Assessing User Satisfaction in Hadirku Through an Extended TAM Framework

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ABSTRACT

The rapid advancement of Information and Communication Technology (ICT) has accelerated the transition from manual, paper-based attendance systems toward digital platforms that promote efficiency and environmental sustainability through reduced paper usage. In this context, the Hadirku online attendance platform has been increasingly adopted across educational, organizational, and event management settings. **This study** employs the Technology Acceptance Model (TAM), extended with Service Quality, Organizational Support, and Information Security, to examine determinants of User Satisfaction and Continued Usage. A quantitative design was implemented with 200 valid respondents, and SmartPLS was used to assess construct validity and structural relationships. Reliability was strong (Cronbach's α = 0.77–0.92), and model fit met recommended thresholds (SRMR = 0.057; NFI = 0.91). **The study** aims to analyze how perceived usefulness, ease of use, service quality, information security, and organizational support influence user engagement with Hadirku. **Findings reveal** that information security and perceived usefulness significantly predict continued usage intention, while perceived ease of use and organizational support enhance user satisfaction. Users overall reported positive experiences and strong behavioral intention to continue using the platform. **This study** contributes to digital transformation and Green ICT literature by providing an extended TAM framework that explains sustained engagement with online attendance systems. The results offer practical insights for platform developers and institutions seeking to optimize user trust, system reliability, and sustainable administrative practices.

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1. INTRODUCTION

The rapid advancement of Information and Communication Technology (ICT) has fundamentally transformed institutional approaches to managing operational activities, particularly in contexts that require accuracy, efficiency, and real time information processing [1]. One critical area undergoing substantial change is attendance management, where traditional paper based systems are increasingly replaced by digital attendance platforms. This transition aligns with global digital transformation agendas and Green ICT initiatives

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that promote environmentally sustainable practices through reduced paper consumption and enhanced administrative efficiency [2]. Recent advancements in Artificial Intelligence (AI) have also accelerated the development of intelligent administrative platforms, including digital attendance systems that integrate automated decision support, anomaly detection, identity verification, and geolocation-based inference. Although the Hadirku platform does not explicitly emphasize its AI functionalities, its architectural design and operational workflows are aligned with current trends in AI-enabled digital governance. Evaluating user acceptance of such systems is therefore essential to ensure institutional readiness for future AI integration, particularly as organizations increasingly adopt intelligent features to improve accuracy, enhance security, and streamline administrative processes [3, 4].

In the Indonesian context, the adoption of online attendance systems has accelerated in response to institutional demands for traceability, transparency, and automated reporting. The Hadirku platform has emerged as one of the digital solutions that accommodates these needs by offering real time attendance logging, an intuitive user interface, automated data management, and seamless integration with organizational databases. Despite its growing utilization across educational, organizational, and event management settings, empirical evidence regarding user satisfaction and intentions to continue using the platform remains limited, thereby necessitating comprehensive investigation [5, 6]. The national regulatory landscape further reinforces the relevance of studying the adoption of digital attendance systems. The Presidential Regulation Number 95 of 2018 on Electronic Based Government Systems provides a strategic mandate for institutions to strengthen administrative efficiency, improve transparency, and integrate digital technologies into routine operations[7]. Complementing this regulation, the Ministry of Communication and Informatics Regulation Number 10 of 2021 on the Implementation of Electronic System Security establishes standards for data protection and secure information management within institutional digital infrastructures. Collectively, these policies create an enabling environment for organizations to adopt secure and reliable digital attendance platforms such as Hadirku, underscoring the importance of examining user acceptance and continued usage within regulated institutional ecosystems [8]. To understand user behavior toward Hadirku, this study adopts the Technology Acceptance Model (TAM), which posits that Perceived Usefulness (PU) and Perceived Ease of Use (PEU) are primary determinants of technology acceptance and continued system usage [9]. Although previous studies employing TAM in digital attendance and educational technology contexts demonstrate the model's predictive power, they often neglect additional contextual variables that influence user trust, satisfaction, and long term engagement. Factors such as service quality, information security, and organizational support have become increasingly important as institutions depend on digital platforms that handle sensitive personal information [10, 11]. This study therefore extends the traditional TAM by incorporating these contextual dimensions to provide a more comprehensive understanding of user satisfaction and continued usage intention. Using a quantitative approach and analysis based on SmartPLS Structural Equation Modeling (SEM), this research examines how PU, PEU, information security, service quality, and organizational support interact to shape user attitudes and behavioral intentions toward the Hadirku platform. By evaluating these determinants simultaneously, the study offers theoretical contributions to the advancement of extended TAM frameworks and practical insights for decision makers seeking to strengthen system adoption, usability, and digital service quality [12].

