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## Hire Hub: A Smart Applicant Tracking System for streamlined recruitment

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### Abstract

**Aim:** This study designed, developed, and evaluated Hire Hub, a smart applicant tracking system intended to address inefficiencies in recruitment processes in public higher education institutions (HEIs). The system aims to improve recruitment management by automating applicant screening, tracking applications in real time, and enhancing transparency in hiring decisions.

**Methodology:** A quantitative developmental research design was employed using the Agile Software Development Model, which involved planning, design, development, testing, deployment, and review phases. System evaluation was conducted with 152 respondents, including applicants, administrative personnel, and IT experts selected through a combination of random and purposive sampling. Data were gathered using a validated five-point Likert scale questionnaire and analyzed using frequency count, percentage, weighted mean, and standard deviation.

**Results:** The developed system demonstrated a high level of performance and user acceptability across software key quality attributes based on ISO/IEC 25010 standards, including functionality, reliability, usability, efficiency, maintainability, and security. Results indicate that the system significantly improved recruitment efficiency, enabled real-time application monitoring, strengthened data security through role-based access control, and streamlined the evaluation of applicants.

**Conclusion:** The study concludes that Hire Hub provides an effective and scalable ICT-based recruitment management solution for public HEIs, supporting digital transformation and innovation in human resource management systems.

**Keywords:** applicant tracking system, smart recruitment system, web-based information system, digital HR management, ISO/IEC 25010

### INTRODUCTION

Digital transformation has fundamentally reshaped how institutions manage information, decisions, and workflows across sectors. In human resource management, intelligent systems, automation, and data-driven decision-making are increasingly transforming recruitment from manual and paper-based procedures into digital processes that are faster, more transparent, and more responsive. The growing integration of Information and Communication Technology (ICT), artificial intelligence (AI), analytics, and web-based platforms has positioned recruitment as an important area of ICT-enabled innovation in modern organizations (Stone et al., 2022; Upadhyay & Khandelwal, 2023).

Efficient recruitment and selection remain critical components of human resource management because they directly influence workforce quality and organizational effectiveness. In higher education institutions (HEIs), the recruitment of qualified faculty and administrative personnel is essential to academic excellence and the delivery of quality services. A structured and transparent recruitment process helps ensure that competent individuals are identified, assessed, and selected in a timely and efficient manner.

Currently, the university's Human Resource Management Office (HRMO) relies heavily on manual recruitment procedures. Job vacancies are disseminated through email, printed notices, bulletin boards, and institutional web pages, while applicants submit physical documents that are manually received, reviewed, and organized by HR personnel. This paper-based approach often leads to duplicated records, disorganized files, incomplete submissions, and delays in communication. Tracking applicant progress and providing timely updates likewise require extensive manual effort, reducing process efficiency and limiting transparency for both applicants and evaluators.

The screening and shortlisting stages present additional challenges. HR personnel and selection committee members independently review application documents, making it difficult to retrieve applicant information efficiently, monitor

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recruitment progress, and maintain consistency in evaluation. As the volume of applicants increases, these inefficiencies become more pronounced, underscoring the need for a centralized and automated recruitment management system.

To address such challenges, many organizations have adopted Applicant Tracking Systems (ATS), which centralize job postings, applicant submissions, document storage, and recruitment monitoring (Al Mamun & Hasan, 2023; Stone et al., 2022; Upadhyay & Khandelwal, 2023). Contemporary recruitment platforms also increasingly incorporate intelligent automation, AI-assisted screening, and analytics-driven functions that improve candidate matching and support better decision-making. Empirical studies indicate that digital recruitment platforms improve record management, reduce administrative workload, and enhance overall recruitment efficiency while also supporting structured communication and real-time applicant tracking (Almeida & Monteiro, 2022; Nikolaou, 2021).

In the Philippine context, the Civil Service Commission has continued to promote digitalization and modernization in public-sector human resource systems to improve transparency, efficiency, and service delivery (Civil Service Commission, 2023, 2024, 2025). Despite these efforts, many public HEIs still rely on manual procedures, particularly in applicant document handling, recruitment monitoring, and communication with candidates. This limits their capacity to fully leverage digital transformation in HR operations.

