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CHARISM: A Web-Based Community Extension Service Management Platform

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ABSTRACT

This study introduces CHARISM, an innovative and scalable web-based platform that enhances the management of community extension services by digitizing service-hour logging, automating document verification, and providing real-time monitoring through centralized dashboards. By applying both the Technology Acceptance Model (TAM) and ISO/IEC 25010 standards, the study offers a comprehensive evaluation of user acceptance and system quality, addressing a gap where these frameworks are rarely combined. The findings reveal that users perceive the platform as highly useful and easy to use, leading to a strong intention to adopt and continuously utilize the system.

These results are significant as they demonstrate how a purpose-built digital solution can resolve inefficiencies associated with manual processes, improve accuracy in documentation, and strengthen transparency in community engagement activities. Furthermore, the study highlights the importance of integrating usability and technical quality to ensure successful system adoption in academic environments. Overall, CHARISM provides a practical and adaptable model for modernizing community extension management, supporting institutions in delivering more efficient, reliable, and user-centered services.

Keywords: Community extension services, web-based system, service monitoring, student participation, Technology Acceptance Model, system usability, ISO/IEC 25010 evaluation

Introduction

Community extension services are an essential component of higher education in the Philippines, promoting civic engagement, social responsibility, and student participation in nation-building. However, many institutions still rely on manual and paper-based processes for managing community service activities, leading to inefficiencies such as inaccurate record-keeping, delayed verification, and fragmented documentation. These challenges increase administrative workload and make it difficult for students, faculty, and administrators to effectively monitor and validate service hours. Despite the growing adoption of digital solutions in various sectors, the implementation of integrated systems for community extension management remains limited, and existing approaches often fail to provide real-time tracking, transparency, and ease of use.

To address these challenges, this study proposes **CHARISM**, a web-based platform designed to streamline the management of community extension services. The system centralizes service-hour logging, automates document verification, and provides real-time dashboards for monitoring participation and progress. CHARISM aims to improve efficiency, accuracy, and accessibility by replacing traditional methods with

a unified digital solution. It benefits students by simplifying the completion of service requirements, assists administrators in monitoring and validating records, and supports institutions in ensuring organized and transparent community engagement processes.

In alignment with the United Nations Sustainable Development Goals (SDGs), CHARISM supports SDG 4: Quality Education by promoting inclusive and equitable learning through the formalization of community extension services and enhancing student engagement in service-learning activities. The platform strengthens institutional processes by ensuring transparent and efficient tracking of service hours, contributing to the holistic development of socially responsible students. It also contributes to SDG 16: Peace, Justice, and Strong Institutions by improving accountability and transparency through real-time dashboards and data-driven decision-making. Furthermore, CHARISM advances SDG 17: Partnerships for the Goals by fostering collaboration between the university, students, and community partners through a reliable and structured digital infrastructure that supports consistent, verifiable, and sustainable engagement initiatives.

Materials and Methods

Research Design and Study Approach

This study utilized a developmental research design with a quantitative evaluation approach to assess the functionality, usability, and acceptance of CHARISM among college students and IT experts in a higher education setting. The development phase followed an iterative process of design, implementation, and refinement to ensure that the system effectively addresses challenges in managing community extension services. The evaluation component employed structured survey questionnaires based on the Technology Acceptance Model (TAM) to measure Perceived Usefulness (PU) and Perceived Ease of Use (PEU) among student users, while ISO/IEC 25010 standards were used by IT experts to assess system quality characteristics such as functional suitability, performance efficiency, and reliability. Data were collected through online surveys and analyzed using descriptive statistics, including weighted mean and standard deviation, to provide measurable insights into system effectiveness and user acceptance. This approach ensured a comprehensive evaluation of both user experience and technical performance.

System Development Methodology

The CHARISM platform was developed using an **Agile Software Development Methodology** within the System Development Life Cycle (SDLC). Agile was selected for its iterative and user-centered approach, allowing continuous improvements based on stakeholder feedback throughout the development process. The methodology included requirement gathering from students, administrators, and community extension personnel; system design and interface development; integration of key features such as electronic service-hour logging, automated verification, real-time dashboards, and reporting tools; followed by pilot testing and system refinement. Continuous testing and feedback loops ensured that the platform remained responsive to user needs while maintaining system reliability and performance. This methodology enabled the development of a flexible, scalable, and efficient web-based solution for managing community extension services.

