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ENHANCING ALUMNI EVENTS MANAGEMENT WITH DIGITAL TOOLS: DEVELOPMENT AND EVALUATION OF ALUMNI EVENTS MANAGEMENT SYSTEM

[1]Nurain Ahmad Nasri, [2]Lily Julenti Abu Bakar, [3]Amelia Hakimi & [4]Kang Eng Thye
Alumni Centre UUM,
Universiti Utara Malaysia, Malaysia

[1]Corresponding author: nurainnasri9@gmail.com

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ABSTRACT

The Alumni Events Management System was created to overcome the limitations of manual alum event management, where data is frequently stored in unstructured files, record-keeping is inefficient, and report generation is time-consuming and error-prone. Using a structured prototyping methodology, the system creates a centralised, secure, and user-friendly platform accessible via desktop and mobile devices. Staff administrators can manage events, register participants, update alum profiles, and generate automated reports, whereas alums can easily register, update their information, and view event details. A usability test with 30 participants, including alums and administrators, revealed high satisfaction with the system's usability, dependability, and ability to improve communication and administrative efficiency. The findings highlight the system's potential to increase alum engagement, reduce operational costs, and serve as a modern digital alternative to traditional paper-based processes, thereby contributing to long-term institutional development.

Keywords: Alumni Engagement, Event Management System, Usability Evaluation, Higher Education, Digital Transformation

INTRODUCTION

Universiti Utara Malaysia (UUM) has long recognised the significance of fostering strong connections between the university and its alums. The Alumni Centre plays a crucial role in maintaining this relationship by acting as a bridge between graduates and the institution. Over the years, various initiatives have been implemented to ensure continuous engagement, allowing alums to contribute to the university's

growth while benefiting from networking opportunities and professional development. These efforts help create a lasting bond between alums and UUM, ensuring they remain active members of the university community even after graduation.

The Alumni Centre at UUM was officially established in 2008 to support the university's development through strategic partnerships with alums. However, the alum engagement initiatives date back further, with the establishment of the Universiti Utara Malaysia Alumni Association (PAUUM) in 1992. The first batch of UUM alums consisted of 297 graduates from the university's inaugural convocation in 1988. Since then, the alum network has grown significantly, encompassing thousands of graduates from diverse academic backgrounds. The organisational structure of the Alumni Centre has evolved, with the UUM Alumni Unit being upgraded to an independent centre in 2008 to better manage alum activities and collaborations.

To strengthen its relationship with alums, the Alumni Centre has outlined a clear vision and mission. The vision focuses on maintaining ongoing relationships with students and ensuring that alums remain engaged with their alma mater. Meanwhile, the mission emphasises the establishment of innovative partnerships between alums and the university, fostering meaningful collaboration, networking, and mutual support. Through these strategic efforts, the Alumni Centre aims to enhance alum participation in university activities, contribute to institutional development, and provide lifelong learning opportunities for graduates.

The Alumni Centre is actively involved in various initiatives to support alum engagement. These include updating alum databases, facilitating collaborations between alums and the university, expanding networking opportunities, managing alum contributions, and organising events that encourage continued involvement. By implementing these activities, the Alumni Centre ensures that UUM alums maintain strong ties with the university while also contributing to its continuous growth. Through effective alum engagement strategies, UUM strives to build a dynamic, interconnected alumni network that benefits both graduates and the institution.

To effectively address the challenges of data management, event coordination, and alums engagement, a digital solution is required. As a result, this study focuses on creating an Alumni Events Management System using a structured prototyping methodology that emphasises iterative design, continuous user feedback, and refinement to ensure the final system is user-friendly, secure, and meets the needs of both administrators and alums.

LITERATURE REVIEW

Alum engagement has become a strategic priority in higher education, as strong alum networks help to improve institutional reputation, funding, and student success. Digital tools have transformed alum relations by providing universities with structured systems to manage data, coordinate events, and strengthen long-term relationships with graduates. According to recent research, effective alum management platforms not only facilitate communication but also promote lifelong learning, professional networking, and opportunities for alums to give back to their alma mater (Mohammed et al., 2023).

Digital Tools in Alumni Centre

UUM's Alumni Centre has implemented the Alumni Management Information System (AMIS) to improve the management of alumni data. This system has proven effective in improving communication between

the university and its alums, with nearly 4,000 alumni having updated their career information as of February 2021. The system not only maintains a comprehensive alumni database but also facilitates ongoing engagement and strengthens the bond between the university and its former students.

In addition to AMIS, UUM has embraced Mobile Augmented Reality (MAR) by launching an interactive brochure. This innovative tool provides prospective students, particularly international students, with detailed and interactive information about the university's programs, facilities, and services. By offering a more engaging and informative experience, the i-brochure enhances prospective students' understanding of the university, making it easier for them to make informed decisions (Zuraidah, 2022).

Benefits of the System

One of the primary advantages of using an Alumni Events Management System is increased communication and engagement with alumni. Universities can use digital platforms to share information about reunions, seminars, and networking events in real time via notifications, emails, and mobile alerts. Recent research indicates that effective use of these channels increases alumni loyalty and a sense of belonging to the institution (Mohammed et al., 2023). By providing timely and relevant updates, institutions can ensure long-term alumni participation in university initiatives.

