Research and Extension File Management System with Integrated User Notification

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DOI: https://doi.org/10.51584/IJRIAS.2026.11060091

Received: 01 June 2026; Accepted: 06 June 2026; Published: 24 June 2026

ABSTRACT

This study focused on developing a Research and Extension File Management System with Integrated User Notification for the Mindanao State University – Sultan Naga Dimaporo (MSU-SND) Office of Research and Extension and the Campus Research Ethics Review Committee (CREC). The system aimed to improve file organization, automate notifications, strengthen data security, and enhance accessibility in managing research documents and ethical clearance records. Using the Software Development Life Cycle (SDLC) with the Waterfall Model, the researchers developed a web-based system using PHP, MySQL, HTML, CSS, and JavaScript. The system featured centralized file management, automated Gmail notifications, role-based access control, and activity logging. Evaluation results showed that the system improved file accessibility, communication, and overall efficiency, while users positively rated its usability and functionality. The study concluded that the system effectively reduced manual workload and improved research and extension management processes.

Keywords: File Management System, User Notification, Research Management, Ethics Clearance, SDLC, Web-Based System

INTRODUCTION

Organizations and individuals generate vast amounts of data daily in today's rapidly advancing technological landscape. As digital transformation continues, the need for efficient data management solutions has become increasingly critical. Organized, accessible, and secure a file management systems are now essential in supporting productivity and operational efficiency (Patel, 2018). File management refers to the systematic process of organizing, storing, and retrieving digital files, which has become a fundamental component of both personal and organizational workflows. In a fast-paced digital environment, proper file management significantly influences productivity by reducing time spent searching for information and minimizing data-related errors.

As reliance on digital systems increases, the importance of data protection grows exponentially. Secure a file storage is crucial in mitigating threats such as ransomware attacks and data breaches (Li & Liu, 2021). Efficient file management systems not only enhance productivity but also provide robust security measures to safeguard sensitive information in an interconnected environment. Implementing such systems enables institutions to manage data flow effectively while ensuring the protection of valuable records. This is particularly important in academic settings, where organized file management supports accurate documentation of observations, results, and discoveries. The proposed solution addresses the need for schools and students to efficiently update, locate, and track research papers and Certificates of Ethics, thereby improving administrative processes and research management.

These growing needs for efficient file research and extension management have led the researchers to propose advanced technology for the Mindanao State University - Sultan Naga Dimaporo MSU-SND Office of Research and Extension. Currently, this office continues to use a manual system for managing student files, unaware of the potential risks regarding data safety and file misplacement. The researchers offer a pioneering

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VI June 2026

technology that provides a significant advantage to the institution, particularly in improving the research and extension file management system.

Moreover, this initiative directly supports several of the United Nations' Sustainable Development Goals (SDGs). It promotes Quality Education (SDG 4) by ensuring reliable access to academic documents and improving institutional support for research activities. It contributes to Industry, Innovation, and Infrastructure (SDG 9) through the adoption of digital technologies that modernize campus systems. By promoting secure and transparent data handling, it strengthens Peace, Justice, and Strong Institutions (SDG 16). Lastly, by reducing reliance on physical documents, it supports Responsible Consumption and Production (SDG 12), encouraging sustainable practices within academic environments. Through these contributions, the proposed system not only addresses local institutional challenges but also aligns with global goals for sustainable and inclusive development.

Objectives of the Study

The study aimed to develop a Research and Extension File Management System with Integrated User Notification that can generate reports and improve file management processes. Specifically, it sought to implement automated notifications for Ethics Clearance Certificate updates, create a centralized and user-friendly document management system, improve file organization and accessibility, reduce misfiled records, and enhance efficiency for the Campus Research Ethics Review Committee. The study also aimed to evaluate the system's usability, accuracy, and user satisfaction while ensuring reliable performance through continuous maintenance and optimization.

Statement of the Problem

The Office of Research and Extension lack a web-based system for managing research files and data, resulting in inefficient and unsystematic research management processes. Research administrators rely on Microsoft Word and Excel for filing documents, making file retrieval difficult and time-consuming. The Campus Research Ethics Review Committee (CREC) also experiences challenges in managing manual files, informing students about the release of Ethics Clearance Certificates, and handling misfiled records, inefficient record-keeping, and insecure document storage.

CONCEPTUAL FRAMEWORK

To develop the Research and Extension File Management System with Integrated User Notifications, this study uses the Input–Process–Output (IPO) framework as a guide for systematic system development.

Input. The inputs include problem identification, user requirements, literature review, planning and design, notification requirements, integration capabilities, and security and compliance considerations. These elements provide the foundation for understanding user needs, designing the system, and ensuring compatibility, security, and functionality.

Process. The process involves applying the System Development Life Cycle (SDLC), including coding, testing, and debugging. It also includes system testing, evaluation, and statistical analysis of user feedback and test results to improve system performance and reliability.

Output. The outputs include the developed Research and Extension File Management System, automated user notifications, and enhanced user experience and system efficiency. These outcomes demonstrate the system's effectiveness in addressing identified issues and meeting user requirements.

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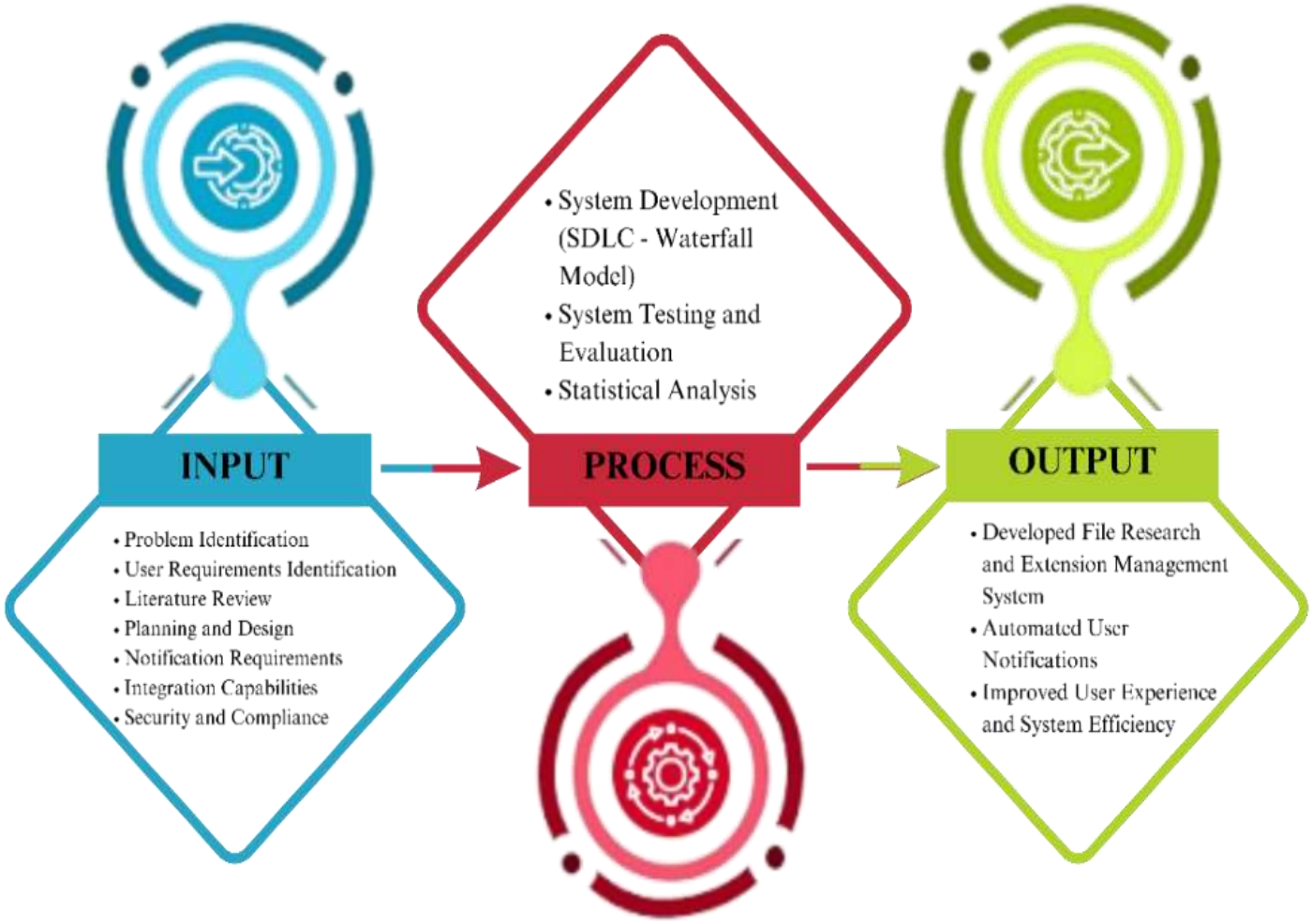