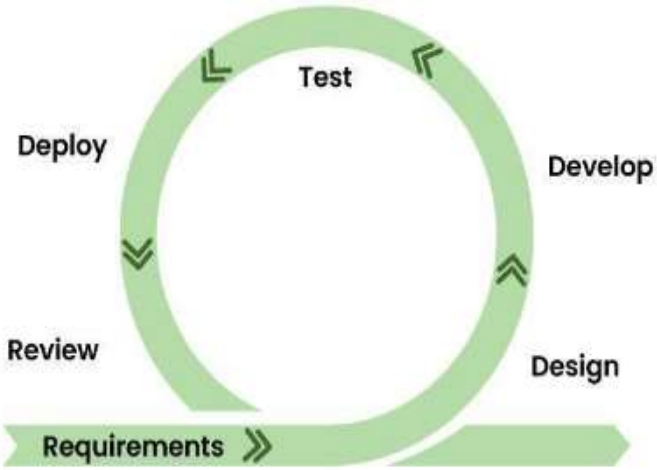

Figure I. Agile System Development Methodology

Participants and Study Setting

The study was conducted among selected college students from 1st to 4th year levels in a higher education institution. A total of 106 students served as primary respondents, chosen through purposive sampling based on their prior use of the CHARISM platform. In addition, five IT professionals with 3–5 years of experience in React-based application development evaluated the system's technical functionality and overall software quality in accordance with ISO/IEC 25010 standards. Eligibility criteria for student participants included active system usage and access to digital devices with stable internet connectivity. Data were collected using a structured survey based on the Technology Acceptance Model (TAM), which measured Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) through a 5-point Likert scale, while system quality was assessed using ISO/IEC 25010 criteria as evaluated by the IT experts.

Research Instrument

The study utilized a structured survey instrument based on the Technology Acceptance Model (TAM), measuring Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Behavioral Intention to Use (BI) using a five-point Likert scale. The questionnaire was divided into key sections, including the demographic profile of respondents, system usage experience, and TAM-related constructs. Reliability testing was conducted, confirming that all variables achieved a Cronbach's Alpha value of at least 0.70, indicating acceptable internal consistency. In addition, an evaluation checklist grounded in ISO/IEC 25010 standards was employed to assess the system's software quality across four dimensions: functional suitability, usability, reliability, and performance efficiency. This evaluation was completed by IT experts to ensure an objective assessment of the system's technical aspects. The survey was administered through Google Forms, and the collected data were analyzed using descriptive statistics to examine the relationships among PU, PEOU, and BI.

Data Collection Procedure

Data collection commenced after securing the necessary approvals and permissions from the concerned academic institution. Participants were provided with informed consent forms prior to their involvement in the study. The structured survey questionnaire, based on the Technology Acceptance Model (TAM),

was administered to respondents through Google Forms. The instrument measured Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Behavioral Intention (BI) using a five-point Likert scale. During system deployment, participants interacted with the CHARISM platform to evaluate its real-world usability and functionality. In addition, selected respondents and IT experts provided further insights through informal feedback to support system evaluation. IT experts also assessed the system's software quality using an evaluation checklist based on ISO/IEC 25010 standards, focusing on functional suitability, usability, reliability, and performance efficiency.

Data Collection Procedure

Quantitative data were analyzed using descriptive statistical methods, particularly weighted mean and standard deviation, to determine the level of user acceptance across TAM dimensions. Meanwhile, qualitative feedback was examined using thematic analysis to identify recurring patterns related to usability issues, system expectations, and user experience. The study's primary parameters of observation included Perceived Usefulness, Perceived Ease of Use, Behavioral Intention, user satisfaction, and technical reliability. The results were organized into tables to support the interpretation of findings and to evaluate the overall effectiveness of the system.

