511

System Usability Scale (SUS) Model in Evaluating Internal Quality Audit Systems for Accreditation Process Optimization

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Article Info

ABSTRACT

The usability of internal quality audit systems plays a crucial role in ensuring the effectiveness of academic governance in higher education institutions. This study evaluates the usability of an internal quality audit system using the System Usability Scale (SUS) framework. The findings reveal a mean SUS score of 72.4, indicating good usability but highlighting key areas for improvement, particularly in navigation, interoperability, and data management workflows. A comparative analysis with previous research shows that while the system performs better than some older academic management systems, it still lags behind general academic information systems. Based on user feedback, recommendations for interface redesign, system integration, and workflow optimization are proposed to enhance overall usability. Future research should focus on user-centered design improvements, AI-driven automation, and broader system interoperability to further refine the effectiveness of quality audit processes in higher education institutions.

I. INTRODUCTION

In the era of digitalization and transformation of higher education, internal quality audit systems play a critical role in ensuring the effectiveness of academic governance and compliance with accreditation standards. This article evaluates a web-based internal quality audit system using the System Usability Scale (SUS) to identify usability challenges and recommendations for improvement. The system is web-based, designed to support audit documentation, audit findings tracking, and management of improvement recommendations. The primary users of the system include internal auditors, academic management, and administrative staff responsible for conducting internal quality audits. In the era of globalization and digital transformation, higher education institutions face significant challenges in ensuring academic quality and institutional governance that meet national and international accreditation standards [1]. Accreditation is an evaluation process conducted by authorized bodies to assess whether an institution or academic program complies with established quality standards. This process not only serves as a benchmark for educational

quality but also acts as a prerequisite for obtaining recognition from governments, industries, and society [2]. To support accreditation, higher education institutions implement internal quality audit systems, which function as evaluation tools for policies, processes, and the implementation of quality management systems. These systems aim to help universities identify strengths, weaknesses, and areas for improvement to enhance academic and institutional management quality [3].

Although internal quality audit systems have been adopted in many universities, their implementation still faces several challenges that hinder their effectiveness. Key challenges include limited accessibility, non-intuitive interfaces, lack of interoperability with other academic systems, and complexity in usage, particularly for administrative staff who are not well-versed in digital technology [4]. These barriers lead to suboptimal audit processes, reduced data accuracy, and delays in evidence-based decision-making for institutional quality improvement [5]. Therefore, a robust system evaluation method is needed to measure the usability and effectiveness of internal quality audit systems to ensure they are optimally

utilized by internal auditors, academic managers, and administrative staff.

One of the most widely used evaluation methods for measuring system usability is the System Usability Scale (SUS). SUS was first introduced by John Brooke in 1996 as a simple yet efficient instrument for assessing system usability based on user experience [6]. This method consists of ten Likert-scale statements that evaluate usability aspects such as ease of use, efficiency, effectiveness, and user satisfaction with the tested system [7]. SUS has become a standard in usability research and is extensively used across various domains, including evaluations of higher education information systems, learning management systems (LMS), and academic administration platforms [8].

Several studies have demonstrated that SUS is a reliable method for evaluating the usability of academic and administrative information systems in higher education. For instance, research conducted by [9] showed that SUS effectively measures user experience in using digital academic information systems, helping institutions identify system design weaknesses and provide improvement recommendations. Another study by [10] highlighted that applying SUS to internal audit system evaluations could reveal usability barriers that conventional survey methods fail to detect. However, despite its extensive use in educational technology research, studies focusing specifically on the usability evaluation of internal quality audit systems in the context of higher education accreditation remain limited.

Given these challenges, this study aims to evaluate the usability of internal quality audit systems using the System Usability Scale (SUS) to identify strengths, weaknesses, and potential improvements that can enhance accreditation processes in higher education. This evaluation is expected to provide a comprehensive usability assessment and offer new insights into the development of more user-friendly, effective, and efficient internal quality audit systems for diverse academic and technical users.