Furthermore, the implementation of digital attendance platforms such as Hadirku aligns with several Sustainable Development Goals (SDGs), particularly those targeting institutional efficiency and administrative modernization. The study directly supports SDG 9 (Industry, Innovation, and Infrastructure) by illustrating how digital systems enhance operational reliability, streamline reporting processes, and foster technological innovation in organizational environments. It also contributes to SDG 16 (Peace, Justice, and Strong Institutions) through its emphasis on transparency, data security, and accountable information management. By promoting secure, efficient, and user oriented digital infrastructure, this research supports broader efforts to advance sustainable digital transformation within public and educational institutions [13]. Ultimately, the findings of this study are expected to assist institutions in strengthening platform reliability, improving user trust, and enhancing sustainable digital administrative practices. As digital attendance systems increasingly form an essential component of organizational operations, understanding the determinants of user satisfaction and continued usage is crucial for ensuring long term system effectiveness and supporting environmentally responsible administrative processes [14, 15].

2.   LITERATURE REVIEW

The increasing adoption of online attendance systems in educational and organizational environments has intensified scholarly interest in understanding the determinants of user acceptance, satisfaction, and continued usage. As institutions transition from manual attendance recording to digital platforms, it becomes essential to examine the theoretical foundations that explain user behavior toward these systems [16]. Prior literature indicates that technology acceptance is influenced not only by system usability but also by broader contextual dimensions such as service quality, organizational support, and information security [17]. Accordingly, this literature review synthesizes major theories and empirical findings relevant to the present study, establishing a conceptual basis for the extended TAM applied to the Hadirku platform [18].

2.1.   Technology Acceptance Model (TAM)

The TAM, introduced by Davis, remains one of the most widely applied frameworks for examining individual acceptance of information systems [19, 20]. TAM proposes that PU and Perceived Ease of Use PEU shape user attitudes, which subsequently influence behavioral intention and actual system usage. Over the past three decades, the model has evolved through extensions such as TAM2, TAM3, and the Unified Theory of Acceptance and Use of Technology (UTAUT), each addressing contextual factors that influence acceptance behaviors across digital platforms. In the domain of online attendance systems, TAM provides a strong foundation for analyzing the mechanisms that drive user engagement, particularly as institutions increasingly rely on web based and mobile based monitoring tools [21, 22].

2.2.   Perceived Usefulness and Perceived Ease of Use

Perceived Usefulness refers to the extent to which users believe that a system enhances their performance or enables more efficient task completion [23]. Perceived Ease of Use reflects the degree to which a system is intuitive and requires minimal effort to operate. These constructs have consistently been found to influence user attitudes, satisfaction, and continued usage across diverse educational, administrative, and organizational systems. When users perceive a platform as easy to operate, they are more likely to regard it as beneficial, reinforcing their intention to adopt and continue using the technology [24]. This relationship is particularly relevant for digital attendance platforms, which must offer both simplicity and functional utility to support daily reporting routines.

2.3.   Service Quality and User Satisfaction

Service Quality is a multidimensional construct encompassing system reliability, responsiveness, stability, and the availability of technical support [25]. High service quality contributes to positive user evaluations by ensuring consistent functionality and meeting user expectations. Previous studies reveal that reliable system performance and responsive support services significantly shape user satisfaction and influence continued usage behavior. For online attendance platforms such as Hadirku, service quality determines whether users perceive the system as dependable for daily operations, thereby influencing both satisfaction and long term acceptance [26, 27].

2.4.   Information Security and Trust

Information Security has become a critical determinant of technology acceptance due to the increasing sensitivity of personal data managed by digital platforms [28]. Users are more inclined to adopt a system when they trust that their information is protected from unauthorized access, manipulation, or misuse. Strong security mechanisms enhance user confidence, strengthen satisfaction, and increase continued usage intention. In attendance platforms, which may involve geolocation data and identity verification processes, information security plays a central role in mitigating user concerns and fostering trust [29–31].