Another significant advantage is effective data management. A centralised alumni system can monitor attendance, solicit feedback, and save event-related data for future planning. Administrators can use structured data management to better segment alumni groups and design targeted outreach strategies. Rubejes-Silva (2024) demonstrated that digital alumni platforms improve decision-making by allowing for secure, structured databases that support both administrative efficiency and alumni satisfaction. Similarly, the Southeast Asian Institute of Technology (2025) stated that its Alumni Tracer and Management System improved record accuracy and simplified reporting, resulting in more responsive alumni services.

Digital platforms also encourage greater accessibility and inclusivity by allowing alumni to register online, receive real-time updates, and attend virtual or hybrid events. This is particularly useful for international alumni who may be unable to attend in person. Suriani Jack et al. (2025) discovered that digital engagement systems reduce barriers to participation and broaden institutional reach by incorporating mobile and web-based tools that facilitate ongoing alumni engagement. This flexibility ensures that alumni stay connected despite geographical or professional constraints, thereby strengthening long-term engagement.

Challenges in Implementation

While digital tools offer numerous advantages, ensuring user satisfaction during implementation is a significant challenge. Alumni engagement platforms must be intuitive, easy to use, and tailored to users' needs. Recent research has shown that poorly designed systems or limited interactivity can discourage participation and reduce the impact of digital initiatives (Rubejes-Silva, 2024). To address this, institutions must continually assess usability and content delivery, incorporating alumni feedback to improve the overall experience. Without user-friendly and responsive platforms, digital tools may fall short of their intended goals of increasing engagement and accessibility.

Another challenge is keeping data accurate in digital alumni systems. Effective alumni engagement requires up-to-date and verified information; however, maintaining continuous updates and validation processes can be time-consuming. Inaccurate or outdated records can cause miscommunication and reduce the effectiveness of digital engagement efforts (Zuraidah, 2022). To address this issue, universities should

implement automated data verification systems and encourage alumni to update their profiles regularly to ensure database reliability.

Technological adaptation also poses a significant challenge, particularly for users unfamiliar with advanced digital tools. Alums and university staff may require training and technical assistance to effectively navigate new platforms such as AMIS and the i-brochure.

Without adequate onboarding and support systems, resistance to technological change can impede the adoption and use of these digital tools. Institutions must invest in user training and ongoing support to ensure seamless integration and maximize the benefits of digital platforms.

Case Studies and Applications

The University of Michigan is an excellent case study for alum engagement via digital platforms, having implemented a centralised engagement system to coordinate events, communication, and alumni data. This system enabled personalised outreach, allowing alumni to receive invitations based on their preferences and location. According to recent reports, data-driven approaches significantly increase alumni participation while also ensuring more accurate and reliable alumni records (Mohammed et al., 2023). The case demonstrates the effectiveness of digital systems in managing large-scale alumni networks and strengthening institutional ties.

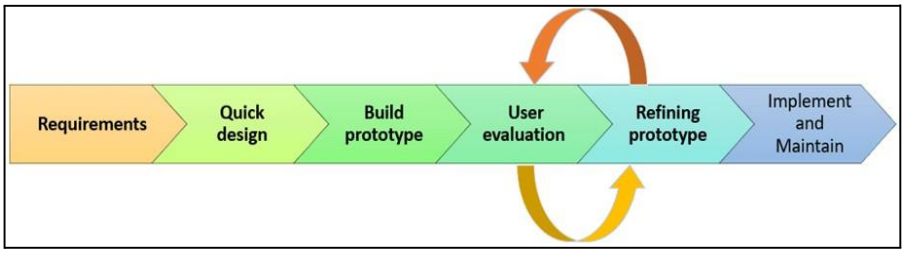
Similarly, Yale University improved its alumni relations by implementing the YAA (Yale Alumni Association) Event Management System, which includes registration, payment, communication, and feedback capabilities. This digital tool supports both in-person and virtual events, enabling greater participation, particularly from international alumni. The platform also provides metrics for post-event analysis, allowing Yale to fine-tune future engagement strategies based on attendance and alumni feedback (Council for Advancement and Support of Education, 2020). These examples demonstrate how digital event platforms not only streamline operational processes but also foster long-term relationships with alumni.

METHODOLOGY

The Alumni Events Management System was developed using a structured prototyping methodology. This approach enabled the team to refine the system through continuous feedback and testing iteratively, ensuring the final product met the unique needs and expectations of its users. The methodology included several distinct phases, each building upon the previous one to create a robust and user-friendly system. This section provides a detailed explanation of each phase, highlighting the steps taken and the rationale behind them.

Figure 1

Research Methodology



Requirements Gathering:

During the first phase, the specific requirements for the Alumni Event Management System were carefully defined. This entailed consulting with company staff, including the director, deputy director, and staff at the Alumni Centre UUM, to understand their requirements and expectations better. Key requirements identified included user-friendly interfaces, efficient management of events and event data, simple report generation, and secure access.