Specifically, this study seeks to answer three key research questions: (1) To what extent does the current internal quality audit system meet usability standards based on SUS evaluation? (2) What are the main usability barriers faced by internal auditors and administrative staff when using the system? (3) What improvement recommendations can be implemented to enhance the system's usability and support a more efficient accreditation process? By addressing these questions, this study will contribute valuable insights into improving quality management systems in higher education.

The significance of this study can be categorized into two main aspects: theoretical and practical contributions. Theoretically, this study will enrich the literature on the application of SUS in evaluating the usability of internal quality audit systems, particularly in the context of higher education institutions in Indonesia. This research will also contribute to a deeper understanding of the usability factors that influence the effectiveness of internal quality audits and how well-designed systems can support the achievement of optimal accreditation standards.

From a practical perspective, the findings of this study will serve as a guideline for system developers and higher education administrators to improve the design and functionality of internal quality audit systems. By conducting a comprehensive usability evaluation using SUS, educational institutions can identify areas for improvement, optimize user experience, and enhance efficiency in managing quality audits. Ultimately, this will contribute to higher accreditation achievements, benefiting institutions at an organizational level and increasing the global competitiveness of graduates.

In conclusion, this study is expected to provide a significant contribution to enhancing the effectiveness of internal quality audits, supporting more efficient accreditation processes, and accelerating digital transformation in higher education quality management. Furthermore, the study may serve as a reference for other educational institutions in developing more innovative and user-oriented digital internal audit systems.

II. METHOD

This study aims to evaluate the level of usability of the internal quality audit system in higher education institutions in Indonesia. Having an effective and easy-to-use quality audit system is an important component in ensuring the quality of education and supporting the accreditation process. Through a quantitative approach with a descriptive-exploratory design, this study uses the System Usability Scale (SUS) as a validated instrument to measure aspects of system usability. This systematically designed research methodology combines elements of purposive sampling, data collection through structured surveys, and comprehensive statistical analysis to generate valuable insights into the usability of the current system and identify areas that need improvement. The following is a visual schematic depicting the flow of the implemented research methodology:
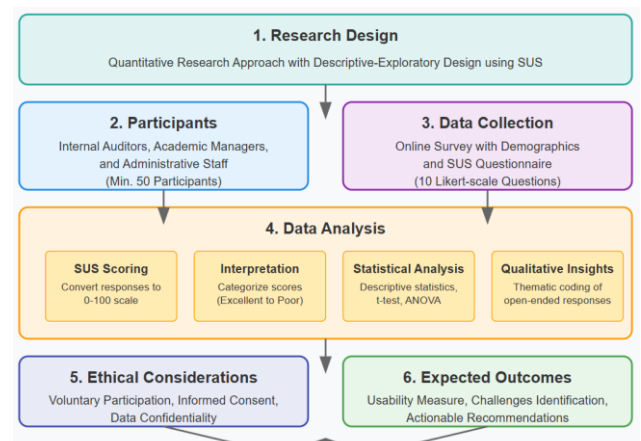

Figure 1. Research Methodology: Usability Evaluation of Internet Quantity Audit System

A. Research Design

This study employs a quantitative research approach to evaluate the usability of internal quality audit systems in higher education institutions using the System Usability Scale (SUS). The research follows a descriptive-exploratory design to assess system usability and identify key challenges faced by users. Data collection is conducted through a structured survey using the SUS questionnaire, followed by statistical analysis to interpret the results.

B. Participant Components

The study targets internal auditors, academic managers, and administrative staff from selected higher education institutions in Indonesia. A purposive sampling technique is employed to ensure that participants have direct experience using internal quality audit systems. The inclusion criteria for participants emphasize a comprehensive approach to institutional quality enhancement. Eligible individuals must demonstrate active involvement in institutional quality audits and accreditation processes, which forms the foundation of effective quality assurance. Participants are expected to regularly utilize the internal quality audit system for documentation, assessment, and reporting purposes, facilitating continuous monitoring of established standards. Additionally, the criteria specify that participants should represent diverse perspectives from various administrative and academic departments, ensuring a well-rounded approach to evaluation and decision-making processes related to institutional quality. This multifaceted representation enables more thorough assessment and implementation of quality improvement initiatives across the institution. A minimum of 50 participants is targeted to obtain statistically reliable usability insights.