Figure 1 Conceptual Framework of Research and Extension File Management System with an Integrated User Notification

REVIEW OF RELATED LITERATURE

The reviewed literature supports the development of the Research and Extension File Management System with Integrated User Notification by emphasizing the importance of efficient file organization, automation, and effective communication in research management. Dinneen and Julien (2020) highlighted that modern file management systems improve the organization, retrieval, and sharing of digital files, while Borghi et al. (2018) emphasized the value of structured Research Data Management (RDM) practices for preserving and managing research data effectively.

In terms of automation, Coombs et al. (2020) and Collins et al. (2021) explained that intelligent automation reduces manual workload, improves operational efficiency, and enhances data governance. These concepts support the study's goal of streamlining research and extension processes through automated file handling and notifications.

The integration of user notifications is also supported by Gavilan and Martinez-Navarro (2022), who stated that timely and relevant notifications improve user engagement and communication. Similarly, Lumauag (2016) demonstrated that SMS and notification systems are effective tools for delivering important updates, while Mihci and Ozdener (2017) emphasized the importance of personalized notifications in improving user interaction and responsiveness.

Furthermore, Fu (2013) and Courville (2011) discussed how technology enhances access to information, collaboration, and workflow efficiency in educational and research environments. These studies collectively

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strengthen the foundation of the proposed system by supporting the use of centralized file management, automation, and integrated notifications to improve research administration and communication.

METHODOLOGY

The study employed a systematic and structured approach to ensure the successful development and evaluation of the proposed system. To achieve the objectives of the research, the researchers adopted the Software Development Life Cycle (SDLC) utilizing the Waterfall Model as the primary development framework. This model provides a sequential and organized process that guides the development of software through distinct phases, namely: requirement analysis, system design, implementation, testing and evaluation, deployment, and maintenance.

Each phase was carefully executed to ensure the accuracy, reliability, functionality, and efficiency of the Research and Extension File Management System with Integrated User Notification. Through the application of this development model, the researchers aimed to produce a secure, user-friendly, and effective system capable of improving research and extension file management processes within the institution.

The Software Development Life Cycle (SDLC) is a methodical approach to software development in which a project is divided into stages, each with specific tasks and completion requirements (Sherman, 2014). In this study, the researchers utilized the Waterfall Model, a linear and sequential SDLC approach widely used in software engineering and product development (Lutkevich & Lewis, 2022).

The model minimizes uncertainty by ensuring that each phase is completed before proceeding to the next, with the output of one phase serving as the foundation for the succeeding stage (SDLC – Waterfall Model, n.d.). Furthermore, Outcome (2023) emphasized that the Waterfall methodology promotes organized project flow, minimizes bottlenecks, supports timely completion of tasks, and ensures that deliverables are achieved systematically. The following sections present the phases followed in the development of the Research and Extension File Management System with Integrated User Notification.

System Design

The System Design phase translated the identified requirements into a structured blueprint for the Research and Extension File Management System with Integrated User Notification. The design focused on key system functions such as document submission, file storage, user access control, research record management, and notification services while ensuring data security, accessibility, and efficient communication.

Various modeling tools, including the Entity-Relationship Diagram (ERD), Use Case Diagram, Data Flow Diagram (DFD), Flowchart, and System Architecture Diagram, were utilized to represent system processes, data flow, and interactions. However, only the ERD and System Flowchart are presented in the following figures. These diagrams provide a clear visualization of the system structure, workflow, and functionality to support the implementation phase.

Entity Relationship Diagrams (ERD)

The Entity-Relationship Diagram (ERD) illustrates the database structure of the Research and Extension File Management System with Integrated User Notification and the relationships among its entities. Key entities include College, Department, Faculty, Researcher, Research Papers, Ethical Clearances, Notifications, and System Log, which store and organize research-related information.

The ERD shows how colleges are linked to departments, researchers, and faculty members, while research papers are connected to ethical clearances, funding sources, SDGs, and panelists. It also demonstrates how notifications and system logs support communication, monitoring, and security within the system. Overall, the ERD provides a clear representation of how data is organized and managed to ensure efficient research tracking, ethical compliance, and smooth system operations.