The requirements-gathering phase is critical because it establishes the framework for the entire development process. By engaging potential alumni users and staff admins, the development team can ensure the application meets real-world needs and solves real problems. This phase typically includes interviews, surveys, and workshops to gather detailed information about user needs, current challenges, and desired features.

Quick Design:

Based on the gathered requirements, a quick design phase was conducted. This phase concentrated on designing the user interface and overall system layout. Wireframes and mockups were created to visualise the system's main screens, including the login screen, alum registration, event management, and report generation. The design ensured that the system was intuitive and met the needs identified during the requirements-gathering phase.

The quick design phase is an important step in turning requirements into tangible products. By creating wireframes and mockups, the development team can quickly test different design options and gather early feedback. This phase helps identify potential design flaws and make the necessary changes before proceeding to the more time-consuming process of creating a functional prototype.

Build Prototype:

The quick design was turned into a functioning prototype. This prototype included basic functions such as user registration and login, event management, and report generation. The goal was to create a working prototype of the system that could be tested and evaluated by actual users. The prototype was created in Visual Studio Code to ensure compatibility with smartphones, personal computers, laptops, and other devices.

Building a prototype is a critical step in the prototyping process. It enables the development team to produce a functional version of the application that can be tested in a real-world setting. The prototype is used as a proof of concept and to identify any functional issues or gaps in the requirements. It also serves as a foundation for user feedback, which is essential for improving the system.

User Evaluation:

The functional prototype was evaluated by staff admins, alumni, and others. Participants were asked to interact with the system and rate its event participation, system usability, system features and improvements, and overall satisfaction. Quantitative data were gathered via surveys in which participants rated various aspects of the system. This phase was critical for identifying usability issues and collecting user feedback.

User evaluation is an important step in the prototyping process because it provides direct feedback from end users. By including actual users in the evaluation process, the development team can learn how well the application meets their needs and expectations. This phase helps identify usability issues, functional gaps, and other problems that must be addressed.

Refining the Prototype:

The prototype was refined based on feedback from the user evaluation phase to address identified issues and improve the overall user experience. The user interface, navigation, and functionality were all modified to ensure the application met users' expectations and needs. This iterative refinement process ensured that the final product was effective and user-friendly.

The prototype is refined iteratively, with adjustments made based on user feedback and changes tested to ensure they address the identified issues. This phase helps ensure the finished product is polished and meets its users' needs. It also provides an opportunity to incorporate any additional features or improvements discovered during the user evaluation phase.

Implementation and Maintenance:

Alumni Event Management's final version was implemented after the prototype was refined and validated through user feedback. This phase entailed deploying the application for use at the Alumni Centre UUM and for alum users, and implementing support mechanisms. Ongoing maintenance was scheduled to address any future issues, provide updates, and ensure that the application met user needs.

The implementation and maintenance phase marks the transition from development to production use. During this phase, the application is deployed in the real world, and users are trained to use it. Ongoing maintenance is planned to ensure that the system continues to function correctly and meets the changing needs of its users.

ANALYSIS AND RESULTS

The questionnaire used in this study included Likert-scale items on event participation, system usability, system features, and overall satisfaction. These questions were based on established usability and technology evaluation frameworks, specifically the System Usability Scale (SUS) and TAM constructs.

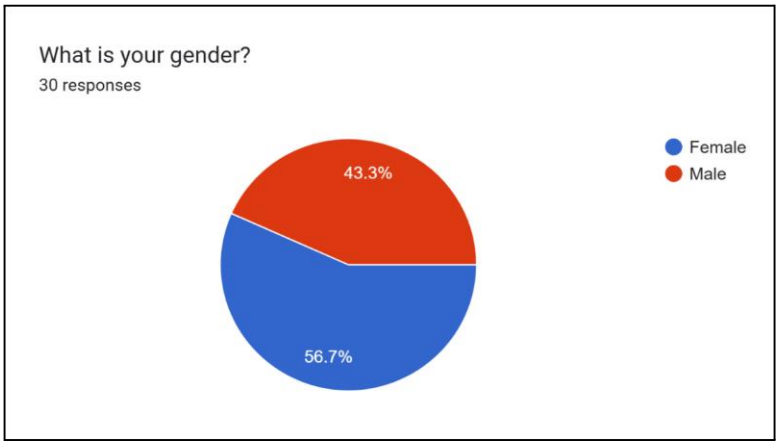
Using these established frameworks ensured that the evaluation was valid and reliable, in line with best practices in usability testing (Bangor et al., 2020; Rubejes-Silva, 2024; Suriani Jack et al., 2025; Southeast Asian Institute of Technology, 2025).

Demographics

The results of the usability evaluation of the Alumni Event Management System were derived from responses from 30 participants. The findings are presented below using descriptive charts and tables to visualise the outcomes effectively.

