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Evaluating the Effectiveness of the Digital Reporting System for Facility Management at Holy Cross College: Implications for Improved Campus Operations

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Abstract:

This study evaluated the effectiveness of the Digital Facility Reporting System (DFRS) of Holy Cross College, Sta. Rosa, Nueva Ecija, in enhancing facility management operations. Guided by the Technology Acceptance Model, the research examined user perceptions on usability, ease of use, usefulness, satisfaction, and system performance. Results showed that users highly rated the system's usability (M=3.29), ease of use (M=3.28), usefulness (M=3.28), and satisfaction (M=3.25), indicating that it effectively supports reporting efficiency and user engagement. The DFRS also demonstrated strong performance in speed of reporting (M=3.37), accuracy (M=3.37), timeliness of response (M=3.29), and documentation quality (M=3.41). Thematic analysis of open-ended responses revealed key challenges such as intermittent internet connectivity, limited user familiarity, and delayed administrative responses during peak periods. Despite these issues, the DFRS improved communication, accountability, and maintenance response time across departments. The study recommends continuous system optimization, user capability-building, and integration of real-time monitoring features to sustain and enhance operational efficiency.

Keywords **— Digital Facility Reporting System, Technology Acceptance Model, Facility Management, Higher Education, System Efficiency**

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I. INTRODUCTION

Facility management is a critical component of higher education institutions, ensuring that learning environments remain safe, functional, and conducive to academic pursuits (Santos et al., 2025). The management of physical resources—such as classrooms, laboratories, offices, and common areas—directly influences the overall experience of students and faculty (Noveras et al., 2025). Traditionally, many colleges and universities have relied on manual facility reporting systems involving paper-based forms, personal communication, or phone calls. While these approaches serve their purpose, they often lead to delays, inefficiencies, and weak accountability mechanisms (Omar et al., 2024). With the growing emphasis on digital transformation in education, institutions are increasingly integrating digital tools to streamline administrative workflows, including facility reporting processes.

At Holy Cross College, the Digital Facility Reporting System (DFRS) was introduced as part of an initiative to modernize campus operations. Rather than a standalone application, the DFRS functions as a process-driven solution utilizing Google Forms for issue reporting. Through this

system, students, faculty, and staff can conveniently submit facility-related concerns online, which are then documented, categorized, and forwarded to the responsible personnel for action. The cloud-based setup enhances transparency and traceability compared to traditional paper-based or verbal reporting (Santos et al., 2025). However, while the DFRS has improved communication flow, its overall effectiveness in terms of usability, response time, and user satisfaction has not yet been formally evaluated.

Evaluating the effectiveness of digital systems is often guided by the Technology Acceptance Model (TAM), which identifies perceived ease of use and perceived usefulness as key determinants of user acceptance (Nilashi & Abumalloh, 2025). Within facility management, systems theory provides an additional framework, viewing reporting, monitoring, and maintenance as interdependent processes that must operate cohesively for optimal efficiency (Karanasios, 2025). Furthermore, the Plan–Do–Check–Act (PDCA) continuous improvement cycle emphasizes the importance of regularly assessing and refining institutional systems to ensure sustained alignment with organizational goals (Samuel & Ferrer, 2025).

Globally, facility management in higher education has evolved into a strategic function that promotes sustainability, safety, and operational efficiency (Mahmoud et al., 2024). Effective facility reporting not only facilitates timely repairs and maintenance but also informs long-term planning and resource allocation (Atkin & Brooks, 2021). Conversely, manual processes often result in underreporting, incomplete documentation, and delays in issue resolution (Wynn, 2021).

The adoption of digital reporting systems addresses many of these limitations. Research shows that digital tools enhance accountability, efficiency, and user engagement (Leyesa et al., 2020). In higher education, user-friendly platforms—such as online forms, portals, and mobile applications—improve the accuracy of reporting and the responsiveness of maintenance services (Mallari et al., 2025). Effectiveness is commonly evaluated in terms of user satisfaction, timeliness of response, documentation accuracy, and contribution to institutional decision-making (Di Sutam et al., 2024).