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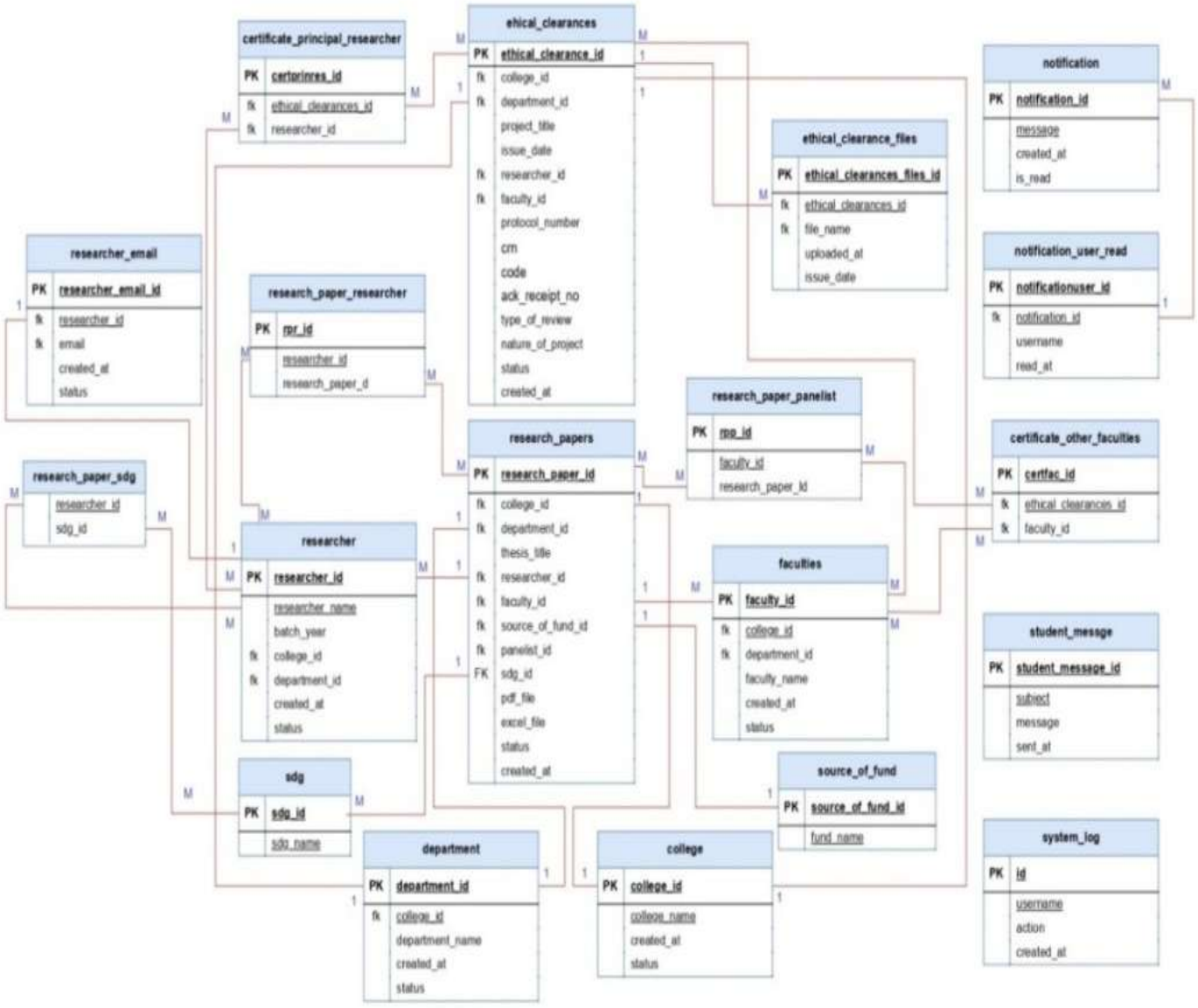

Figure 2. Entity Relationship Diagram of the Research and Extension File Management System with Integrated User Notification

Flow Chart

The flowchart presents the overall process of the Research and Extension File Management System with Integrated User Notification, from user login to system exit. The process starts when the user accesses the system and enters login credentials, which are validated by the system. If incorrect, the user is prompted to re-enter the information; if correct, access is granted to the main dashboard. From the dashboard, users can manage research and extension files by uploading, viewing, updating, or deleting records. All actions are automatically stored and updated in the database. The system also triggers notifications for new uploads, updates, and important reminders. Once tasks are completed, the user logs out, ending the session securely.

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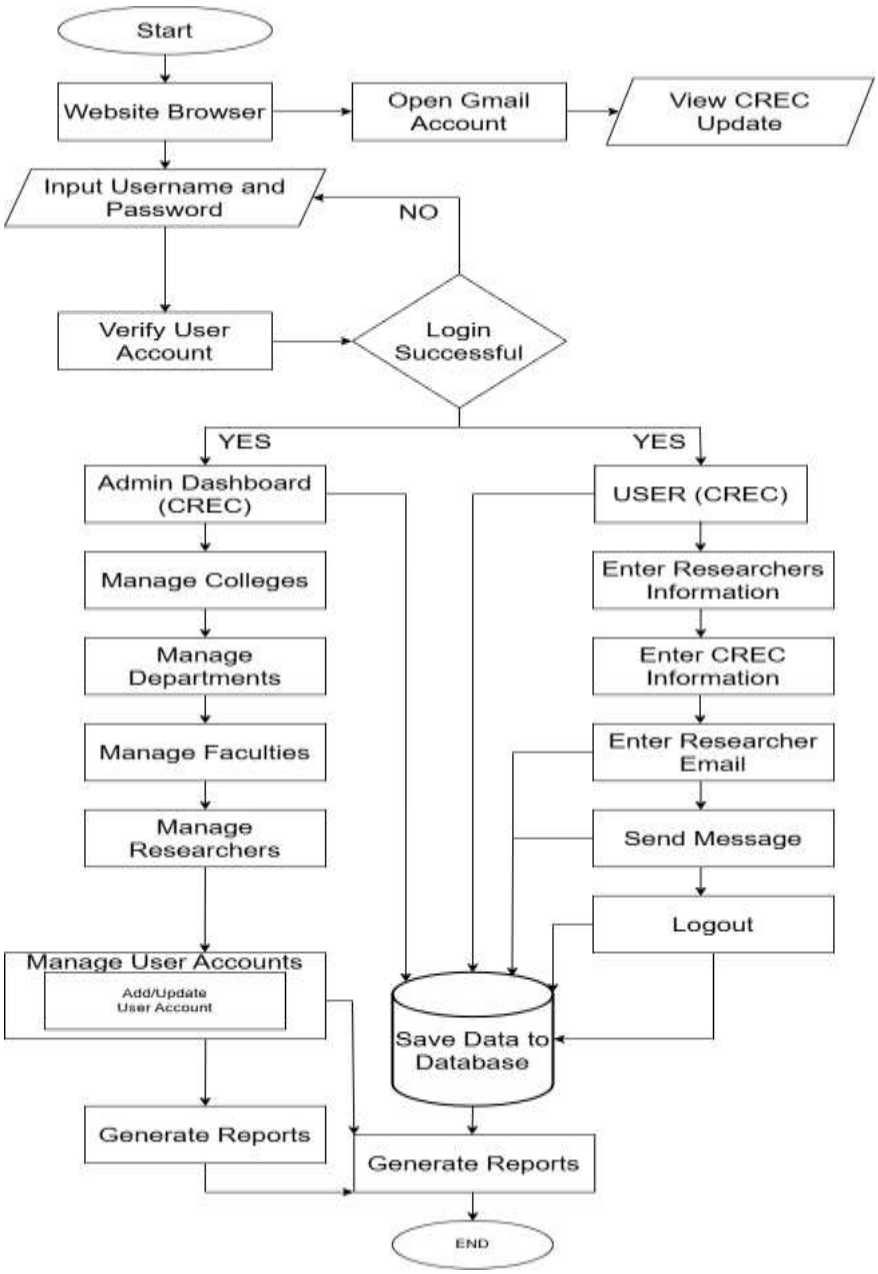

Figure 6. System Flowchart of the Research and Extension File Management System with Integrated User Notification

Testing Method

After all the modules are implemented, the researchers will be integrated into a unified system. Comprehensive testing will be conducted to identify bugs, ensure data integrity, and validate the notification system. This testing included System Testing, which ensured that all components worked together smoothly and met the system requirements. The developer served as the tester for the System Testing phase. Minor adjustments were made based on observations to enhance usability.