Figure 2

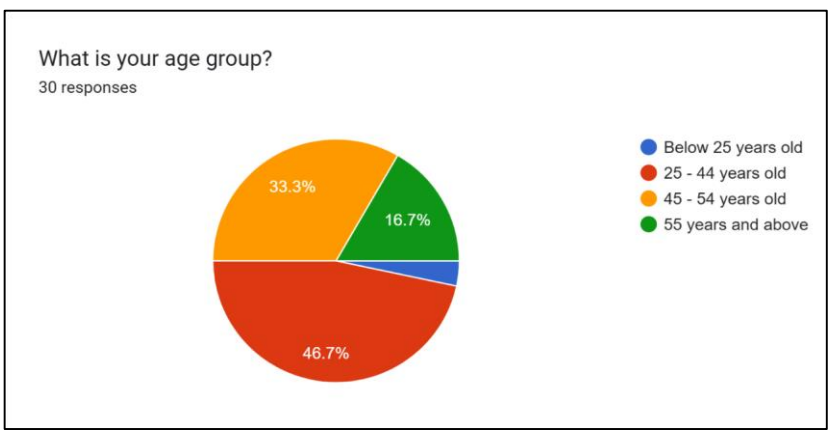
Gender



The distribution of survey respondents' genders is shown in the pie chart above. Of the 30 participants who responded, 56.7% identified as female and 43.3% as male. This suggests that female respondents to this survey participated at a somewhat higher rate than male respondents. Equitable gender representation provides insights into user viewpoints across demographic groups.

Figure 3

Age

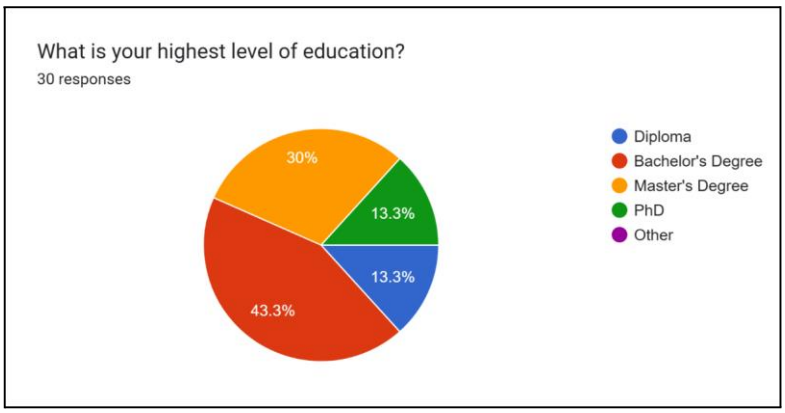


The age distribution of the 30 survey participants is shown in the pie chart above. 46.7% of the population is between the ages of 25 and 44, and 33.3% is between the ages of 45 and 54. Conversely, 16.7% of those surveyed are 55 years and above, while a tiny portion, 3.33%, are below 25 years old.

With fewer younger and older graduates taking the survey, this distribution indicates that the bulk of respondents are working professionals or alums in the middle of their careers. This knowledge can be applied to event management tactics to serve the prevailing age groups better.

Figure 4

The highest level of education

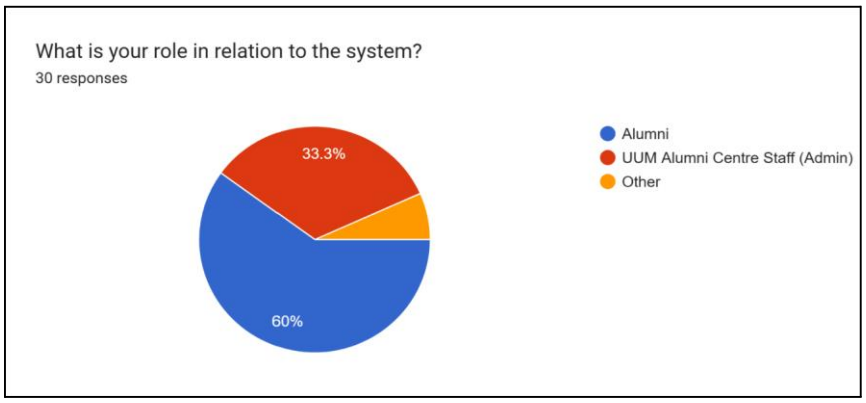


The respondents' highest level of education is shown in the pie chart. 30% have earned a master's degree, while 43.3% have a bachelor's degree. Furthermore, 13.3% of those surveyed have a diploma, and another 13.3% have earned a doctorate.

This distribution suggests the audience is well educated, as the majority of alums who responded to the poll have earned at least a bachelor's or master's degree. This knowledge helps create engagement tactics and event content that complement alums's educational backgrounds.

Figure 5

Role



Regarding the UUM Alumni Event Management System (AEMS), the roles of the 30 respondents are depicted in the pie chart. 60% are alumni, suggesting that the majority of responders are the system's main users. Additionally, UUM Alumni Centre Staff (Administrators) make up 33.3% of the workforce and oversee the system's operations and events. The 6.7% who fall into the "other" group could be external stakeholders or university employees. Because it incorporates opinions from administrators (event managers) and alumni (users), this distribution ensures a fair assessment of the system and validates that the input gathered is pertinent.

Likert Scale Questions

This section gathered the participants' ratings of the application. The findings are presented below using descriptive statistics and tables to visualise the outcomes effectively.