In response, this study proposes Hire Hub: A Smart Applicant Tracking System for Streamlined Recruitment, a centralized digital platform designed to manage applicant records, automate recruitment workflows, and support HR personnel and selection committees. The system integrates ICT-based solutions aligned with modern digital platform architectures and aims to improve efficiency, reduce manual workload, enhance transparency, and support data-driven decision-making. Ultimately, the proposed system contributes to advancing institutional recruitment practices in line with emerging technological trends and recognized software quality standards.

## Review of Related Literature and Studies

Recruitment is a fundamental function of human resource management that significantly influences organizational performance and workforce quality. With the rapid advancement of Information and Communication Technology (ICT), recruitment processes have shifted from manual practices to digital platforms that support greater efficiency, accessibility, and data-driven decision-making. Applicant Tracking Systems (ATS), in particular, have emerged as important tools for automating repetitive tasks, streamlining applicant screening, and improving data management (Almeida & Monteiro, 2022; Nikolaou, 2021; Stone et al., 2022; Upadhyay & Khandelwal, 2023).

From a system development perspective, contemporary recruitment platforms increasingly rely on centralized, web-based, and modular architectures that support database integration, role-based access control, interoperability with Human Resource Information Systems (HRIS), and scalable workflow management. These architectural characteristics strengthen recruitment transparency, system reliability, and administrative control while supporting the broader digital transformation of HR functions (Bondarouk et al., 2021; Margherita, 2022). In parallel, HR analytics systems have expanded the strategic value of digital HR platforms by enabling real-time monitoring, visualization, and evidence-based decision-making (Margherita, 2022; Marler & Boudreau, 2022).

Artificial intelligence has further advanced digital recruitment by enabling predictive and data-driven hiring processes. Machine learning algorithms support the analysis of large volumes of applicant data, improving candidate matching and reducing time-to-hire, while Natural Language Processing enhances resume parsing and job matching accuracy (Chowdhury et al., 2023; Köchling & Wehner, 2022; Nawaz et al., 2022; van Esch et al., 2021). These developments position AI as an increasingly important component of modern recruitment systems.

However, the increasing reliance on AI also introduces significant concerns related to fairness, bias, and transparency. Studies emphasize the importance of explainable and accountable AI implementation, especially in contexts where hiring decisions affect equal opportunity and institutional trust (Langer et al., 2021; Mehrabi et al., 2021; Raghavan et al., 2020). These issues are particularly relevant in public-sector recruitment, where transparency, compliance, and fairness are central expectations.

Electronic Human Resource Management (e-HRM) systems likewise play an important role in organizational digital transformation through the integration of cloud computing, analytics, automation, and data management. These systems improve communication, support process standardization, and enable continuous monitoring of HR activities, thereby strengthening institutional decision-making and service delivery (Bondarouk et al., 2021; Margherita, 2022; Marler & Boudreau, 2022; Minbaeva, 2021).

In the Philippine context, digital transformation in public-sector HR continues to be reinforced by the Civil Service Commission through digitalization and modernization initiatives, while broader e-governance efforts in public administration also support increased ICT adoption and process innovation (Civil Service Commission, 2023, 2024, 2025; Salac & Kim, 2023). These developments highlight the growing policy relevance of digital HR systems in government institutions.

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Despite these advancements, existing recruitment systems are often generalized and not tailored to the specific operational and regulatory requirements of public higher education institutions. Challenges related to compliance, transparency, secure data handling, and system integration remain insufficiently addressed in many contexts. In addition, the adoption of AI-driven recruitment technologies in developing countries remains constrained by infrastructure, resources, and institutional readiness (Köchling et al., 2022; Nawaz et al., 2022; Upadhyay & Khandelwal, 2023).

These gaps underscore the need for a context-specific and intelligent recruitment system tailored to public HEIs. Accordingly, this study introduces Hire Hub, which aims to address these limitations by providing a centralized, efficient, and standards-compliant applicant tracking system that integrates automation, structured data management, and ICT-based recruitment processes.

## Conceptual Framework

The conceptual framework of Hire Hub is based on the Agile Model, which emphasizes iterative development, stakeholder feedback, and active user involvement. This approach ensures that the system evolves through continuous refinement and incremental improvements. The framework follows the Input-Process-Output (IPO) model, providing a clear structure for the development cycle.

In this study, the Input Phase consists of data, user requirements, and institutional policy guidelines that inform the system's design. Key inputs include the functional needs of HR personnel, administrators, and applicants, focusing on usability, job tracking, document submission, and real-time notifications. Applicant data and job posting details are essential for processing and evaluation, while the technology stack ensures performance, security, and scalability. The system also adheres to legal policies such as the Data Privacy Act of 2012.