Population and Sample of the Study

The respondents of the study included administrators and faculty members from the Mindanao State University – Sultan Naga Dimaporo (MSU-SND) Office of Research and Extension and the Campus Research Ethics Review Committee (CREC), as well as college students involved in proposal research. Purposive sampling was used for selecting administrators, faculty members, and students actively engaged in research-related

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activities, while random sampling was applied to student participants. A total of 30 student respondents were selected equally from the three colleges of MSU-SND, with 10 participants from each college.

Instruments Use

The study utilized modified versions of the QUIS (Questionnaire for User Interaction Satisfaction) and USE (Usefulness, Satisfaction, and Ease of Use) questionnaires as the primary research instruments. These questionnaires were designed to evaluate the system's functionality, usability, performance, ease of use, learnability, and user satisfaction. A checklist questionnaire using a 5-point Likert Scale ranging from "Strongly Disagree" to "Strongly Agree" was also employed to gather respondents' feedback regarding the developed system.

After the implementation and integration of all system modules, comprehensive testing was conducted to identify system errors, validate functionalities, and ensure data integrity. The developers performed system testing to verify that all components functioned properly. For evaluation, the researchers distributed questionnaires to the selected respondents after providing a brief orientation regarding the purpose of the study and the proper way of answering the survey forms. Data gathered from the respondents were then collected, recorded, and processed using Microsoft Office Excel. Ethical considerations such as informed consent and confidentiality of participant information were also strictly observed throughout the study.

The collected data were analyzed using descriptive statistical tools, specifically Weighted Mean, Frequency, and Percentage. Weighted Mean was used to determine the overall evaluation of respondents regarding the system's usability, functionality, and satisfaction, while Frequency and Percentage were utilized to present and interpret the distribution of responses. The researchers also applied a 5-point Likert Scale with corresponding verbal interpretations to classify respondents' level of agreement and evaluate the effectiveness of the developed system.

RESULTS AND DISCUSSION

Figure 8 Shows The main System Web-Page of the Research and Extension File Management System with Integrated User Notification and its Login Form illustrates the interface displays the login page of the system, where users enter their username and password to access the system. And there are two login page which is the ORE (Office of Research and Extension) and CREC (Campus Review Ethics Committee).

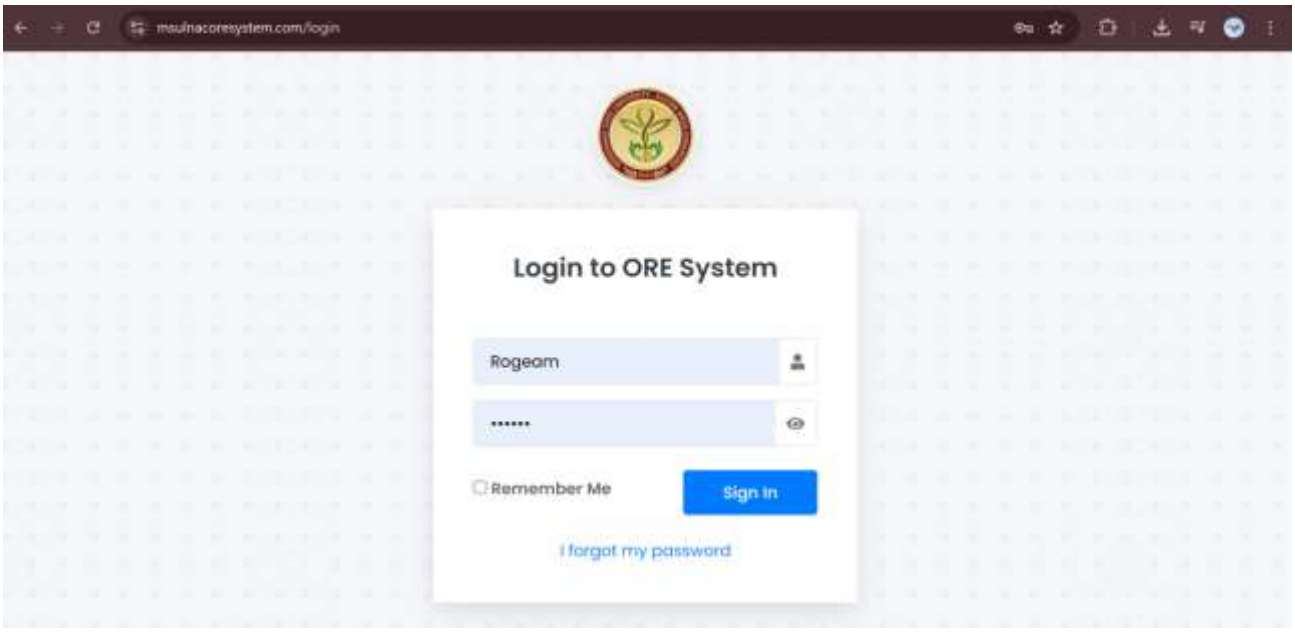

Figure 8. Login Page of the Research and Extension File Management System with Integrated User Notification

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Figure 9 shows Admin Dashboard/Home of the Research and Extension File Management with Integrated User Notification illustrates the admin dashboard interface of the ORE (Office of Research and Extension) System. This page is accessible only to authenticated administrative users. It includes a navigation panel on the left with options such as Dashboard, Manage Accounts, ORE, CREC, Settings, and Logout. The central part of the interface features a bar graph titled “Research Papers,” which displays the number of research papers categorized by their sources of funding, including options like Patriotic, Internal, External (DOST, CHED, DA, DBM, NGO), and Others. The top section allows users to filter data by academic year and specific date ranges, enhancing data visualization and management capabilities for administrators.

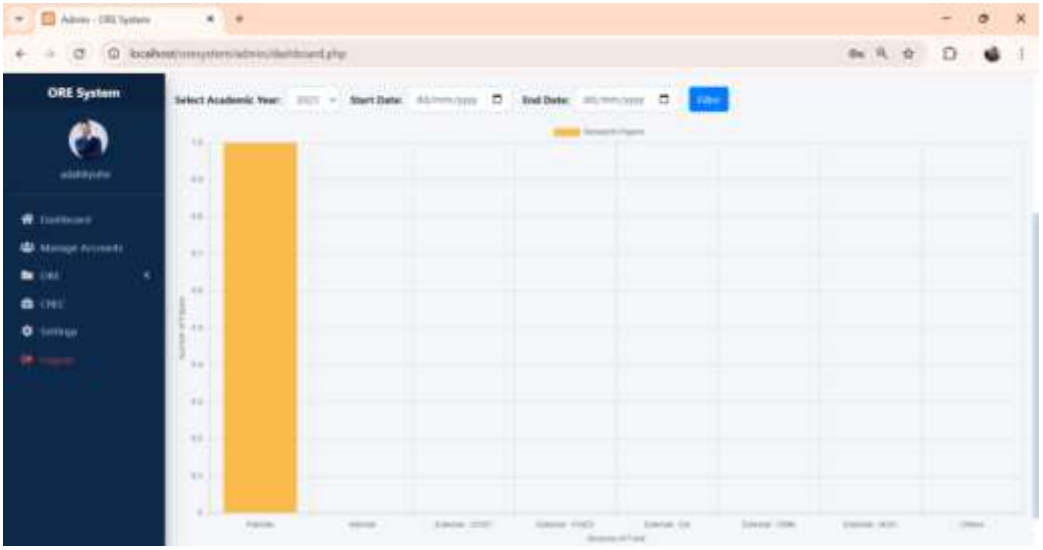

Figure 9. The main System Web-Page of the Research and Extension File Management System with Integrated User Notification and its Login Form

Figure 10 shows the "Manage Research Papers" section of the ORE System, where administrators can oversee and maintain records of research projects. The interface displays essential details such as the title of the research, the college it is affiliated with, the research adviser, and the relevant Sustainable Development Goals (SDGs). It also indicates the source of funding and provides downloadable links to the PDF and Excel versions of the research documents. Administrators are given the option to edit or delete each entry using the respective action buttons. Additionally, the system includes functionality to add new research entries via the "Add Thesis" button and to access previously archived research using the "View Archived" button. A search bar is also available to help locate specific research papers quickly and efficiently.