Figure 6

Event participation

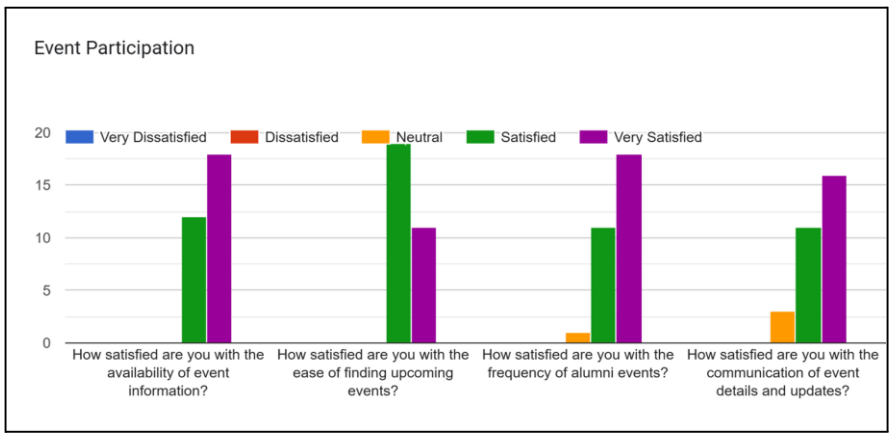


Figure 6 displays participants' event participation results. For the first question, “How satisfied are you with the availability of event information?” 60% (18 participants) were delighted, and 40% (12 participants) were satisfied. In the second question, “How satisfied are you with the ease of finding upcoming events?” 36.67% (11 participants) were delighted, and 63.33% (19 participants) were satisfied. For the third question, “How satisfied are you with the frequency of alumni events?” 60% (18 participants) were delighted, 36% (11 participants) were satisfied, and 3% (1 participant) were neutral. In the fourth question, “How satisfied are you with the communication of event details and updates?”, 53% (16 participants) were delighted, 36% (11 participants) were satisfied, and 10% (3 participants) were neutral. These results show that “very satisfied” is the most common answer among participants.

Figure 7

System Usability

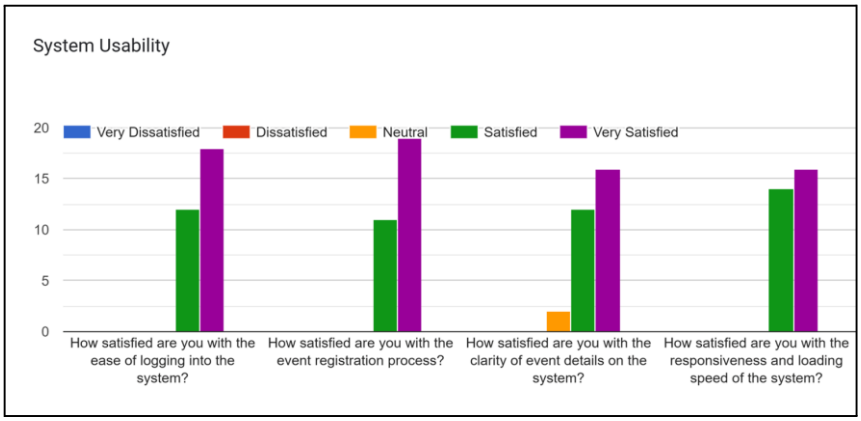


Figure 7 displays the results of system usability in the application based on participants' responses. For the first question, “How satisfied are you with the ease of logging into the system?” 60% (18 participants) were delighted, and 40% (12 participants) were satisfied. The second question, “How satisfied are you with the event registration process?” 63.33% (19 participants) were delighted, and 36.67% (11 participants) were satisfied. For the third question, “How satisfied are you with the clarity of event details on the system?”, 53.33% (16 participants) were delighted, 40% (12 participants) were satisfied, and 6.67% (2 participants) were neutral. The fourth question, “How satisfied are you with the responsiveness and loading speed of the system?” 53.33% (16 participants) were delighted, and 46.67% (14 participants) were satisfied. These findings indicate that many participants chose "delighted" as the answer in this section.