The Process Phase follows the Agile Model, which involves iterative development through short sprints. Each sprint includes planning, user story refinement, design, and prototyping, followed by development and testing. Core features like applicant submission, job posting automation, and real-time tracking are implemented in each cycle. Feedback from HR personnel, applicants, and selection committee members ensures continuous improvements, with modules like the selection committee evaluation and administrative dashboards refined over time.

The Output Phase delivers Hire Hub, a web-based platform that automates and streamlines the recruitment process. It reduces manual work, improves efficiency, and ensures transparency through real-time updates and standardized evaluation criteria. The system promotes fairness, compliance with recruitment policies, and continuous improvement through feedback, ultimately providing a sustainable and user-centered solution.

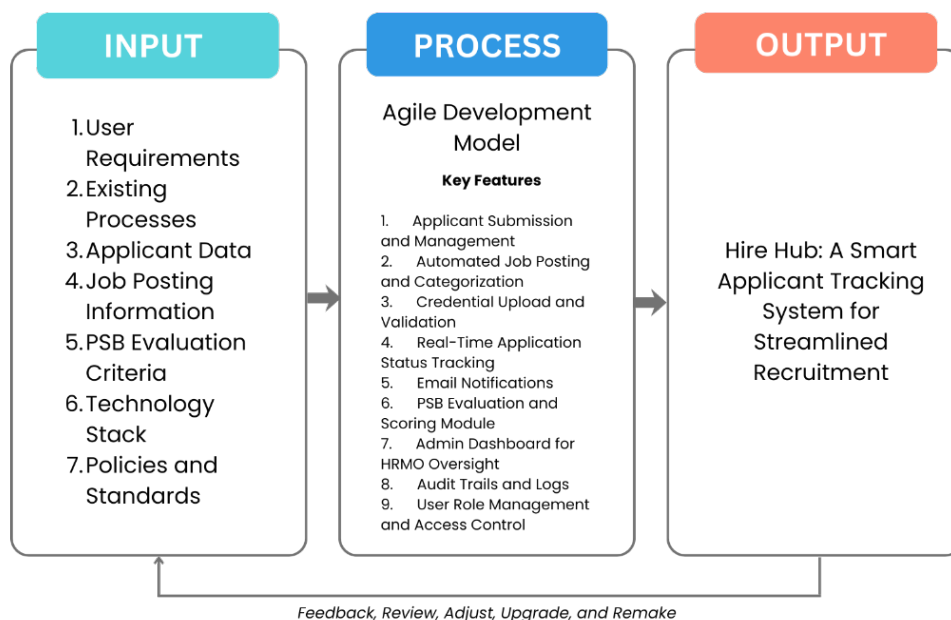


Figure 1. Input-Process-Output (IPO) Model for System Development

## Statement of the Problem

Higher education institutions (HEIs) increasingly require efficient digital systems to support human resource management processes. However, many universities, including Samar State University, continue to rely on manual recruitment procedures that create operational inefficiencies and limit effective data management. Recruitment activities such as job posting, applicant submission, document verification, and evaluation are often conducted through paper-based records and email communication, resulting in duplicated files, fragmented data storage, delayed feedback to applicants, and increased administrative workload for Human Resource Management Office (HRMO) personnel.

The absence of a centralized digital recruitment system also makes it difficult for HR personnel and selection committees to monitor applicant progress, retrieve records efficiently, and maintain consistent evaluation procedures. As the volume of applicants increases, these limitations significantly affect recruitment efficiency, transparency, and data integrity. Manual processes further increase the likelihood of human error, misplaced documents, and delays in decision-making. Advancements in Information and Communication Technology (ICT) and web-based recruitment platforms have enabled organizations to automate hiring processes through Applicant Tracking Systems (ATS), which centralize applicant data, automate recruitment workflows, and support real-time monitoring of application progress. Despite these technological developments, many public higher education institutions still lack a dedicated system tailored to their recruitment policies and operational requirements.

Given these challenges, there is a need to design and develop a centralized, automated recruitment management system that can streamline applicant submission, facilitate document management, automate job posting and applicant tracking, and enhance communication between applicants and HR personnel. Addressing this technological gap will support digital transformation in university recruitment systems while improving efficiency, transparency, and data security.

## Research Objectives

### General Objective

To design, develop, and evaluate a smart web-based applicant tracking system that automates and streamlines recruitment processes in a higher education institution.