Nevertheless, challenges persist in implementing digital reporting systems, including limited technical literacy, lack of training, and weak integration with other administrative functions (Ermita & Florencondia, 2019). Institutions that promote feedback, conduct orientations, and foster continuous improvement tend to achieve greater system effectiveness (Santos & Jocson, 2024).

Despite these global insights, research on digital facility reporting within Philippine higher education remains limited. While numerous studies have explored digital learning management and student information systems (Annamalai, 2021), few have examined the application of accessible tools like Google Forms in campus facility management. This study addresses this gap by evaluating the effectiveness of Holy Cross College's Google Forms–based DFRS, identifying its strengths, limitations, and opportunities for enhancement toward improving overall campus operations.

II. RESEARCH QUESTIONS

This study aims to evaluate the effectiveness of the digital reporting system in facility management at Holy Cross College and seeks to answer the following research problems:

1. How may the users' perceptions of the digital reporting system be described in terms of:
   a. usability;
   b. ease of use;
   c. usefulness; and
   d. satisfaction?
2. How may the performance of the digital reporting system in facility management be described in terms of:
   a. speed of reporting;
   b. accuracy of reports;
   c. timeliness of response; and
   d. documentation quality?
3. What challenges and limitations are encountered by users and administrators in the

implementation and use of the digital reporting system?

4. What are the implications of the digital reporting system's effectiveness on daily operations and the overall campus environment at Holy Cross College?

5. What recommendations for improvement do respondents provide regarding the digital reporting system and its role in facility management practices?

III. METHODOLOGY

This study utilized a descriptive–evaluative research design to assess the effectiveness of the digital reporting system for facility management at Holy Cross College, Sta. Rosa, N.E. The design enabled systematic description and evaluation of users' perceptions, experiences, and satisfaction to determine how well the system meets its intended purpose. Both quantitative and qualitative data were gathered to ensure a comprehensive assessment.

Purposive sampling was employed to select participants directly involved in or affected by the facility management processes. Respondents included faculty members, administrative staff, maintenance personnel, and students who had used the digital reporting system at least once during the academic year. A total of 150 participants were targeted to represent varied stakeholder perspectives.

The study utilized a three-part research instrument to gather data. Part I focused on user perception, assessing usability, ease of use, usefulness, and satisfaction based on the Technology Acceptance Model (TAM). It contained ten statements rated on a four-point Likert scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). Part II measured the performance of the digital reporting system in terms of speed of reporting, accuracy of reports, timeliness of response, and documentation quality, also rated on the same four-point scale. Part III included open-ended questions designed to gather qualitative insights on challenges and limitations encountered, implications of the system's use on daily operations, and respondents' recommendations for improvement.

Quantitative data were analyzed using weighted means to determine the level of effectiveness across the four system dimensions, interpreted in line with TAM constructs. Qualitative responses were analyzed thematically, identifying recurrent patterns such as benefits, technical issues, and training needs to contextualize the numerical findings.

Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and respondents could withdraw at any time. Anonymity and confidentiality were maintained through coded responses and secure data handling. Findings were reported in aggregate to protect participants' identities and ensure research integrity.

IV. RESULTS AND DISCUSSIONS

A. User Perception of the Digital Reporting System

TABLE 1
MEAN OF USABILITY

Statements	Mean	Verbal Description
1. The digital reporting system is simple and easy to operate.	3.42	Strongly Agree
2. I can complete my reporting tasks effectively using the system.	3.35	Strongly Agree
3. I can complete my reporting tasks effectively using the system.	3.28	Strongly Agree
4. The system allows me to correct errors without difficulty.	3.10	Agree
5. The overall design of the system helps me perform my work efficiently.	3.31	Strongly Agree
General Mean	3.29	Strongly Agree

The results in Table 1 indicate that respondents strongly agreed on the system's overall usability (M = 3.29), suggesting that the Digital Facility Reporting System (DFRS) is user-friendly and well-integrated into daily operations. Users found

the system simple to operate and effective for completing reporting tasks, reflecting high functional design quality. This aligns with Nilashi and Abumalloh (2025), who emphasized that perceived ease of operation strongly predicts technology acceptance in institutional settings. Similarly, Leyesa et al. (2020) found that digital tools designed with intuitive interfaces promote efficiency and reduce user frustration, supporting the positive usability ratings observed in this study.