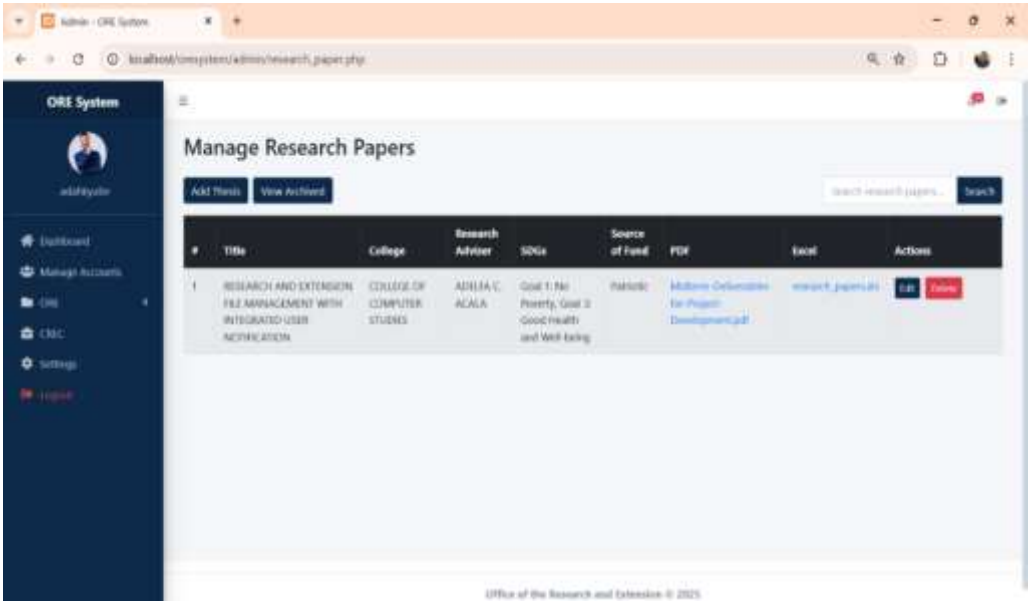

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Figure 10. Adding Research Paper of the Research and Extension File Management with Integrated User Notification

Figure 11 shows the "View Research Papers (Files)" section of the ORE System, where administrators can review and manage records of research papers. The interface presents key information such as the thesis title, associated college, research adviser, panelists, source of funding, and relevant Sustainable Development Goals (SDGs). It also provides clickable links to download the thesis file (PDF) and raw data file (Excel). Administrators can filter research papers by college, export data in different formats, and use the search bar to quickly locate specific entries. The "Generate" button likely processes or compiles the selected data for further use. The sidebar menu offers navigation to other system features like Dashboard, Manage Accounts, and Settings.

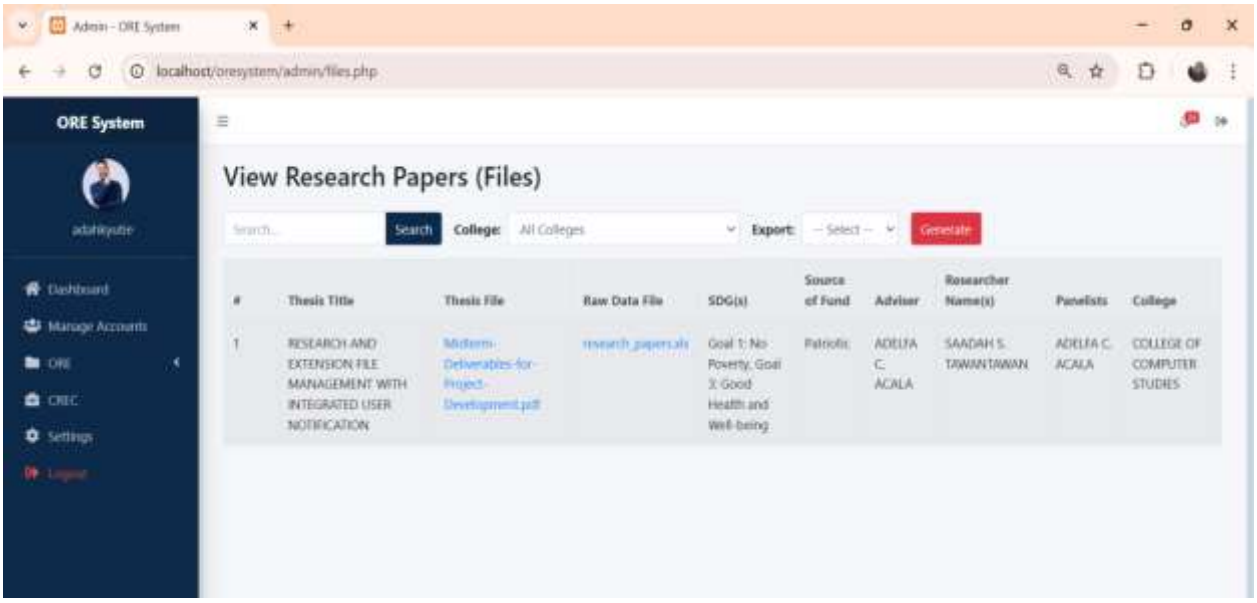

Figure 11. Viewing Research Paper of the Research and Extension File Management with Integrated User Notification

Figure 12 Displays the User Dashboard of the CREC system. On the left side, it shows options such as Dashboard, Student Messaging, Settings, and Log Out. The main area presents the overall results of the system and includes fields for Start Date and End Date.