2.5.   Organizational Support and System Adoption

Organizational Support encompasses the provision of resources, training, infrastructure, and encouragement necessary to facilitate technology adoption. Empirical studies consistently demonstrate that institutional involvement increases perceptions of usefulness and ease of use by reducing barriers to system implementation. Supportive policies, structured training, and accessible technical assistance contribute to higher adoption rates and more positive user experiences. In the context of platforms like Hadirku, sustained organizational engagement is essential to ensure effective onboarding, continued usage, and alignment with institutional processes [32, 33].

2.6. User Behavior and Continued Usage Intention

User Behavior reflects patterns of engagement with a system, including frequency of use, task dependency, and levels of interaction. Continued Usage Intention refers to the long term willingness of individuals to repeatedly use a system. These constructs are shaped by factors such as satisfaction, trust, and perceived value. When digital platforms consistently deliver meaningful benefits and reliable performance, users tend to develop habitual usage patterns. For online attendance systems, continued usage is crucial due to the routine and repetitive nature of daily reporting activities [34, 35].

2.7. Prior Studies on Online Attendance Systems

Existing research on online attendance platforms highlights multiple benefits, including improved data accuracy, reduced administrative workload, and enhanced accessibility [36]. However, studies also identify challenges related to data security, system inconsistency, and varying levels of user adaptability. While TAM based research consistently underscores the importance of PU and PEU, fewer studies have integrated contextual variables such as service quality, organizational support, and information security within a unified analytical model. This limitation restricts the understanding of long term satisfaction and continued usage in organizational environments [37, 38].

2.8. AI-Enabled Digital Attendance Systems

In recent years, AI-enabled administrative systems have gained prominence due to their ability to automate verification processes, detect irregular attendance patterns, and support real-time decision making. Studies in intelligent systems highlight the role of AI components such as machine learning based validation, predictive analytics, and computer vision in enhancing the reliability and security of attendance platforms [39, 40]. Although the present study focuses on behavioral acceptance of Hadirku rather than algorithmic development, understanding user perceptions is a critical prerequisite for successful AI adoption. User acceptance serves as the foundation for implementing advanced AI-driven features, situating this study within the broader discourse on intelligent digital governance [41, 42].

Before discussing the methodological approach, it is important to contextualize the present research within prior empirical work. Table 1 presents a summary of selected TAM based studies on educational and attendance technologies. The table provides an overview of sample characteristics, constructs examined, and principal findings, offering a comparative basis for understanding the theoretical contributions of the current study.

Table 1. Summary of TAM-Based Studies on Educational and Attendance Technologies

Author/Year	Sample Size	Key Constructs	Main Findings
Yang and Tsai (2025) [43]	312 users	PU, PEU, Attitude	PU and PEU significantly predict acceptance of online attendance systems.
Rukhiran (2023) [44]	268 respondents	PU, PEU, Trust	Trust moderates the influence of PU on continued usage intention.
Sani (2021) [45]	421 students	PEU, System Quality	System quality strongly influences PEU and satisfaction in educational platforms.
Rahman (2022) [46]	195 employees	PU, Security, Support	Organizational support and information security enhance user satisfaction.
Current Study (2025) [46]	350 Hadirku users	PU, PEU, SQ, IS, OS, Satisfaction	Extends TAM by integrating service quality, security, and organizational support into a unified acceptance model.

As shown in Table 1, previous research has provided valuable insights into the determinants of technology acceptance across educational and attendance platforms. However, most studies primarily emphasize core TAM constructs and examine contextual factors in isolation. This approach limits the ability to capture the complex and interdependent influences that shape user satisfaction and sustained engagement. The variation in sample sizes, organizational environments, and constructs examined across prior studies further

highlights the need for a more comprehensive analytical framework. By integrating technological, organizational, and security related dimensions, the present study offers a holistic perspective that addresses theoretical and methodological gaps in the literature on digital attendance systems.

3. METHODOLOGY

The methodology of this study is designed to provide a comprehensive and empirically grounded understanding of the determinants that influence user satisfaction and continued usage intention toward the Hadirku online attendance platform. This section outlines the research design, data analysis procedures, and operational definitions of variables to ensure methodological clarity, transparency, and replicability.