TABLE 2
MEAN OF EASE OF USE

Statements	Mean	Verbal Description
6. Learning to use the digital reporting system is easy for me.	3.36	Strongly Agree
7. It is easy for me to become skillful in using the system.	3.28	Strongly Agree
8. The instructions and prompts in the system are clear and understandable.	3.22	Agree
9. I find it easy to report or request facility services using the system.	3.35	Strongly Agree
10. I can use the system without the need for constant assistance.	3.18	Agree
General Mean	3.28	Strongly Agree

As shown in Table 2, the general mean of 3.28 indicates that respondents strongly agreed that the system is easy to use. This implies that minimal training or assistance is required to navigate the interface and perform reporting tasks. According to the Technology Acceptance Model (TAM), ease of use enhances users' perceived usefulness and overall acceptance of digital systems (Nilashi & Abumalloh, 2025). This finding corroborates the results of Mallari et al. (2025), who highlighted that systems with straightforward procedures and clear instructions encourage consistent user engagement and operational efficiency in academic institutions.

TABLE 3
MEAN OF USEFULNESS

Statements	Mean	Verbal Description
11. The digital reporting system enhances my productivity in facility reporting.	3.30	Strongly Agree
12. The system improves the quality of facility-related reports.	3.24	Agree
13. The system makes it easier to communicate with the facilities office.	3.36	Strongly Agree
14. The use of the system reduces delays in reporting and resolving facility issues	3.18	Agree
15. Overall, the system is a useful tool in managing facility-related concerns.	3.33	Strongly Agree
General Mean	3.28	Strongly Agree

Table 3 reveals that users strongly agreed on the system's usefulness (M = 3.28). Respondents affirmed that the DFRS improves communication with the facilities office, enhances productivity, and supports timely issue resolution. These results are consistent with Mahmoud et al. (2024), who noted that digital reporting systems streamline communication between departments and improve service delivery efficiency. Similarly, Atkin and Brooks (2021) asserted that digital tools for facility management strengthen organizational responsiveness by centralizing information flow and minimizing procedural bottlenecks.

TABLE 4
MEAN OF SATISFACTION

Statements	Mean	Verbal Description
16. I am satisfied with the performance of the digital reporting system.	3.27	Strongly Agree

17.	The system meets my expectations as a user.	3.20	Agree
18.	I am pleased with the reliability of the system in submitting reports.	3.26	Strongly Agree
19.	Using the system makes me feel more engaged in maintaining campus facilities.	3.18	Agree
20.	I would recommend the continued use of the digital reporting system.	3.35	Strongly Agree
	General Mean	3.25	Strongly Agree

Table 4 shows that users are generally satisfied with the DFRS (M = 3.25), reflecting a positive perception of its reliability, consistency, and contribution to campus facility maintenance. The results suggest that the system not only meets user expectations but also promotes a sense of engagement in campus operations. This finding aligns with Santos and Jocson (2024), who emphasized that user satisfaction is a key indicator of system sustainability in educational institutions. Similarly, Di Sutam et al. (2024) concluded that satisfaction and continued system use are outcomes of reliable performance and timely service delivery in digital facility management platforms.

B. Performance of the Digital Reporting System in Facility Management

TABLE 5
MEAN OF SPEED OF REPORTING

Statements		Mean	Verbal Description
21.	Reports are submitted quickly through the system.	3.45	Strongly Agree
22.	The system minimizes the time needed to create and send reports.	3.38	Strongly Agree
23.	Facility	3.27	Strongly Agree

	concerns are addressed faster due to digital reporting.		
24.	I can immediately report issues without long delays.	3.33	Strongly Agree
25.	The system speeds up communication between users and administrators.	3.41	Strongly Agree
	General Mean	3.37	Strongly Agree

The results show that the system significantly improved the speed of reporting (GM = 3.37), indicating that users can now submit and communicate facility concerns faster than before. This efficiency aligns with the findings Carreno (2024), who emphasized that digitized reporting tools streamline internal communication and shorten feedback loops in institutional operations. Similarly, Adepoju et al. (2022) found that automating reporting workflows minimizes manual delays, thereby enhancing service responsiveness in facility management.