### Specific Objectives

1. To design and develop Hire Hub, a web-based Applicant Tracking System that automates job posting, applicant submission, document management, and recruitment monitoring.
2. To evaluate the performance of the developed Hire Hub system based on the ISO/IEC 25010 software quality model in terms of:
  - Functionality
  - Reliability
  - Usability
  - Efficiency
  - Maintainability
  - Security
3. To propose recommendations for the effective implementation and adoption of the Hire Hub system to enhance recruitment efficiency, transparency, and data management in the university.

## Research Questions

1. What system design and functional features should be developed in a web-based Applicant Tracking System to automate and streamline the university's recruitment processes?
2. What is the level of performance of the developed Hire Hub system in terms of the following ISO/IEC 25010 software quality attributes:
  - functionality
  - reliability
  - usability
  - efficiency
  - maintainability
  - security?

3. What recommendations can be proposed for the effective implementation and adoption of the Hire Hub system to optimize the recruitment process of the university?

## Hypothesis

H<sub>0</sub>: There is no significant difference in the mean evaluation scores of the Hire Hub system across user groups based on ISO/IEC 25010 attributes.

## METHODS

### Research Design

This study employed a quantitative developmental research design involving system prototype development and software engineering evaluation. The design was appropriate because the study focused on designing, developing, and evaluating a web-based applicant tracking system intended to improve recruitment processes in a higher education institution.

The system was developed using the Agile Software Development Model, an iterative and flexible framework that emphasizes continuous improvement, adaptability, and close collaboration with users. The Agile process covered planning, design, development, testing, deployment, and review. In the planning phase, a needs assessment was conducted through interviews and document review to identify inefficiencies in the recruitment process at Samar State University. This informed the system objectives, scope, and functional requirements, including job posting, applicant tracking, document management, notification functions, and role-based access control.

Hire Hub was developed as a web-based client-server platform in which users accessed the application through a browser interface while data were stored in a centralized database. The front-end interface was implemented using HTML5, CSS, and JavaScript, while the back-end application logic was developed using PHP through the Laravel framework. Applicant and recruitment records were managed through a MySQL database, enabling structured storage, retrieval, and monitoring of system data. The platform was deployed in a secure institutional web environment that supported role-based authentication, controlled access, and browser-based interaction.

During the design phase, the system architecture, database schema, and user interface wireframes were developed. Key features such as application submission, document management, automated notifications, evaluation workflows, and administrative dashboards were specified in accordance with the approved system requirements. Compliance with the Data Privacy Act of 2012 (RA 10173) was also considered in the design of data handling and access control mechanisms.

In the development phase, functional modules were implemented according to the approved design and coding standards, with internal reviews conducted during each sprint to maintain system quality. System testing followed a three-stage procedure consisting of alpha testing, beta testing, and pilot implementation. Alpha testing was conducted by IT experts to identify technical issues and verify system functionality. Beta testing was then conducted with applicant users and administrative users to assess usability, reliability, and security. A pilot implementation was subsequently carried out in actual recruitment-related use scenarios at selected offices and departments of Samar State University. Feedback from each stage was used to refine the system before deployment.

### Population and Sampling

The study was conducted at Samar State University, Catbalogan City, Samar, Philippines. The study involved a total of 152 respondents from Samar State University, the primary site for the intended implementation of the system. The target population initially consisted of 180 respondents, including 127 applicant users, 15 administrative users, and 10 IT experts. Using a 5 percent margin of error at a 95 percent confidence level, 152 respondents completed the evaluation, yielding a response rate of 84.44%.

Applicant users were selected using random sampling to ensure a representative and unbiased assessment of the system's usability and functionality. In addition, administrative users and IT experts were included purposively due to their direct involvement in recruitment processes and system evaluation, particularly in assessing system performance, security, and technical reliability.

Data were collected using a standardized evaluation questionnaire based on the ISO/IEC 25010 Software Quality Model, utilizing a five-point Likert scale to measure software quality attributes such as functionality, reliability, usability, efficiency, maintainability, and security.

### Instruments

Data were collected using a researcher-made structured questionnaire designed to evaluate the performance and usability of the developed system. The questionnaire was developed based on software quality standards established by the

International Organization for Standardization (ISO), particularly ISO 9126 and ISO/IEC 25010, which provide recognized frameworks for assessing software quality attributes.