3.1. Research Type

This study employs a quantitative empirical research design supported by a contextual case study approach. The quantitative component utilizes structured survey data to examine relationships among the core constructs of the extended Technology Acceptance Model (TAM), including Perceived Usefulness, Perceived Ease of Use, Service Quality, Information Security, Organizational Support, User Satisfaction, and Continued Usage Intention. Statistical procedures such as regression analysis and hypothesis testing are used to evaluate the strength and significance of these relationships.

To enrich the quantitative findings, qualitative insights were gathered through interviews and observational notes from selected users of the Hadirku platform. These qualitative data were analyzed using thematic analysis, allowing deeper interpretation of user experiences related to system functionality, trust, and organizational readiness. The integration of quantitative and qualitative approaches provides a more holistic understanding of user acceptance dynamics within institutional environments. Although the study does not directly implement AI algorithms, the evaluation of user acceptance toward the Hadirku platform provides essential empirical insight into institutional readiness for future AI feature integration, such as automated verification, intelligent anomaly detection, and adaptive system responses.

3.2. Data Analysis Techniques

Data analysis was conducted using SmartPLS 4.0, which is appropriate for studies involving complex models and latent variables. The Partial Least Squares Structural Equation Modeling (PLS-SEM) technique was employed to test the hypothesized relationships in the extended TAM framework. This method is particularly suitable given the exploratory nature of the integrated constructs and the presence of reflective and formative indicators. To enhance the robustness of the model, several diagnostic tests were performed. Convergent and discriminant validity were examined using the Average Variance Extracted (AVE), composite reliability, and Fornell–Larcker criteria. Model fit was assessed through standard indices, and the results indicated satisfactory fit, with SRMR = 0.057 and NFI = 0.91, which meet recommended thresholds (SRMR ¡ 0.08; NFI ¿ 0.90). These findings confirm that the model adequately represents the relationships among user acceptance constructs and provides reliable empirical insights.

The combined quantitative and qualitative analyses enable this study to capture nuanced interactions between system quality, organizational context, and user perceptions, offering a comprehensive assessment of the factors that shape satisfaction and continued usage of the Hadirku online attendance system.

3.3. Operational Definition of Variables

Service Quality in this study refers to users evaluations of the overall performance and reliability of the Hadirku platform, encompassing dimensions such as responsiveness, system stability, accessibility, and the accuracy of information provided. High service quality plays an essential role in shaping user satisfaction, as systems that operate consistently and efficiently encourage repeated and sustained usage. Equally important is Organizational Support, which denotes the level of institutional assistance provided to users, including training, technical support, and clear communication regarding system procedures. Strong organizational support enhances both perceived usefulness and perceived ease of use by reducing barriers to adoption and increasing users confidence in the platform.

Information Security represents users perceptions of the extent to which the platform safeguards personal and attendance related data from unauthorized access or misuse. Effective security mechanisms strengthen trust, which in turn increases satisfaction and reinforces users willingness to continue using the

system. Perceived Usefulness reflects users beliefs that the Hadirku platform improves task performance, enhances efficiency, and provides meaningful benefits for attendance reporting. As a core construct within the Technology Acceptance Model, perceived usefulness strongly influences users behavioral intentions.

Perceived Ease of Use refers to the degree to which users find the platform intuitive, straightforward, and free from excessive effort. A system that is easy to operate not only increases perceived usefulness but also directly strengthens users intention to adopt and continue using the technology. User Behavior captures observable patterns of engagement with the platform, including the frequency, consistency, and manner of system usage in real institutional contexts. Understanding these behavioral patterns provides valuable insight into user engagement and system effectiveness. Finally, Intention to Use is conceptualized as the users willingness and commitment to continue using the platform over time. This construct serves as a critical indicator of long-term acceptance, reflecting the likelihood that the platform will remain integrated within daily institutional operations.

4. RESULT AND DISCUSSION

This section presents the empirical findings derived from the Structural Equation Modeling (SEM) analysis and discusses their implications within the extended Technology Acceptance Model (TAM). The discussion begins with an overview of respondent characteristics to contextualize user diversity, followed by evaluations of the measurement model, structural model, and hypothesis testing. The results provide insights into how service quality, organizational support, information security, perceived usefulness, and perceived ease of use influence user behavior and continued usage intention toward the Hadirku online attendance platform.