TABLE 6
MEAN OF ACCURACY OF REPORT

Statements		Mean	Verbal Description
26.	The reports generated through the system are accurate and reliable.	3.42	Strongly Agree
27.	Errors in submitted reports are minimal.	3.28	Strongly Agree
28.	The system captures complete and correct information.	3.31	Strongly Agree
29.	The information submitted matches the actual facility issue.	3.36	Strongly Agree
30.	The accuracy of reports improves decision-making in facility management.	3.47	Strongly Agree
	General Mean	3.37	Strongly Agree

The accuracy of reports was rated very high (GM = 3.37), showing that users perceive the system as reliable and capable of producing correct and consistent data. According to Hussamadin et al. (2023), digital systems enhance data precision by automating error checks and standardizing input formats, reducing the likelihood of human error. This finding also supports Shahmoradi et al. (2017), who noted that improved data accuracy directly contributes to evidence-based decision-making in facility management and maintenance prioritization.

TABLE 7
MEAN OF TIMELINESS OF RESPONSE

Statements	Mean	Verbal Description
31. The facilities office responds promptly to reported issues.	3.29	Strongly Agree
32. The response time to reports has improved since using the system.	3.41	Strongly Agree
33. I receive timely updates about the status of my report.	3.25	Strongly Agree
34. Maintenance or repair services are completed faster after reporting.	3.18	Agree
35. The system helps ensure that responses are made within acceptable timeframes.	3.33	Strongly Agree
General Mean	3.29	Strongly Agree

Respondents agreed that the digital system enhanced the timeliness of response (GM = 3.29). The system facilitates real-time reporting and tracking, which improves coordination between users and maintenance staff. This result corroborates Olayinka (2021), who found that integrating ICT tools in facility operations significantly reduces response lag. Likewise, Düchting (2023) observed that timely digital communication strengthens accountability and service quality in institutional environments.

TABLE 8
MEAN OF DOCUMENTATION QUALITY

Statements	Mean	Verbal Description
36. The system keeps a clear record of all reported facility issues.	3.46	Strongly Agree
37. Past reports can be easily retrieved and reviewed.	3.39	Strongly Agree
38. Documentation within the system is well-organized and accessible.	3.41	Strongly Agree
39. The data stored in the system supports future planning and maintenance.	3.34	Strongly Agree
40. The documentation features of the system ensure accountability and transparency.	3.47	Strongly Agree
General Mean	3.41	Strongly Agree

The documentation quality received the highest evaluation (GM = 3.41), emphasizing that the system effectively archives and organizes reports for easy retrieval and future reference. This finding resonates with Henninger and Mashtan (2019), who highlighted that digital record-keeping enhances transparency and traceability in facility operations. Similarly, Tortora et al. (2025) asserted that well-structured documentation supports preventive maintenance planning and fosters institutional accountability.

C. Challenges and Limitations Encountered

Through thematic analysis of participants' open-ended responses, three major themes emerged: technical barriers, user adaptation issues, and organizational constraints.

First, technical barriers were commonly cited, particularly intermittent internet connectivity and system downtime during peak usage periods. Several respondents mentioned that reports occasionally failed to submit due to unstable connections, echoing Carreno (2024) who found

that the reliability of ICT infrastructure directly influences user experience and trust in digital platforms.

Second, user adaptation issues surfaced as a recurring concern. While most users found the interface intuitive, some older staff members reported difficulty navigating the system without assistance. This supports Venkatesh and Davis's (2000) Technology Acceptance Model, which emphasizes perceived ease of use and user confidence as key determinants of adoption.

Lastly, organizational constraints were noted, such as delays in administrative feedback and limited manpower to process digital requests. As observed by Düchting (2023), introducing new technologies without corresponding workflow adjustments can lead to bottlenecks that undermine efficiency.

D. Implications to Daily Operations

Thematic patterns suggest that the implementation of the digital reporting system has positively transformed daily operations, particularly in communication flow, accountability, and preventive maintenance. Respondents described the platform as having "made reporting faster and more transparent," reducing the need for physical forms and walk-ins. This aligns with Adepoju et al. (2022), who asserted that digital integration enhances institutional productivity through real-time reporting and monitoring.