The instrument consisted of 30 evaluation items, with five items assigned to each of the six software quality criteria: functionality, reliability, usability, efficiency, maintainability, and security. Each item measured specific aspects of system performance, user interaction, and operational effectiveness of the developed platform.

A five-point Likert scale was used to measure the respondents' level of agreement with each statement, where 1 indicated Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, and 5 Strongly Agree. This scaling method allowed the respondents to express their perceptions regarding the usability, effectiveness, and reliability of the system.

The questionnaire underwent content validation by five experts with professional backgrounds in information technology, software engineering, and educational administration. The validators included university faculty members, administration personnel, and professionals with experience in system development and information systems management. The validation process involved an expert review of questionnaire items to ensure clarity, relevance, and alignment with the objectives of the study. Suggestions provided by the validators were incorporated into the final version of the instrument before data collection.

## Data Collection

Data collection was conducted during the second semester of Academic Year 2025–2026 following the deployment of Hire Hub at the main campus of Samar State University. Before the evaluation, respondents were oriented on the purpose and key functions of the system. They were then given the opportunity to interact with the platform and perform tasks such as job posting, applicant tracking, document submission, and notification monitoring. Immediately after system use, respondents completed the structured evaluation questionnaire to ensure that their answers reflected direct system experience.

## Treatment of Data

The data were organized, tabulated, and analyzed using descriptive statistics, specifically frequency count, percentage, weighted mean, and standard deviation. Frequency count was used to determine the number of respondents in each user category, while the percentage was applied to show their distribution. The weighted mean was used to measure the respondents' evaluation of Hire Hub across the six software quality attributes, and the standard deviation was used to determine the consistency of their responses.

To interpret the computed mean scores, the following scale was used: 4.21–5.00 as Strongly Agree, 3.41–4.20 as Agree, 2.61–3.40 as Neutral, 1.81–2.60 as Disagree, and 1.00–1.80 as Strongly Disagree. This interpretation served as the basis for describing respondents' level of agreement regarding the performance and acceptability of Hire Hub.

The results of the statistical analysis were used to determine the overall effectiveness and user satisfaction of the system. The mean scores identified the strengths and areas for improvement of Hire Hub, while the standard deviation reflected the consistency and reliability of the respondents' evaluations.

## Ethical Considerations

Ethical standards were strictly adhered to in accordance with the Philippine Data Privacy Act of 2012 (RA 10173) and the National Privacy Commission guidelines. Ethical approval for the study was obtained from the University Ethics Review Board under Ethics Clearance Code 2026-0001-G. Participants were fully informed about the purpose of the study and provided informed consent before participating. Their participation was voluntary, and they were assured of the right to withdraw at any time without consequence.

Confidentiality and anonymity were maintained throughout the study by avoiding the collection of personally identifiable information. All collected data were securely stored, coded, and used solely for academic purposes, with access limited to the researchers. The study adhered to institutional ethical guidelines governing research involving human participants, ensuring that participants' rights and privacy were respected at all times.

## RESULTS and DISCUSSION

This section presents and interprets the findings from the evaluation of Hire Hub: A Smart Applicant Tracking System.

### Design and Development of the Hire Hub System

The study successfully developed Hire Hub, a centralized, role-based web application designed to automate and streamline the recruitment process. The system integrates core functions such as job posting, applicant registration, document submission, qualification screening, evaluation, automated notifications, and report generation. Role-based access control

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ensures secure access for HR personnel, selection committee members, and system administrators, while applicants interact with the system through a secured interface that promotes data privacy and accountability.

By automating recruitment workflows, Hire Hub reduces manual processing, minimizes errors, improves data consistency, and enhances transparency in applicant evaluation. Centralizing applicant records and evaluation processes eliminates fragmented documentation and enables faster, more informed decision-making. These outcomes are consistent with prior studies showing that digital recruitment platforms improve recruitment efficiency, reduce administrative burden, and strengthen decision support in hiring processes (Al Mamun & Hasan, 2023; Almeida & Monteiro, 2022).

### Evaluation of the Developed System

The Hire Hub system was evaluated using the ISO/IEC 25010 Software Quality Model covering functionality, reliability, usability, efficiency, maintainability, and security. With 152 respondents and an 84.44% response rate, the system received Strongly Agree ratings across all attributes. High mean scores and low standard deviations indicate consistent performance, dependable processing, user-friendly design, efficient task execution, adaptability, and secure access, validating the system's suitability for institutional deployment.