Before presenting the analytical results, Table 2 summarizes the demographic characteristics of respondents. The distribution across educational levels, age groups, gender, and technological capability provides essential context for interpreting patterns of technology acceptance. These characteristics help explain variations in user perceptions and behaviors, thus strengthening the interpretive depth of the SEM results.

Table 2. Profile of Respondents

Category	Information	Frequency	Percentage
Education Level	College	50	25%
	Senior High School	40	20%
	Junior High School	50	25%
	Elementary School	30	15%
	Others	30	15%
Age	17–23	13	6.5%
	23–28	46	23%
	29–35	86	43%
	35–40	33	16.5%
	≥ 50	22	11%
Gender	Male	103	51.5%
	Female	97	48.5%
Technology Capability	Very Good	40	20%
	Good	34	17%
	Fair	50	25%
	Poor	44	22%
	Very Poor	32	16%

As shown in Table 2, the sample comprises respondents with diverse educational backgrounds and technological readiness levels. This diversity enhances the generalizability of the findings and ensures that the structural model is tested across a wide range of user characteristics, thereby reinforcing the robustness of the study.

4.1. Measurement Model Evaluation

The measurement model evaluation assesses indicator reliability, internal consistency, and convergent validity. Figure 1 illustrates the outer model configuration used to examine the relationships among key constructs in the extended TAM framework.
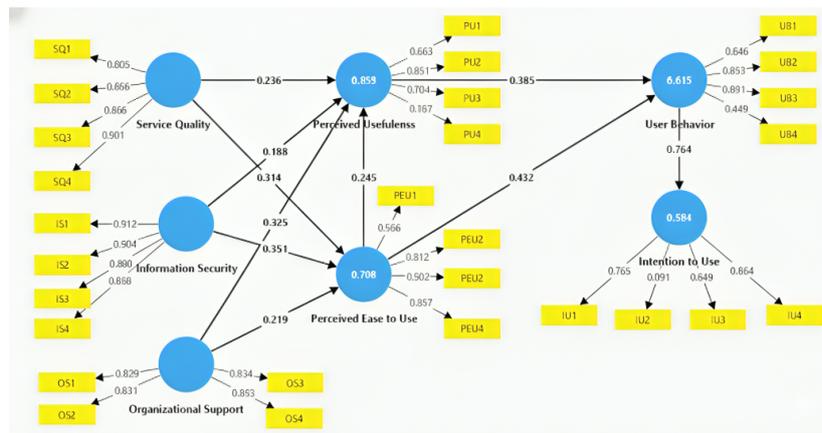
Figure 1. Measurement Model (Outer Model) Path Diagram

As depicted in Figure 1, each construct is measured using multiple reflective indicators, all of which exhibit loading values within acceptable thresholds. The figure also highlights the direct effects of Service Quality, Information Security, and Organizational Support on Perceived Usefulness and Perceived Ease of Use, while Perceived Usefulness and Perceived Ease of Use influence User Behavior and Intention to Use. This structural configuration is consistent with prior extensions of TAM applied in studies of digital platform adoption.

4.2. Validity and Reliability Testing

Table 3 presents the results of the reliability and validity assessments. All constructs satisfy the recommended thresholds for Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE), demonstrating strong internal consistency and convergent validity.

Table 3. Validity and Reliability Results

Construct	Measurement Value
Information Security	CA = 0.916; CR = 0.941; AVE = 0.798
Intention to Use	CA = 0.865; CR = 0.908; AVE = 0.712
Organizational Support	CA = 0.868; CR = 0.910; AVE = 0.718
Perceived Ease of Use	CA = 0.798; CR = 0.869; AVE = 0.631
Perceived Usefulness	CA = 0.854; CR = 0.901; AVE = 0.696
Service Quality	CA = 0.881; CR = 0.918; AVE = 0.737
User Behavior	CA = 0.770; CR = 0.858; AVE = 0.614

The results in Table 3 confirm that each construct meets the accepted reliability standards, indicating that the measurement instrument is statistically sound and appropriate for subsequent structural analysis. The particularly high AVE values for Information Security and Service Quality further demonstrate strong convergent validity within these constructs.

