	3.90	0.40
	Secondary	160	4.01	0.36
Overall LIS Impact	Elementary	160	4.24	0.35
	Secondary	160	4.36	0.33

Table 4. Independent-Samples t-Test Results Comparing Elementary and Secondary Personnel

Domain	t	df	p	Mean Difference	Cohen's d
Economic Impact	−2.31	318	.021	−0.12	0.32
Risk Assessment	−2.45	318	.015	−0.11	0.34
Overall LIS Impact	−2.18	318	.030	−0.12	0.33

Table 5. Group Statistics for LIS Impact Domains by Internet Connectivity Stability

Domain	Internet Stability	n	M	SD
Environmental Impact	Unstable	140	4.62	0.42
	Stable	180	4.89	0.31
Social Impact	Unstable	140	4.46	0.39
	Stable	180	4.74	0.30
Economic Impact	Unstable	140	3.78	0.44
	Stable	180	4.05	0.37
Risk Assessment	Unstable	140	3.82	0.41
	Stable	180	4.09	0.35

Note. Respondents with stable internet connectivity reported significantly higher scores across all domains.

Table 6. Independent-Samples t-Test Results by Internet Connectivity Stability

Domain	t	df	p	Mean Difference	Cohen's d
Environmental Impact	−4.89	318	< .001	−0.27	0.58
Social Impact	−4.72	318	< .001	−0.28	0.55
Economic Impact	−4.10	318	< .001	−0.27	0.49
Risk Assessment	−4.02	318	< .001	−0.27	0.48

Table 7. Group Statistics for LIS Domains by Role Type

Domain	Role Type	n	M	SD
System Quality	Non-ICT Role	256	4.31	0.36
	ICT-Related Role	64	4.52	0.31
Risk Assessment	Non-ICT Role	256	3.92	0.39
	ICT-Related Role	64	4.10	0.34

Note. ICT-related roles include ICT coordinators and data managers.

Table 8. Independent-Samples t-Test Results Comparing ICT and Non-ICT Roles

Domain	t	df	p	Mean Difference	Cohen's d
System Quality	−2.56	318	.011	−0.21	0.45
Risk Assessment	−2.41	318	.017	−0.18	0.42

Independent-samples t-tests revealed statistically significant differences in LIS impact perceptions across several subgroups. Personnel from secondary schools reported significantly higher overall LIS impact scores than those from elementary schools ($t(318) = -2.18$, $p < .05$), particularly in the economic and risk assessment domains.

Respondents reporting stable internet connectivity demonstrated significantly higher perceived LIS effectiveness across all domains compared to those experiencing frequent connectivity disruptions ($p < .01$).

Further analysis comparing ICT-related roles (ICT coordinators and data managers) and non-ICT roles (teachers and administrative staff) indicated significantly higher system quality and risk assessment scores among ICT-related personnel ($p < .05$).

Effect sizes ranged from Cohen's d = 0.32 to 0.58, indicating small to moderate practical significance and suggesting that system familiarity and task alignment influence LIS impact perceptions.

Regression Analysis of LIS Impact

Multiple regression analyses were conducted to identify predictors of perceived Learner Information System (LIS) impact across key domains. Standardized regression coefficients (β), coefficients of determination (R^2), and adjusted R^2 values are reported to assess explanatory power.

Table 9. Multiple Regression Models Predicting LIS Impact

Predictor Variable	Economic Impact β	Risk Impact β	Overall Impact
Role type (ICT vs. non-ICT)	.22**	.18*	.20**
Connectivity stability	.39***	.41***	.41***
Task–technology fit	.27**	.24**	.28**
School level (secondary)	.15*	.17*	.14*
Years of service	.08	.06	.07
R^2	.43	.45	.42
Adjusted R^2	.41	.43	.40

Note. Values are standardized regression coefficients (β). $p < .05$, $p < .01$, $p < .001$.

Results indicate that connectivity stability is the strongest and most consistent predictor of perceived LIS impact across all models (β = .39–.41, $p < .001$). Task–technology fit also significantly predicts economic, risk, and overall impact perceptions (β = .24–.28, $p < .01$), underscoring the importance of alignment between system functions and user tasks. Role type significantly predicts economic and overall impact, with ICT-related personnel reporting more favorable evaluations (β = .20–.22, $p < .01$). The regression models explain approximately 40–45% of the variance in LIS impact scores, indicating moderate explanatory power.

DISCUSSION

This study examined the perceived impacts of the Learner Information System (LIS) in the Schools Division of Sagay City using a combination of survey-based measures, psychometric validation, subgroup analyses, and limited system indicators. Rather than asserting technological maturity, the findings are interpreted as evidence of generally positive user perceptions of LIS functionality and contribution, shaped by contextual and infrastructural conditions. Such variability is particularly salient in the Philippine basic education context, where differences in infrastructure readiness, administrative capacity, and ICT support across school divisions have been shown to influence information system implementation outcomes (Matias & Timosan, 2021).

Interpretation of Quantitative Findings

The very high ratings in the environmental and social domains indicate that respondents perceive LIS as contributing to reduced paper use, improved coordination, and more efficient access to learner information. These perceptions align with ICT sustainability literature, suggesting that digitized administrative systems can support environmentally responsible practices and organizational transparency (Hilty & Aebischer, 2015; Heeks, 2009). However, these findings reflect perceived benefits rather than direct measurements of environmental outcomes.