**Functionality.** The functionality of the Hire Hub system was rated as Strongly Agree across all user groups, indicating that the system effectively supports key recruitment functions. The system demonstrated strong performance in managing job postings, processing applications, and ensuring accurate outputs. With an overall mean score of 4.63 for applicant and administrative users and 4.72 for IT experts, the results confirm that Hire Hub meets its functional requirements efficiently. Low standard deviations suggest consistent user evaluations, highlighting the system's alignment with the needs of HR personnel, applicants, and evaluators.

Table 1. *Functionality of the Developed Smart Applicant Tracking System*

Indicators	Applicant Users (M)	SD	Admin Users (M)	SD	IT Experts (M)	SD
1. The system performed its intended tasks accurately.	4.73	0.51	4.67	0.49	4.8	0.42
2. The features of the system worked as expected.	4.58	0.64	4.53	0.74	4.8	0.42
3. The system provided complete and relevant functions for its purpose.	4.63	0.64	4.67	0.49	4.8	0.42
4. The workflow and processes were logically structured.	4.57	0.69	4.6	0.63	4.6	0.52
5. The system generated correct outputs based on user inputs.	4.62	0.64	4.67	0.49	4.6	0.52
<b>Mean/SD</b>	<b>4.63</b>	<b>0.06</b>	<b>4.63</b>	<b>0.06</b>	<b>4.72</b>	<b>0.11</b>

Note: M = Mean; SD = Standard Deviation. Scale: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Neutral; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree.

The high functionality rating suggests that Hire Hub effectively supports the operational needs of the recruitment process. By integrating job posting, application processing, and real-time tracking into a centralized platform, the system minimizes manual work and reduces delays commonly associated with traditional recruitment methods. This finding is consistent with evidence that ATS platforms improve workflow coordination, information handling, and recruitment decision support when core hiring activities are integrated into a single digital environment (Al Mamun & Hasan, 2023; Nikolaou, 2021).

**Reliability.** The reliability of the Hire Hub system was rated as Strongly Agree by all user groups, showing that it operates consistently and maintains stable performance during use. Mean scores of 4.56 for applicant users, 4.48 for administrative users, and 4.72 for IT experts confirm dependable system performance in handling recruitment activities. The low standard deviations also indicate consistent user evaluations.

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Table 2. Reliability of the Developed Smart Applicant Tracking System

Indicators	Applicant Users (M)	SD	Admin Users (M)	SD	IT Experts (M)	SD
1. The system operated consistently without unexpected failures.	4.52	0.63	4.4	0.74	4.6	0.52
2. System functions remained stable during testing.	4.54	0.68	4.47	0.64	4.6	0.52
3. The system loaded pages and data correctly at all times.	4.57	0.62	4.47	0.52	4.8	0.42
4. Errors, if any, did not disrupt the overall performance.	4.55	0.71	4.6	0.51	4.8	0.42
5. The system maintained accuracy even after repeated use.	4.62	0.62	4.47	0.52	4.8	0.42
<b>Mean/SD</b>	<b>4.56</b>	<b>0.04</b>	<b>4.48</b>	<b>0.07</b>	<b>4.72</b>	<b>0.11</b>

Note: M = Mean; SD = Standard Deviation. Scale: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Neutral; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree.

The high reliability rating suggests that Hire Hub can support recruitment activities with stable performance and minimal disruption. Its ability to maintain continuous operation and accurate outputs helps reduce processing errors and strengthens user confidence in the system. This result is consistent with digital HR system literature emphasizing centralized data management, process integration, and stable system architecture as foundations of dependable HR operations (Almeida & Monteiro, 2022; Bondarouk et al., 2021).

**Usability.** The usability of the Hire Hub system was rated as Strongly Agree by all user groups, indicating that it is easy to learn and operate. Mean scores of 4.67 for applicant users, 4.59 for administrative users, and 4.80 for IT experts confirm that the system is user-friendly, easy to navigate, and requires minimal assistance. The low standard deviations also indicate consistent user evaluations.