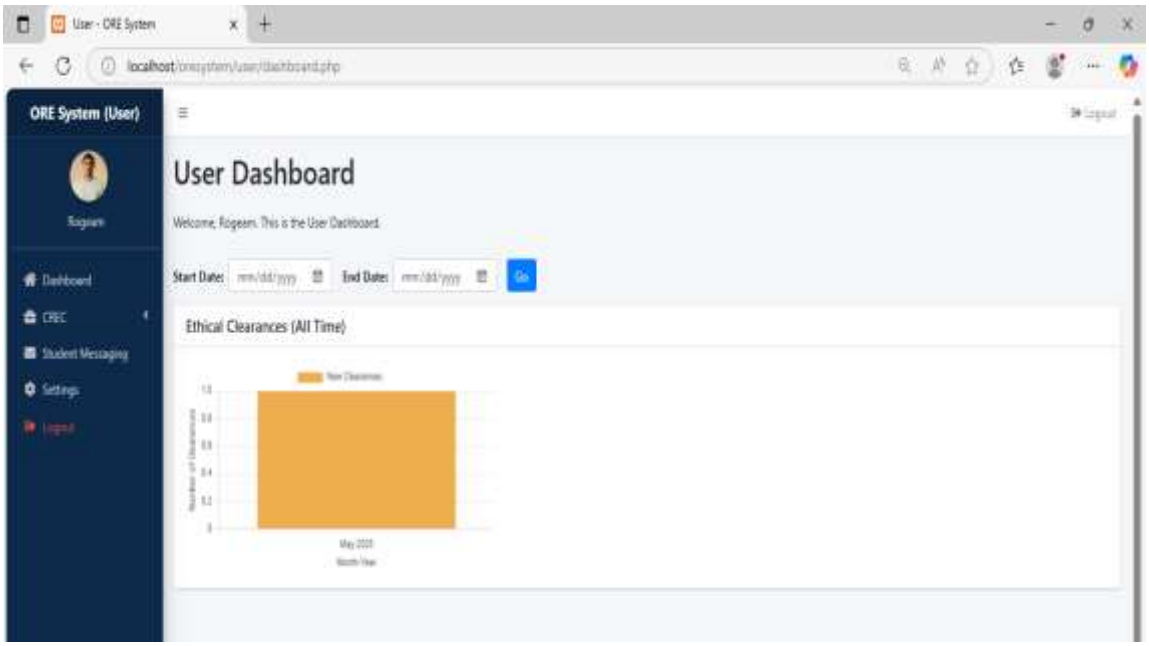

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Figure 12 User (CREC) Dashboard of the Research and Extension File Management with Integrated User Notification

Figure 13 shows a user interface of the CREC System displaying an Ethical Clearance Certificate for a project. It also includes options to Add New Data, View Archived items, Select College and Department, specify a date range (From and to), and access features such as PDF and Search.

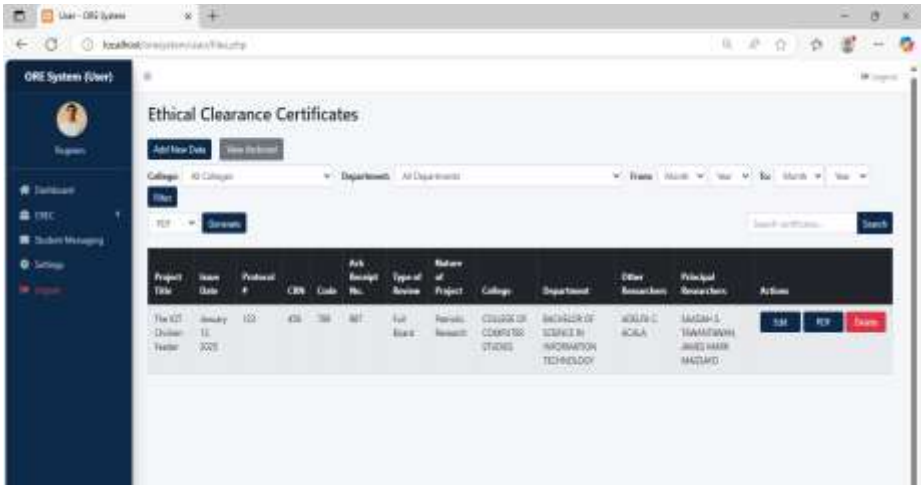

Figure 13. User (CREC) Viewing file of the Research and Extension File Management System with Integrated User Notification

Figure 14 displays the Archived Ethical Clearances, including any files that have been deleted. It also provides functionality to search for specific files, filter by college, export data, and generate reports.

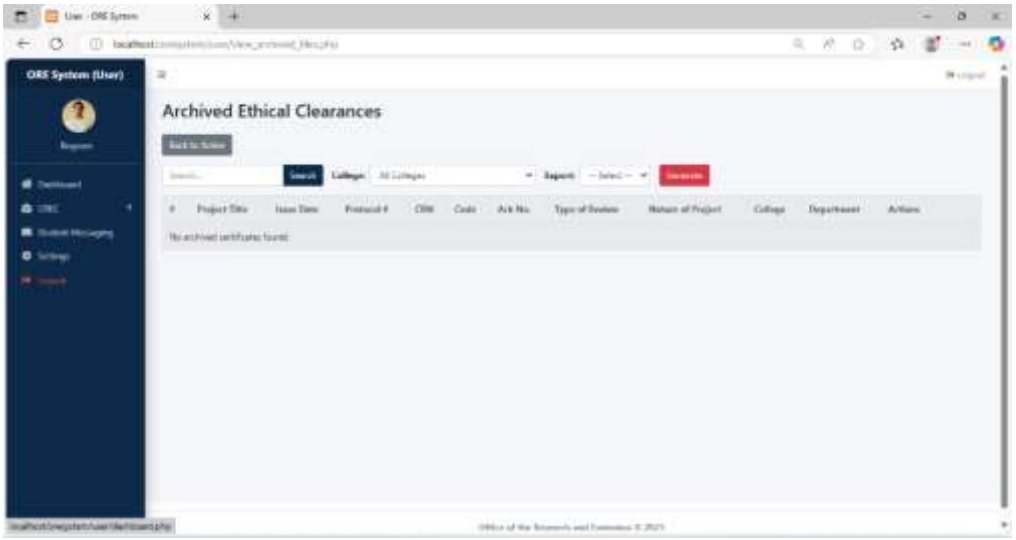

Figure 14. User (CREC) Archived Module for the Deleted Ethical Clearance Data

Figure 15 Illustrates the "Student Messaging" interface of the ORE System under the user role. This page allows users to compose and send messages to students via email. It includes input fields for selecting student email addresses, entering a subject line, and composing the message body. In this example, the subject is “Ethical Clearance,” and the message informs students about the availability of their Ethical Clearance Certificates, along with instructions for claiming them. The message editor supports basic formatting options such as font style, text alignment, and bullet points. A “Send” button at the bottom allows users to dispatch the composed message. The left sidebar provides navigation to Dashboard, CREC, Student Messaging, and Settings, maintaining consistency across the system’s user interface.