Results and Discussion

The CHARISM system is designed with a comprehensive technical framework and integrated functionalities that support efficient and organized management of community service activities within the university. Despite its advantages, the study recognizes several challenges that may affect user adoption among students. To address these concerns, the research evaluates students' perceptions of the CHARISM platform using key constructs from the Technology Acceptance Model (TAM), specifically Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Behavioral Intention (BI) to use the system.

Perceived Usefulness (PU)

Table 1. Perceived Usefulness (PU) Evaluation Results of the CHARISM Web-Based Platform

Characteristics	**Grand Mean**	**Verbal Interpretation**
CHARISM has streamlined the process of meeting my required community service hours	3.38	Very High
Using CHARISM has improved my understanding of the goals and outcomes of the community projects I participate in.	3.47	Very High
Finding Community Service opportunities on CHARISM remained difficult and time consuming	1.72 (Reversed coded)	Very Low
Final Grand Mean	**3.43**	**Very High**

Table 1 shows that students experience minimal challenges in adopting the CHARISM platform, with most concerns centered on initial system familiarity and navigation. Overall, the findings indicate low levels of hesitation, as students generally express confidence in the system's usability, reliability, and accessibility, which supports the successful adoption of platforms like CHARISM.

Perceived Ease of Use (PEU)

Table 2. Perceived Ease of Use (PEU) Evaluation Results of the CHARISM Web-Based Platform

Characteristics	Grand Mean	Verbal Interpretation
I often felt frustrated by logistical issues while using CHARISM	1.56 (Reversed-coded)	Very High
I find CHARISM's functions easy to learn.	3.31	Very High
I thought using CHARISM felt complex and confusing	1.62 (Reversed-coded)	Very Low
It was easy to get CHARISM to do what I wanted it to do	3.18	High
I believe I could use CHARISM without continuous assistance from staff	3.20	High
Final Grand Mean	**3.28**	**Very High**

Table 2 shows that students found CHARISM easy to use and navigate, with a high perceived ease of use (mean = 3.28). While minor improvements are needed in some features, overall usability increased user confidence and resulted in a strong intention to continue using the system, supporting the Technology Acceptance Model.

System Features

The CHARISM system provides students and administrators with a user-friendly web-based platform for managing, monitoring, and documenting community extension service activities within the university.

Figure I. Student Dashboard

The Student Dashboard provides students with an individualized progress center for monitoring their community service requirements. It presents a clear overview of approved service hours, completion percentage, and remaining obligations through intuitive metrics and progress indicators.

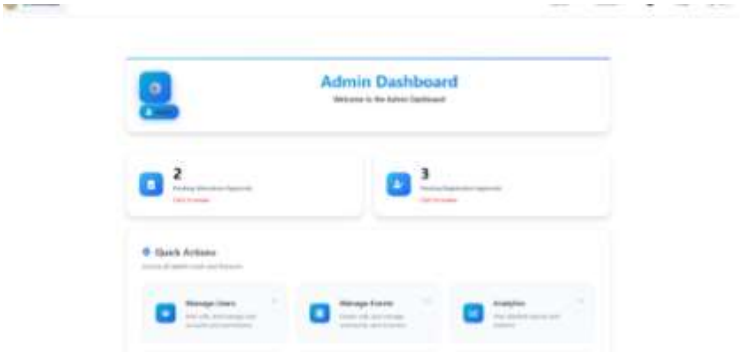

Figure II. Admin Dashboard

The Admin Dashboard illustrates the primary control interface for administrators, offering a consolidated overview of system operations. It displays pending approvals, registration requests, and essential system statistics that support effective monitoring of platform performance.

Conclusion

The CHARISM web-based platform is designed to improve the management and monitoring of community extension services within higher education institutions by providing a centralized system for documenting student participation and service activities. Findings from the study revealed some challenges related to system familiarity and initial user adaptation, yet also showed that students demonstrated a strong willingness to use the platform once they became familiar with its functions. With features such as activity tracking, service hour recording, user dashboards, submission of requirements, and administrative reporting tools, the system addresses both organizational and documentation-related concerns in extension service management. By offering a structured, accessible, and user-friendly platform, CHARISM has the potential to enhance efficiency, improve record accuracy, and support better decision-making in community service monitoring. However, its long-term effectiveness depends on continuous enhancements in usability, accessibility, and user support.

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