Table 3. Usability of the Developed Smart Applicant Tracking System

Indicators	Applicant Users (M)	SD	Admin Users (M)	SD	IT Experts (M)	SD
1. The system was easy to learn and understand.	4.76	0.53	4.67	0.49	5	0
2. Navigation across sections was simple and intuitive.	4.58	0.61	4.67	0.49	4.8	0.42
3. Instructions and labels were clear and helpful.	4.62	0.63	4.47	0.83	4.8	0.42
4. The user interface allowed tasks to be completed efficiently.	4.69	0.62	4.53	0.52	4.8	0.42
5. Users could operate the system with minimal assistance.	4.69	0.6	4.6	0.51	4.6	0.52
<b>Mean/SD</b>	<b>4.67</b>	<b>0.07</b>	<b>4.59</b>	<b>0.09</b>	<b>4.80</b>	<b>0.14</b>

Note: M = Mean; SD = Standard Deviation. Scale: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Neutral; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree.

The high usability rating suggests that Hire Hub allows users to perform recruitment tasks efficiently with minimal assistance. Its clear interface and ease of use help reduce confusion, save time, and improve the overall user experience. This result supports earlier work showing that recruitment technologies are more readily adopted when their interfaces are intuitive and when they reduce user effort across application and screening tasks (Al Mamun & Hasan, 2023; Nikolaou, 2021).

**Efficiency.** The efficiency of the Hire Hub system was rated as Strongly Agree by all user groups, indicating that it delivers fast responses and supports the timely completion of recruitment tasks. Mean scores of 4.60 for applicant users, 4.53 for administrative users, and 4.52 for IT experts confirm that the system performs quickly, processes tasks smoothly, and manages recruitment data effectively. The low standard deviations also show consistent user evaluations.

Table 4. Efficiency of the Developed Smart Applicant Tracking System

Indicators	Applicant Users (M)	SD	Admin Users (M)	SD	IT Experts (M)	SD
1. The system responded quickly to commands.	4.63	0.6	4.6	0.51	4.4	0.52
2. System processes are loaded within a reasonable time.	4.59	0.66	4.6	0.63	4.6	0.52
3. The system supported smooth performance with minimal delays.	4.57	0.62	4.33	0.62	4.6	0.52
4. The system managed data efficiently during operations.	4.6	0.65	4.47	0.64	4.4	0.52
5. The system helped users complete recruitment-related tasks faster.	4.62	0.62	4.67	0.49	4.6	0.52
<b>Mean/SD</b>	<b>4.60</b>	<b>0.02</b>	<b>4.53</b>	<b>0.14</b>	<b>4.52</b>	<b>0.11</b>

Note: M = Mean; SD = Standard Deviation. Scale: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Neutral; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree.

The high efficiency rating suggests that Hire Hub helps users complete recruitment tasks more quickly and productively. Its ability to process information promptly and support smooth workflow operations reduces delays, saves time, and improves overall performance. These outcomes support prior studies indicating that digital recruitment platforms reduce administrative burden and improve process speed by automating repetitive tasks and improving information flow (Almeida & Monteiro, 2022; Stone et al., 2022).

**Maintainability.** The maintainability of the Hire Hub system was rated as Strongly Agree by all user groups, indicating that it can be updated and enhanced while maintaining stable performance. Mean scores of 4.65 for applicant users, 4.52 for administrative users, and 4.75 for IT experts confirm that the system is well-organized, adaptable, and capable of supporting future improvements. The low standard deviations also indicate consistent user evaluations.

Table 5. Maintainability of the Developed Smart Applicant Tracking System

Indicators	Applicant Users (M)	SD	Admin Users (M)	SD	IT Experts (M)	SD
1. The system design appears well-organized and adaptable.	4.66	0.61	4.53	0.52	4.8	0.42
2. The system continued to work properly after issues were addressed.	4.65	0.64	4.6	0.51	4.8	0.42
3. The system appears flexible enough to support future improvements.	4.65	0.63	4.53	0.64	4.8	0.42
4. The design allowed new features to be added when needed.	4.61	0.64	4.53	0.64	4.8	0.42
5. The system maintained stable performance after updates or adjustments.	4.68	0.6	4.4	0.63	4.6	0.52
<b>Mean/SD</b>	<b>4.65</b>	<b>0.02</b>	<b>4.52</b>	<b>0.07</b>	<b>4.75</b>	<b>0.09</b>

Note: M = Mean; SD = Standard Deviation. Scale: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Neutral; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree.

The high maintainability rating suggests that Hire Hub can support future updates and improvements without affecting its overall performance. Its organized structure and adaptability make it easier to modify, manage, and sustain over time. This is consistent with literature noting that well-structured digital HR systems and analytics-enabled platforms benefit from modularity, adaptability, and continuous enhancement as organizational requirements evolve (Bondarouk et al., 2021; Margherita, 2022).