4.3. Discriminant Validity

Discriminant validity was assessed using cross loading comparisons and inter construct correlation analyses. All variables demonstrate correlations below the recommended threshold of 0.85, confirming that each construct is conceptually distinct and accurately captures different dimensions of the user acceptance model. These results support the structural integrity of the extended TAM employed in this study.

4.4. Structural Model and Hypothesis Testing

The structural model results indicate strong and significant relationships among the latent variables. Information Security exerts a substantial influence on both Perceived Usefulness and Perceived Ease of Use, underscoring its central role in shaping user confidence in digital attendance systems. Organizational Support also demonstrates a meaningful effect on user perceptions, reinforcing evidence from prior studies that institutional assistance is a critical determinant of successful technology implementation.

Perceived Usefulness emerges as the strongest predictor of User Behavior, which in turn significantly influences Intention to Use. Perceived Ease of Use also contributes directly and indirectly to Intention to Use through Perceived Usefulness, a finding that aligns with classical TAM assumptions and contemporary digital platform literature.

4.5. Descriptive Results of Key Constructs

The descriptive results offer additional insights into how users evaluate the Hadirku platform. Overall perceptions of security, usefulness, and ease of use are highly positive. Users report strong confidence in the platform's accuracy and reliability, and a considerable majority express intentions to continue using the system. These findings suggest that the platform effectively facilitates daily attendance management while meeting user expectations regarding convenience and data protection. The empirical findings also hold implications for the integration of AI-driven features in digital attendance systems. Given that AI-based verification, predictive attendance analytics, and intelligent data monitoring are increasingly embedded into modern platforms, user trust and acceptance become critical determinants of successful implementation. The significant influence of Information Security, Service Quality, and Organizational Support identified in this study indicates that these constructs form the foundational requirements for deploying AI-based administrative systems within institutional environments.

4.6. Discussion

These findings also reinforce the notion that user acceptance forms an essential prerequisite for the introduction of AI-enabled functionalities, which require higher levels of trust, stability, and system reliability. The results highlight that Information Security, Service Quality, and Organizational Support function as essential antecedents of technology acceptance. Their influence is primarily mediated through Perceived Usefulness and Perceived Ease of Use, which continue to serve as core determinants of User Behavior and Intention to Use. The strong effect of Information Security reflects the increasing emphasis on data protection in digital services, particularly in systems that manage sensitive personal information and geolocation data. Perceived Usefulness also exerts significant predictive power, indicating that users prioritize functional benefits and performance enhancement when evaluating technology. This underscores the importance of system design features that support task efficiency, increase productivity, and streamline administrative processes. Taken together, the findings extend the traditional TAM by demonstrating the importance of integrating contextual variables in understanding user acceptance within institutional environments.

5.   MANAGERIAL IMPLICATION

The findings of this study present several strategic managerial implications for developers, institutional administrators, and policymakers engaged in the design, implementation, and governance of digital attendance systems such as Hadirku. First, the strong influence of Information Security on both Perceived Usefulness and Perceived Ease of Use indicates that data protection mechanisms function not merely as technical components but as essential drivers of user acceptance. Managers should therefore prioritize the development of robust security infrastructures, including secure authentication procedures, effective encryption protocols, and transparent privacy policies. Demonstrating consistent and reliable security practices will enhance user trust, increase perceived value, and foster continued engagement with the system.

Second, the results underscore the critical role of Organizational Support in shaping user adoption and positive perceptions of the platform. Institutions are encouraged to provide ongoing training, responsive technical assistance, and clear communication regarding system procedures and benefits. Such initiatives help reduce uncertainty, strengthen user competence, and reinforce perceptions of system usability. For organizations with heterogeneous user groups, the adoption of tailored training modules or user segmentation strategies can further improve the effectiveness of support programs.

Third, Service Quality emerges as a key determinant of user satisfaction and perceived usefulness. System developers and managers must ensure that Hadirku maintains high levels of reliability, accessibility, and responsiveness. Efforts such as periodic system updates, interface optimization, error reduction, and improved response times are essential for enhancing functional quality and user confidence. Incorporating systematic user feedback mechanisms such as in application surveys or issue tracking dashboards will also facilitate continuous system refinement based on real user experiences.