However, the results also reveal the need for continuous technical support and user training. Without these, operational gains may plateau due to recurring system errors or user hesitation. The findings imply that while the system successfully automated facility reporting, its long-term sustainability depends on regular updates, feedback loops, and administrative responsiveness.

E. Recommendations for Improvement

Based on users' qualitative feedback, three themes emerged as actionable recommendations: system enhancement, capacity building, and process integration.

Under system enhancement, participants suggested optimizing server stability, improving mobile compatibility, and introducing notification alerts for report status updates. Such improvements would align with Hussamadin et al. (2023), who emphasized that usability upgrades increase system reliability and user satisfaction.

For capacity building, respondents recommended conducting orientation sessions and refresher trainings, especially for non-technical users. Consistent with Shahmoradi et al. (2017), user empowerment through training fosters confidence and reduces resistance to digital transitions.

Lastly, process integration was proposed, including synchronizing the reporting platform with maintenance schedules and inventory systems. This integration would enhance real-time coordination between the Facilities Office and other administrative units, ultimately ensuring faster response and preventive maintenance planning, as also supported by Tortora et al. (2025).

V. CONCLUSIONS

The study concluded that the Digital Facility Reporting System (DFRS) of Holy Cross College is an effective tool for improving facility management processes. Users perceived the system as highly usable, easy to navigate, and beneficial in simplifying reporting procedures. The system's design, which enables online submission of facility-related concerns through a cloud-based platform, has enhanced accessibility and reduced reliance on traditional paper-based methods. These findings affirm the principles of the Technology Acceptance Model, which emphasize that systems perceived as easy to use and useful are more likely to be accepted and consistently utilized by users.

In terms of performance, the DFRS contributed to faster reporting, improved accuracy of submitted data, timely responses from the facilities office, and organized documentation of maintenance records. It strengthened communication between users and administrators, minimized manual delays, and promoted accountability through transparent record-keeping.

The system has also encouraged greater engagement among faculty, staff, and students in maintaining a safe and functional campus environment.

Despite these positive outcomes, several challenges were identified. Technical issues such as unstable internet connectivity and occasional system downtime affected user experience. Some users, particularly older staff members, encountered difficulties adapting to the digital process, highlighting the need for continuous capacity building. Organizational constraints, such as limited manpower and delayed administrative responses, also limited the system's full potential.

Overall, the study concludes that while the DFRS has substantially enhanced efficiency and accountability in facility management, its long-term success will depend on sustained technical improvements, ongoing user training, and integration with broader institutional processes. Continuous evaluation and feedback mechanisms are essential to ensure that the system evolves with the college's operational needs and technological advancements.

VI. RECOMMENDATIONS

To build upon the success of the DFRS and address its current limitations, the study recommends several strategic actions. The institution should enhance the system's technical reliability by ensuring stable internet connectivity, optimizing system performance, and introducing features such as automated notifications, mobile accessibility, and real-time tracking. These enhancements would further streamline reporting and improve user satisfaction.

Regular training and digital literacy programs should be conducted to ensure that all users—particularly non-technical personnel—are confident in using the platform. Establishing help desks or peer-support groups can provide ongoing assistance and encourage consistent usage across departments.

Institutional processes should also be integrated with the digital reporting platform. Linking the DFRS with maintenance scheduling, procurement systems, and facility inventory records would allow for better coordination, preventive maintenance, and data-driven decision-making.

Moreover, a feedback mechanism should be institutionalized through regular surveys and periodic evaluations, enabling the Facilities Office to identify emerging issues and continuously refine the system. This could be supported by adopting a continuous improvement framework such as the Plan-Do-Check-Act (PDCA) cycle to monitor progress and implement timely updates.

Finally, administrative support and policy reinforcement are crucial for sustainability. The college should formalize the DFRS as the official channel for facility-related concerns and allocate adequate personnel and resources to manage it. By maintaining administrative commitment, user engagement, and technological adaptability, Holy Cross College can ensure that the DFRS remains a sustainable, efficient, and exemplary model for digital facility management in higher education.

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