**Security.** The security of the Hire Hub system was rated as Strongly Agree by all user groups, indicating that it effectively protects user data, controls access, and maintains confidentiality. Mean scores of 4.69 for applicant users, 4.52 for



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administrative users, and 4.76 for IT experts confirm that the system safeguards sensitive information, restricts access to authorized users, and uses secure login mechanisms. The low standard deviations also show consistent user evaluations.

Table 6. Security of the Developed Smart Applicant Tracking System

Indicators	Applicant Users (M)	SD	Admin Users (M)	SD	IT Experts (M)	SD
1. The system protected user information appropriately.	4.69	0.58	4.67	0.49	4.8	0.42
2. Access to the system was restricted to authorized users only.	4.68	0.59	4.4	0.74	4.8	0.42
3. The login features and authentication were secure.	4.68	0.59	4.53	0.52	4.6	0.52
4. Sensitive data were handled with confidentiality.	4.67	0.59	4.47	0.64	4.8	0.42
5. Visible security measures increased user trust in the system.	4.73	0.57	4.53	0.52	4.8	0.42
<b>Mean/SD</b>	<b>4.69</b>	<b>0.02</b>	<b>4.52</b>	<b>0.10</b>	<b>4.76</b>	<b>0.09</b>

Note: M = Mean; SD = Standard Deviation. Scale: 4.21–5.00 = Strongly Agree; 3.41–4.20 = Agree; 2.61–3.40 = Neutral; 1.81–2.60 = Disagree; 1.00–1.80 = Strongly Disagree.

The high security rating suggests that Hire Hub can safeguard confidential data and ensure that only authorized users can access important system functions and records. Its secure login mechanisms and access controls help reduce privacy risks, strengthen user trust, and support safe recruitment management. This finding reflects the broader literature stressing that trustworthy digital recruitment systems require strong governance, controlled data access, and safeguards for sensitive applicant information (Bondarouk et al., 2021; Köchling et al., 2022; Stone et al., 2022).

## Conclusions

The development of Hire Hub: A Smart Applicant Tracking System successfully automated and streamlined the recruitment process at Samar State University. The system improved efficiency, transparency, accuracy, and data organization by centralizing recruitment workflows into a secure web-based platform. The integration of modern web technologies, including PHP, Laravel, JavaScript, and MySQL, provided a stable, scalable, and efficient system architecture suitable for institutional deployment.

Evaluation results based on the ISO/IEC 25010 software quality standards demonstrated that Hire Hub achieved high performance in terms of functionality, reliability, usability, efficiency, maintainability, and security. The consistently high ratings from applicant users, administrative users, and IT experts confirm the system’s usability, reliability, and suitability for institutional recruitment management.

The findings indicate that Hire Hub contributes to ICT system development and digital innovation in higher education institutions by providing a centralized and automated recruitment management platform. The system supports efficient data management, improves transparency in applicant evaluation, and strengthens the secure handling of recruitment information, thereby supporting the digital transformation of university human resource processes.

## Recommendations

The evaluation results provide strong empirical support for the adoption of Hire Hub as the university’s primary recruitment management platform. Given its high performance across all software quality attributes and strong user acceptability, its implementation is recommended to enhance efficiency, transparency, and data management in recruitment processes. Effective deployment should include structured implementation planning, user orientation for HR personnel and selection committee members, clearly defined operational protocols, and continuous system monitoring to ensure long-term reliability and sustainability.

Based on the findings of the study, the following recommendations are proposed:

1. Higher education institutions may adopt Hire Hub as a digital recruitment management platform to improve transparency, efficiency, and data organization in hiring processes.
2. A pilot implementation of Hire Hub may be conducted in selected departments to further evaluate system performance in real recruitment scenarios before full institutional deployment.

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3. Advanced reporting and recruitment analytics features may be integrated to support data-driven decision-making and improve monitoring of recruitment trends and applicant performance.
4. Additional security enhancements may be implemented, including stronger encryption mechanisms and multi-factor authentication, to further protect sensitive applicant information.
5. Regular system monitoring, updates, and technical maintenance may be conducted to ensure long-term reliability, scalability, and continuous improvement.
6. Future research may explore the integration of artificial intelligence or machine learning techniques to support automated applicant screening, resume analysis, and intelligent recruitment decision support.

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