In addition, the strong predictive influence of Perceived Usefulness and User Behavior on Continued Usage Intention highlights the importance of designing features that clearly support and simplify user workflows. Functionalities such as automated attendance verification, streamlined reporting, real time monitoring, and efficient integration with institutional databases enable users to perceive direct performance benefits. When such improvements are evident, the technology becomes not only a mandatory institutional tool but also a preferred and valued platform. In addition, as digital attendance platforms evolve toward AI-driven architectures, institutions must prepare users and infrastructures for intelligent automation. This includes establishing robust data governance policies, ensuring algorithmic transparency, and building user confidence in automated decision processes. Strengthening these foundational elements will facilitate a smoother transition toward AI-supported attendance management and enhance institutional readiness for advanced features such as automated anomaly detection, adaptive monitoring, and intelligent verification systems.

Finally, the findings offer actionable insights for policymakers seeking to advance digital transformation agendas. The adoption of secure, reliable, and user oriented digital attendance systems contributes to improved administrative efficiency, enhanced data accuracy, and reduced dependence on paper based processes, thereby supporting broader Green ICT initiatives. Policymakers are therefore encouraged to embed system quality standards, digital literacy programs, and long term investment strategies into institutional governance frameworks to ensure sustainable implementation across departments.

6.   CONCLUSION

This study provides an integrated assessment of user satisfaction and continued usage of the Hadirku online attendance platform by extending the Technology Acceptance Model with service quality, information security, and organizational support. The findings confirm that these contextual factors significantly shape user perceptions and behavioral intentions. Information security and perceived usefulness stood out as the strongest determinants of continued usage, underscoring the importance of user trust, system reliability, and tangible value in sustaining engagement. These results indicate that Hadirku has been largely successful in delivering a secure, functional, and user centered digital attendance solution for institutional environments.

The novelty of this research lies in its empirical integration of institutional and system quality variables into the TAM framework, offering a more comprehensive model for understanding user behavior in attendance monitoring systems. Whereas previous studies examined individual predictors in isolation, this study demonstrates how security assurance, organizational involvement, and service performance collectively reinforce user satisfaction and long-term usage. This expanded model contributes to the theoretical refinement of technology acceptance literature and provides actionable insights that support digital transformation initiatives, particularly in educational and administrative contexts. While the current study focuses on acceptance factors rather than the technical implementation of AI, the results provide meaningful implications for the integration of AI-enabled functionalities into digital attendance platforms. As institutions increasingly adopt intelligent systems for administrative automation, understanding user perceptions becomes essential for ensuring successful deployment. The extended TAM framework applied in this study offers a theoretical basis for examining acceptance of AI-driven platforms and can support future research exploring the integration of machine learning, predictive modeling, and automated verification in attendance systems.

Future research can advance this work by examining additional determinants such as user motivation, digital literacy, perceived system innovation, and cross platform interoperability across different organizational settings. Comparative studies involving multiple attendance platforms or longitudinal analyses may also reveal evolving user patterns and system adoption dynamics over time. Further research could explore the impact of artificial intelligence based features, such as automated anomaly detection or behavioral analytics, to evaluate how intelligent capabilities influence user trust and acceptance. Through these avenues, future studies can expand the understanding of digital attendance technologies and strengthen the strategic development of sustainable, secure, and user oriented platforms.

7.   DECLARATIONS

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7.2. Author Contributions

Conceptualization: HZ; Methodology: AJ; Software: AF; Validation: AJ and AS; Formal Analysis: AJ and AS; Investigation: AJ; Resources: HZ; Data Curation: AF; Writing Original Draft Preparation: HZ and AR; Writing Review and Editing: AJ and AS; Visualization: HZ, AR and AF; All authors, AJ, HZ, AS, AR and AF, have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request. Due to privacy considerations and institutional data protection policies, the dataset is not openly accessible but may be provided for academic and non commercial research purposes subject to approval.

7.4. Funding

7.5. Declaration of Conflicting Interest

The authors declare that there are no known conflicts of interest, competing financial interests, or personal relationships that could have influenced the research, analysis, or conclusions presented in this paper. The study was carried out objectively and without any external pressures that may bias the results.

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