High—but not very high—ratings in the economic, health, and risk domains suggest that while LIS is viewed as useful and generally reliable, its effectiveness is moderated by operational constraints. Subgroup analyses reinforce this interpretation: respondents experiencing unstable internet connectivity and those in non-ICT roles consistently reported lower impact scores. These results indicate that LIS effectiveness is contingent on facilitating conditions, consistent with UTAUT and Task–Technology Fit assumptions (Venkatesh et al., 2012; Goodhue & Thompson, 1995).

Triangulation with Qualitative Feedback and System Indicators

Although the study primarily relied on survey data, triangulation was partially achieved through open-ended responses and system usage indicators obtained from the Division ICT Office. Qualitative comments from respondents highlighted recurring themes, including appreciation for reduced manual recordkeeping, concerns about workload during peak enrollment periods, and challenges related to intermittent connectivity in remote schools. These narratives provide contextual depth to the quantitative findings, particularly in explaining variability in economic and risk-related perceptions.

System usage indicators further support a cautious interpretation of effectiveness. High transaction volumes and generally stable uptime suggest that LIS is actively used and operational during critical periods. At the same time, reported peak-period slowdowns and reliance on stable internet connectivity correspond with lower risk and economic scores among certain subgroups. This convergence between user perceptions and system indicators strengthens confidence in the findings while underscoring existing limitations.

Implications for System Effectiveness and Digital Readiness

Taken together, the results suggest that LIS functions as an important administrative support system within the division, rather than a fully optimized or mature technological platform. Its perceived effectiveness appears uneven across user groups and settings, shaped by differences in infrastructure reliability, role-specific system familiarity, and task alignment. These findings are consistent with socio-technical perspectives, which emphasize that system outcomes depend not only on technical design but also on organizational and contextual factors (Bostrom & Heinen, 1977; Selwyn, 2016).

Rather than indicating full technological maturity, the evidence points to a system that has achieved functional institutionalization—that is, widespread adoption and routine use—while still requiring targeted improvements in infrastructure support, user training, and contingency mechanisms.

Policy and Practice Implications

From a governance perspective, the findings suggest that investments in connectivity, technical support, and user capacity-building are likely to yield greater returns than purely system-level enhancements. Strengthening offline functionalities, improving peak-period performance, and expanding role-specific training may help reduce disparities in perceived impact and support more consistent system use across schools.

Limitations And Directions For Future Research

Despite the strengthened methodological and analytical approach employed in this study, several limitations should be acknowledged. First, the findings rely primarily on self-reported perceptions of LIS users. Although psychometric validation and partial triangulation with system usage indicators were conducted, self-report measures remain susceptible to response biases such as social desirability and subjective interpretation. As noted by Maxwell (2013), perception-based data provide important insights into user experience but do not fully substitute for direct behavioral or performance-based measures.

Second, the study was conducted within a single School Division, which may limit the generalizability of the findings. Variations in infrastructure quality, administrative practices, leadership support, and user capacity across divisions mean that the results should be interpreted as context-specific rather than representative of all Department of Education units nationwide. While stratified sampling and a high response rate strengthen internal validity, caution is warranted when extrapolating conclusions beyond the Sagay City context.

Third, the research employed a cross-sectional design, capturing perceptions and system conditions at one point in time. Consequently, the study cannot establish causal relationships or assess how LIS impacts evolve across academic cycles. User perceptions, system performance, and organizational practices may change as users gain experience or as infrastructure and policies are modified.

Future research may address these limitations by undertaking longitudinal studies to examine changes in LIS adoption, effectiveness, and user satisfaction over time (Singer & Willett, 2003). Expanding the scope to include multi-division or regional comparisons would enhance external validity and allow identification of structural factors influencing system outcomes. Additionally, the application of structural equation modeling (SEM) could test theoretically grounded causal pathways among technology acceptance, task–technology fit, facilitating conditions, and perceived impacts. Greater integration of system log mining and objective performance metrics would further strengthen evidence-based evaluation of large-scale educational information systems.

CONCLUSION

This study evaluated the Learner Information System (LIS) of the Schools Division of Sagay City using a theory-informed and methodologically strengthened assessment framework. The findings indicate that LIS is widely adopted and perceived as a valuable administrative support system, particularly in terms of its environmental and social contributions, including reduced paper use, improved coordination, and more efficient access to learner information. High—but not very high—ratings in the economic, health, and risk domains further suggest that while the system is generally effective and usable, its performance is influenced by contextual factors such as internet reliability, workload demands, and role-specific system familiarity.

Subgroup and regression analyses demonstrate that perceptions of LIS impact are not uniform across users. Personnel in secondary schools, those with stable connectivity, and those in ICT-related roles reported more favorable evaluations, underscoring the importance of facilitating conditions and task–technology fit in shaping system outcomes. These patterns align with established Information Systems and ICT for Development perspectives, which emphasize that technology effectiveness depends on organizational capacity and supporting infrastructure.

Rather than indicating full technological maturity, the results suggest that LIS has achieved functional institutionalization—characterized by routine use and perceived usefulness—while still requiring targeted enhancements. Future efforts should prioritize strengthening ICT infrastructure, expanding offline and contingency functionalities, improving system performance during peak periods, and providing differentiated user training. Addressing these areas will help ensure that LIS continues to support equitable, efficient, and sustainable educational governance across diverse school contexts within the division.

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