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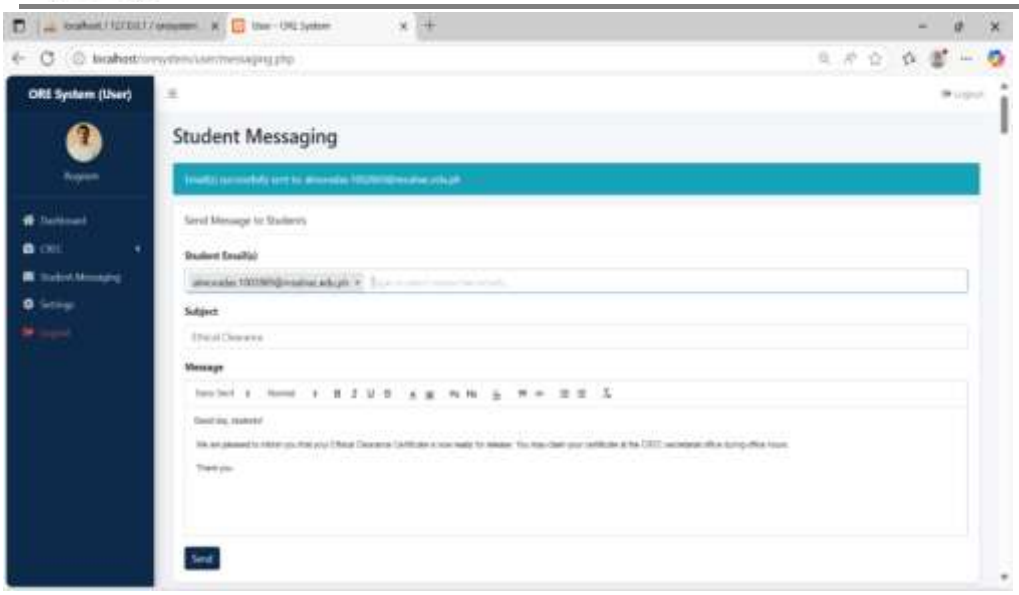

Figure 15. User (CREC) Students Messaging of the Research and Extension File Management System with Integrated User Notification

Figure 16 Shows the Gmail interface where an email sent through the ORE System's "Student Messaging" feature has been successfully delivered. The email carries the subject "Ethical Clearance" and is addressed from the CREC office. It informs students that their Ethical Clearance Certificate is ready for release and provides instructions for claiming the certificate at the CREC secretariat office during office hours. The message content and formatting align with what was composed within the ORE System, confirming that the system effectively transmits messages to student email accounts via Gmail

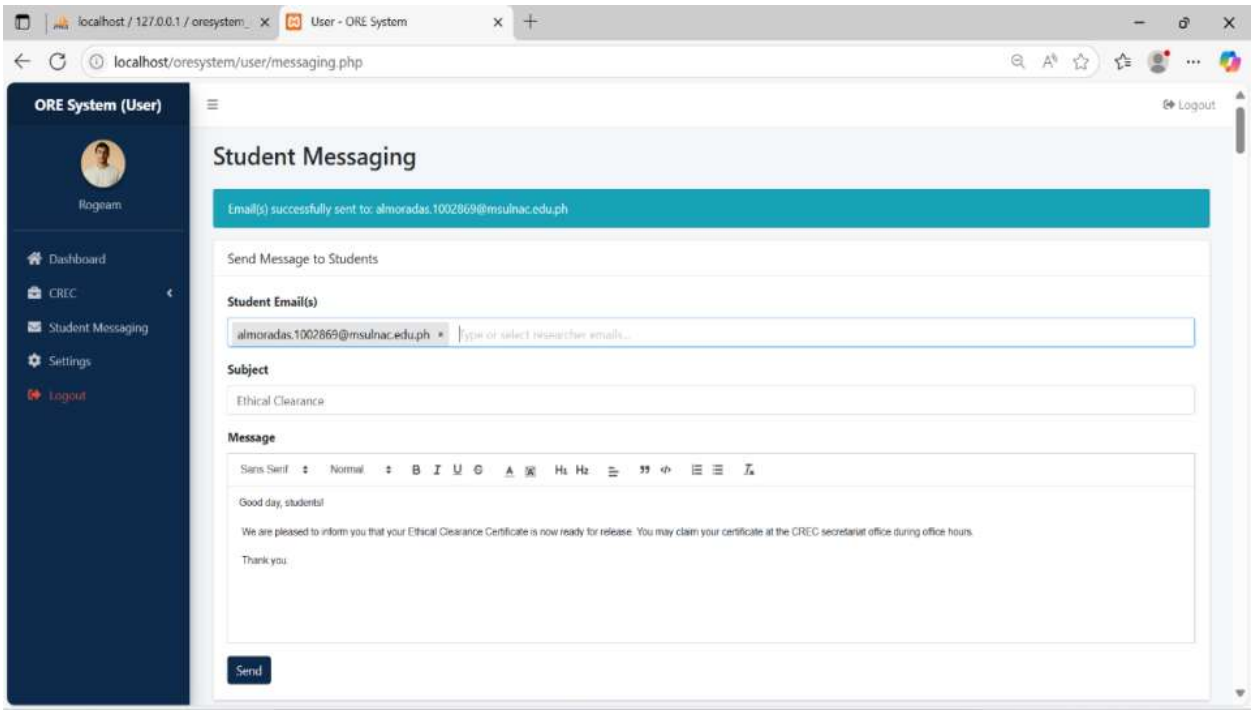

Figure 28. Notification Sent by the User (CREC) of the Research and Extension Management System with Integrated User Notification

Evaluation Results

This section presents the results of the evaluation conducted for the Research and Extension Management System with Integrated User Notification. The evaluation assessed the system's functionality, usability, performance, and user satisfaction using the USE (Usefulness, Satisfaction, and Ease of Use) questionnaire

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and QUIS (Questionnaire for User Interaction Satisfaction). The findings provide insights into the system's effectiveness, user experience, strengths, areas for improvement, and readiness for deployment.

Table 1 shows the administrators' assessment of the system's usefulness. All indicators received a weighted mean of 5.00, interpreted as "Strongly Agree," indicating that the system is highly effective, functional, and beneficial for administrative tasks and decision-making.

Table 1. Admin Evaluation of the System's Usefulness

Questions	**WM**	**INTERPRETATION**
1. The system helps be more effective in managing research and extension tasks.	5.00	Strongly Agree
2. The system is useful for managing and tracking research and extension projects.	5.00	Strongly Agree
3. The system makes it easier to accomplish the tasks want to get done.	5.00	Strongly Agree
4. The system saves time	5.00	Strongly Agree
5. The system meets my needs	5.00	Strongly Agree
Average Weighted Mean	**5.00**	**Strongly Agree**

Table 2 shows that administrators found the system highly easy to use. Most indicators received a weighted mean of 5.00, while one indicator obtained 4.50, all interpreted as "Strongly Agree." The overall weighted mean of 4.93 indicates that the system is user-friendly, intuitive, and aligned with user needs, reflecting a highly positive usability evaluation.

Table 2. Admin Evaluation of the System's Ease of Use

Indicators	**WM**	**INTERPRETATION**
6. The system is easy to use.	5.00	Strongly Agree
7. The system is simple to navigate.	5.00	Strongly Agree
8. The system is user-friendly.	5.00	Strongly Agree
9. The system is flexible for different types of users.	5.00	Strongly Agree
10. Using the system is effortless.	4.5	Strongly Agree
11. It can operate the system without written instructions.	5.00	Strongly Agree
12. Don't notice any inconsistencies when using the system.	5.00	Strongly Agree
Average Weighted Mean	**4.93**	**Strongly Agree**

Table 3 indicates that administrators found the system extremely easy to learn. All indicators obtained a weighted mean of 5.00, interpreted as "Strongly Agree," showing that the system is highly intuitive and easy to understand without extensive training. The overall result highlights the system's strong learnability and usability.