Figure 8

System Features and Improvement

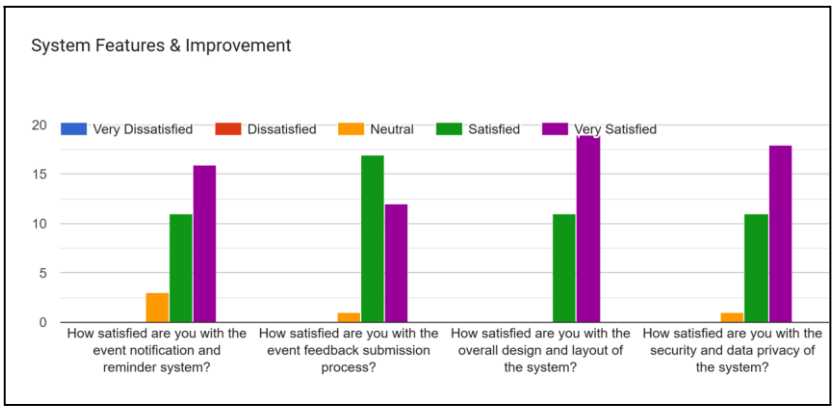


Figure 8 displays the results of system features and improvement in the application based on participants' responses. For the first question, “How satisfied are you with the event notification and reminder system?” 53.33% (16 participants) were delighted, 36.67% (11 participants) were satisfied, and 10% (3 participants) were neutral. The second question, “How satisfied are you with the event feedback submission process?” 40% (12 participants) were delighted, 56.67% (17 participants) were satisfied, and 3.33% (1 participant) were neutral. For the third question, “How satisfied are you with the overall design and layout of the system?” 63.33% (19 participants) were delighted, and 36.67% (11 participants) were satisfied. The fourth question, “How satisfied are you with the security and data privacy of the system?” 60% (18 participants) were delighted, 36.67% (11 participants) were satisfied, and 3.33% (1 participant) were neutral. These results show that “very satisfied” is the most selected response in this section.

Figure 9

Overall Satisfaction

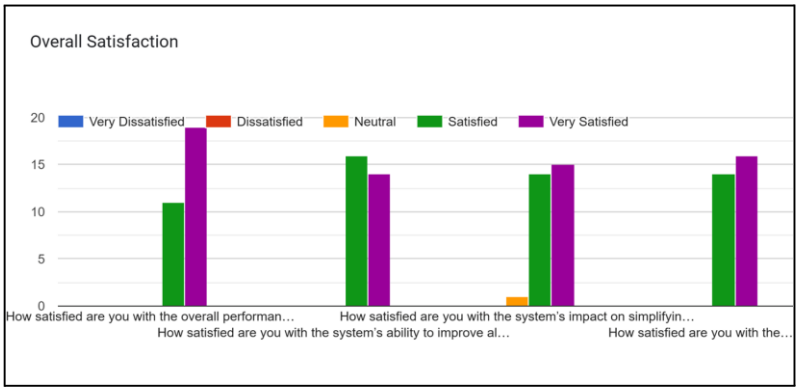


Figure 9 illustrates participants' overall satisfaction with the application, as determined from their responses. For the first question, “How satisfied are you with the overall performance of the system?”, 63.33% (19 participants) were delighted, and 36.67% (11 participants) were satisfied. The second question, “How satisfied are you with the system’s ability to improve alumni engagement?” 46.67% (14

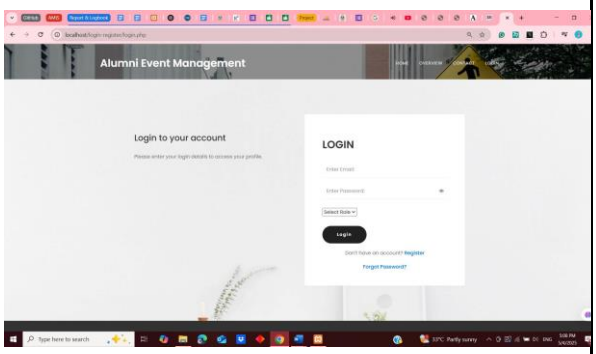
participants) were delighted, and 53.33% (16 participants) were satisfied. For the third question, “How satisfied are you with the system’s impact on simplifying event management?” 50% (15 participants) were delighted, 46.67% (14 participants) were satisfied, and 3.33% (1 participant) were neutral. The fourth question, “How satisfied are you with the overall user experience of the system?” 53.33% (16 participants) were delighted, and 46.67% (14 participants) were satisfied. These findings prove that many participants chose "delighted" as their response in this section.

The system usability evaluation involved 30 participants, including alumni and staff administrators. A Cronbach's Alpha reliability test was conducted to assess the questionnaire's reliability. The analysis produced a coefficient of 0.87, which is considered highly acceptable (George & Mallery, 2020). This suggests that the instrument had high internal consistency and was appropriate for assessing the system's usability and effectiveness.

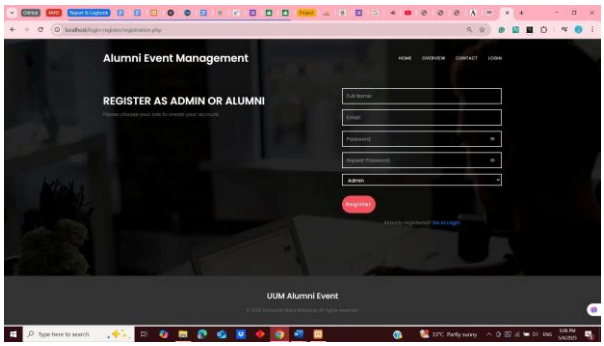
Interface of Alumni Events Management System

Figure 10

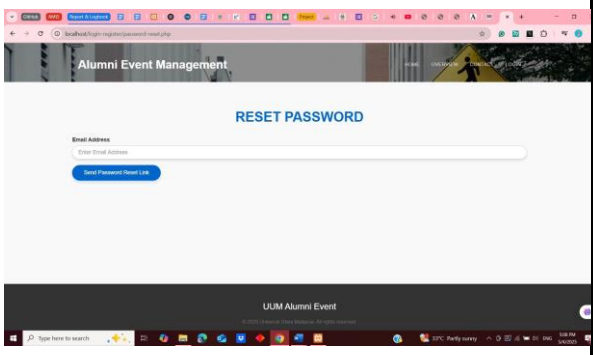
Interfaces of the System



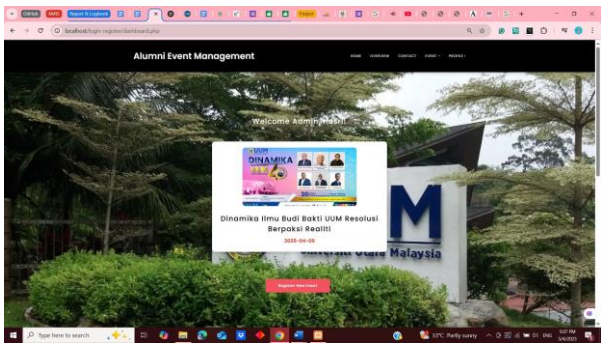
(a) Login page



(b) Register page

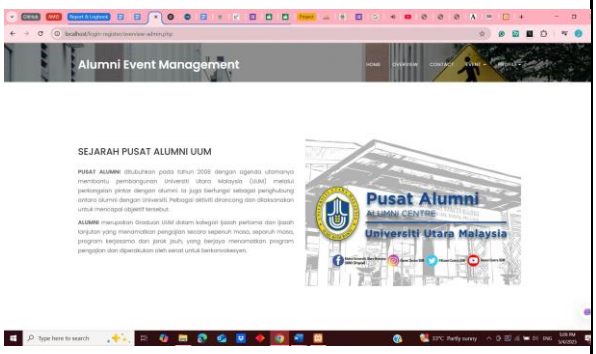


(c) Reset password page

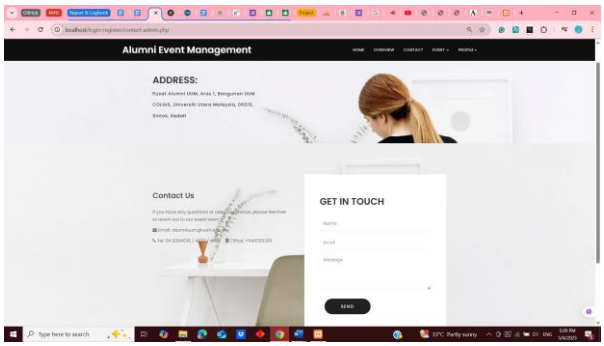


(d) Admin home page

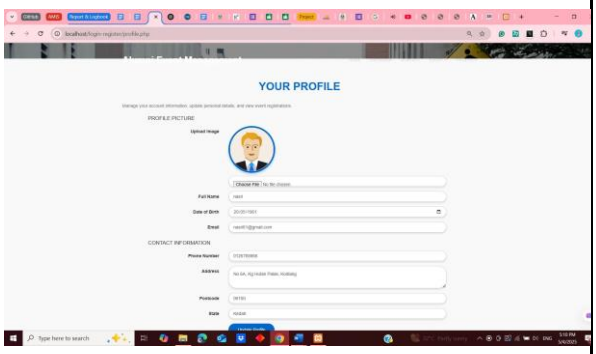
Displays the central dashboard for administrators, providing quick access to event and alums management features.



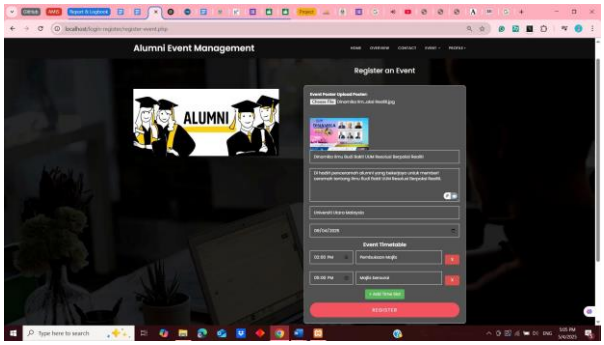
(e) Overview page



(f) Contact page

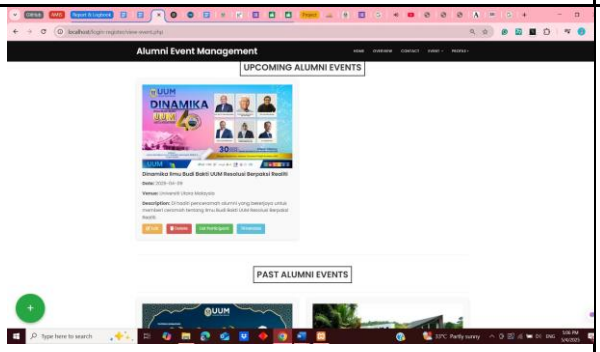


(g) Profile page



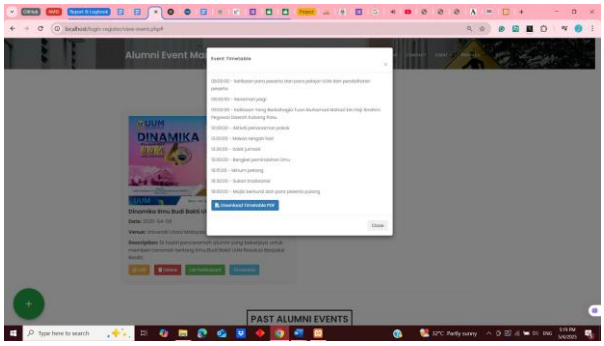
(h) Register event

Allows alumni to register for upcoming events using a simple online form.