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Table 3. Admin Evaluation of the System's Ease of Learning

Indicators	WM	INTERPRETATION
13. The system can be learned quickly.	5.00	Strongly Agree
14. It is easy to remember how to use the system.	5.00	Strongly Agree
15. Users can become skillful in using the system quickly.	5.00	Strongly Agree
Average Weighted Mean	**5.00**	**Strongly Agree**

Table 6 shows a high level of administrator satisfaction with the system. All indicators were interpreted as "Strongly Agree," with weighted means ranging from 4.50 to 5.00 and an overall weighted mean of 4.67. These results indicate that the system effectively meets user expectations and provides a positive user experience, although minor improvements may further enhance satisfaction.

Table 6. Admin Evaluation of the System's Satisfaction

Indicators	WM	INTERPRETATION
16. The System is satisfactory.	4.5	Strongly Agree
17. It is enjoyable to use the System	5.00	Strongly Agree
18. The system works the way I expect it to.	4.5	Strongly Agree
Average Weighted Mean	**4.67**	**Strongly Agree**

Table 7 highlights the administrators' high level of satisfaction with the system. The indicators received weighted means of 4.50 and 5.00, resulting in an overall weighted mean of 4.75, interpreted as "Strongly Agree." These findings indicate that the system effectively meets user expectations and demonstrates strong performance and reliability, with only minor areas for possible improvement.

Table 7. Admin Evaluation of the System's Performance and Effectiveness

Indicators	WM	INTERPRETATION
19. Reading characters on the screen of the System is easy.	4.5	Strongly Agree
20. The organization of information on the screen is clear.	5.00	Strongly Agree
Average Weighted Mean	**4.75**	**Strongly Agree**

Table 8 indicates that administrators strongly agree with the clarity and effectiveness of the system's terminology and information presentation. Most indicators received a weighted mean of 5.00, while one obtained 4.50, resulting in an overall weighted mean of 4.92, interpreted as "Strongly Agree." These findings show that the system uses clear, consistent, and user-friendly language, making information easy to understand and navigate.

Table 8. Admin Evaluation of the Terminology and System Information

Indicators	WM	INTERPRETATION
21. The use of terms throughout the System is consistent.	5.00	Strongly Agree
22. Terminology is appropriately related to tasks within the system.	5.00	Strongly Agree

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23. The position of messages on the screen is intuitive.	5.00	Strongly Agree
24. Prompts for input are clear and understandable.	5.00	Strongly Agree
25. The system informs users about its progress effectively.	5.00	Strongly Agree
26. Error messages are helpful and informative.	4.5	Strongly Agree
Average Weighted Mean	**4.92**	**Strongly Agree**

Table 9 shows that administrators highly regard the system's capabilities. All indicators received a weighted mean of 5.00, interpreted as "Strongly Agree," resulting in an overall weighted mean of 5.00. These findings indicate that the system performs efficiently, effectively supports user tasks, and meets administrator needs with a high level of reliability and functionality.

Table 9. Admin Evaluation of the System Capabilities

Indicators	**WM**	**INTERPRETATION**
27. The System operates at an acceptable speed.	5.00	Strongly Agree
28. The system makes it easy to correct mistakes.	5.00	Strongly Agree
29. The system is designed to accommodate users of all levels.	5.00	Strongly Agree
Average Weighted Mean	**5.00**	**Strongly Agree**

Table 10 indicates that students strongly agree with the system's usefulness, with weighted mean scores ranging from 4.77 to 4.86 and an overall weighted mean of 4.82. These findings show that the system effectively supports students' academic tasks and needs, reflecting a high level of user satisfaction and positive overall experience.

Table 10. Students' Evaluation of the System Usefulness (n=30)

Indicators	**WM**	**INTERPRETATION**
1. The notification feature effectively helps me stay updated on the status of my ethics clearance.	4.86	Strongly Agree
2. Notifications allow me to track my progress by informing me when my certificate is ready for pick-up.	4.83	Strongly Agree
3. Notifications simplify the management of my academic tasks and responsibilities.	4.8	Strongly Agree
4. The notification feature fulfills the expectations for providing timely updates.	4.77	Strongly Agree
Average Weighted Mean	**4.82**	**Strongly Agree**

Table 4.9 shows that students strongly agree with the system's usefulness, with weighted mean scores ranging from 4.80 to 4.93 and an overall weighted mean of 4.89. These findings indicate that the system effectively supports student needs and provides a consistently positive and reliable user experience.

Table 4.9. Students' Evaluation of the System Usefulness (n=30)

Indicators	**WM**	**INTERPRETATION**
5. The notification system is effective in informing students when their ethics clearance is ready.	4.93	Strongly Agree
6. The notification system is recommended for students who need timely updates about their ethics clearance.	4.9	Strongly Agree
7. Using the notification system is a convenient and pleasant way to stay informed about ethics clearance status.	4.93	Strongly Agree
8. The notification system works the way I expect it to in terms of delivering alerts about my ethics clearance.	4.8	Strongly Agree
Average Weighted Mean	**4.89**	**Strongly Agree**

Overall Frequency and Percentage of Students' Evaluation of the System Notification Usefulness

The results indicate a highly positive student response regarding the system's usefulness. Most responses were rated 5 (Strongly Agree), with an average of 86%, while the remaining 14% were rated 4 (Agree). Ratings below 4 were minimal or absent, indicating no significant dissatisfaction among users. The consistently high ratings across all indicators confirm that the system effectively meets student needs and supports a positive user experience.

Table 4.10. Overall Frequency and Percentage Results Students' Evaluation of the System Notification Usefulness

Question	Frequency					Percentage				
	5	4	3	2	1	5	4	3	2	1
Q1	26	4	0	0	0	87%	13%	0%	0%	0%
Q2	25	4	0	0	0	83%	17%	0%	0%	0%
Q3	24	5	0	0	0	80%	20%	0%	0%	0%
Q4	24	6	1	0	0	80%	17%	0%	0%	0%
Q5	28	2	0	0	0	93%	7%	0%	0%	0%
Q6	27	3	0	0	0	90%	10%	0%	0%	0%
Q7	28	2	0	0	0	93%	7%	0%	0%	0%
Q8	24	6	0	0	0	80%	20%	0%	0%	0%
Total	25.75	4.13	0.13	0	0	86%	14%	0%	0%	0%

CONCLUSION

This study aimed to develop a Research and Extension File Management System with Integrated User Notification for MSU-LNAC. The goal was to improve the way research files and ethics certificates are stored, accessed, and managed by replacing the old manual method with a digital system.

Based on the results, the study successfully met its objectives. The system was able to organize research files better, make retrieval faster, and help both administrators and students keep track of important documents. It

also included a notification feature that allowed students to get updates about their ethics certificates through email, making the process more efficient and reliable.

The findings show that users – including administrators and students – were highly satisfied with the system. They found it easy to use, useful, and effective in improving their workflow. The system helped reduce time spent on manual tasks and minimized errors related to lost or misfiled documents. Evaluation results showed that 86% of student responses were "Strongly Agree", with an average frequency of 25.75 out of 30, reflecting strong agreement about the system's usefulness and performance.

Because of this, the goals of the project were clearly achieved. This study is important because it offers a practical solution for better file management in academic institutions. It shows how technology can make everyday tasks easier and more secure. It also serves as a helpful reference for future researchers who want to build similar systems in other schools or offices.

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