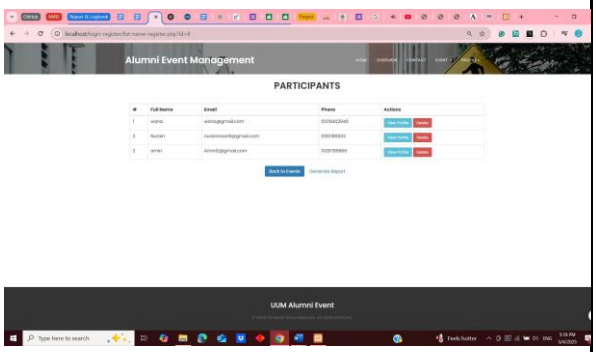


(i) List event admin page

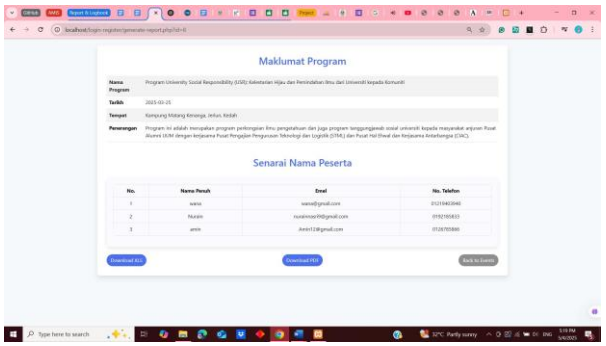
Displays all events in a structured list, allowing administrators to manage and update event information.



(j) Timetable

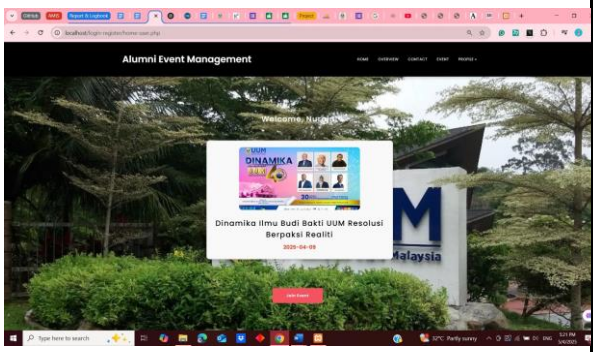


(k) List participant page



(l) Generate report page

Administrators can create and export event reports in PDF format to ensure accurate record-keeping.



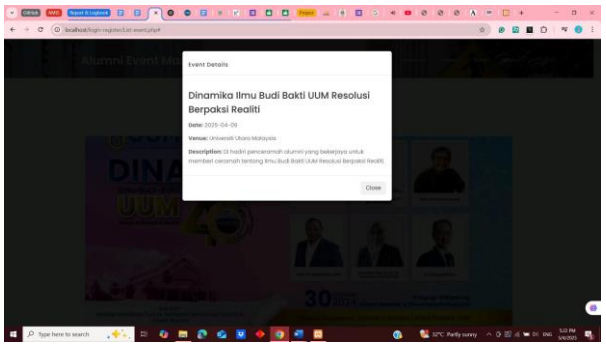
(m) User alumni home page

Provide alumni an overview of events, notifications, and personal profile information.

(n) List event user alumni

Displays available events, including details and registration options for alumni participation.

(o) Display poster image



(p) Display more info

Figure 10 illustrates the system interfaces. It includes the login page, registration page, password reset page, admin home page, overview page, contact page, profile page, event registration page, admin event list page, timetable page, participant list page, report generation page, alumni user home page, alumni event list page, poster information display page, and detailed information display page.

CONCLUSION

In conclusion, the Alumni Events Management System was developed and evaluated to address key challenges in alumni engagement and event coordination by providing a centralised, user-friendly, and dependable digital platform. The usability test, which included 30 participants, revealed high satisfaction, with a Cronbach's Alpha of 0.87 confirming the evaluation tool's reliability. More than 90% of respondents said they were satisfied with the system's usability, communication efficiency, and ability to simplify event management.

These findings confirm that the system effectively met its goals of increasing alumni engagement, ensuring secure data storage, and reducing administrative workload. Beyond its immediate impact at Universiti Utara Malaysia, the system demonstrates how higher education institutions can use similar digital solutions to strengthen alumni relations, lower operational costs, and promote long-term institutional growth.

Nonetheless, limitations like the small sample size and short evaluation period should be addressed in future studies. Extending the system to include features such as predictive analytics, AI-driven networking recommendations, and improved mobile accessibility would enhance its effectiveness.

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