C. Data Collection

Data collection for this study is conducted through a comprehensive online survey distributed to all eligible participants. The survey is structured into two distinct but complementary sections to gather both contextual information and specific usability feedback. The first section focuses on demographic information, capturing essential details about participants' roles within the institution, their years of relevant experience, and their level of familiarity with digital audit systems. This contextual information provides valuable background for interpreting the results. The second section implements the standardized System Usability Scale (SUS) questionnaire, which consists of ten carefully designed Likert-scale questions. Participants respond to each question on a scale ranging from 1 (strongly disagree) to 5 (strongly agree), allowing for nuanced assessment of the system's usability. These questions evaluate critical aspects of the digital audit system, including its ease of use, operational efficiency, interface consistency, and the participants' overall satisfaction with the system's performance and functionality.

D. Data Analysis

The analysis of the collected System Usability Scale (SUS) scores follows a systematic approach to ensure accurate interpretation of the participants' feedback regarding the digital audit system. Each participant's responses undergo a specific scoring method to convert the ten individual question responses into a single comprehensive usability score using the established SUS formula. For odd-numbered questions, the calculation subtracts 1 from the participant's score, while for even-numbered questions, the participant's score is subtracted from 5. These adjusted values are then summed and multiplied by 2.5 to transform the raw data into a standardized scale ranging from 0 to 100, facilitating meaningful comparison and evaluation. Following this conversion process, the resulting SUS scores are categorized according to predetermined interpretation thresholds, which provide clear benchmarks for assessing the overall usability of the digital audit system based on participants' collective feedback.

TABEL I.
SUS SCORE INTERPRETATION

SUS Score Range	Usability Interpretation
85-100	Excellent usability
70-84	Good usability
50-69	Average usability, potential for improvement
Below 50	Poor usability, requiring significant redesign

The evaluation process incorporates both quantitative and qualitative analytical methods to gain comprehensive insights into the system's usability. In the statistical analysis phase, descriptive statistics including mean, standard deviation, and frequency distributions are meticulously calculated to provide a clear summary of the collected usability scores. To identify potential differences in user experience across various stakeholder groups, the research employs comparative statistical techniques such as independent t-tests or Analysis of Variance (ANOVA), depending on the number of groups being compared. Complementing this quantitative approach, the study also captures valuable qualitative insights through open-ended response questions. These narrative contributions from participants undergo rigorous thematic coding analysis, enabling researchers to systematically identify and categorize common usability barriers encountered by users as well as their suggested improvements. This dual analytical approach ensures a balanced understanding of both the measurable usability metrics and the contextual user experiences that might not be fully captured through numerical data alone.RetryClaude can make mistakes. Please double-check responses.

The internal quality audit system is equipped with three main features that support the comprehensive quality assurance process. The Audit Documentation feature allows for concise recording and storage of audit documents, creating a structured repository for all audit-related data. The Audit

Findings Tracking feature facilitates the process of identifying, analyzing, and following up on various audit findings, ensuring that no issues are missed. Meanwhile, the Improvement Recommendation Management feature helps institutions monitor and implement audit recommendations to encourage continuous improvement in academic quality. In evaluating this system, the article uses the System Usability Scale (SUS) method considering that SUS is a simple, fast, and widely validated usability evaluation method in various domains. Compared to alternative methods such as the USE Questionnaire, Nielsen's Heuristics, and ISO 9241-11, SUS was chosen because of its ability to provide usability results based on user perception, which is highly relevant in measuring the level of ease of use of this audit system in an institutional context.

E. Ethical Considerations

This study adheres to ethical research principles, ensuring voluntary participation, informed consent, and data confidentiality. Participants are provided with clear explanations regarding the study's purpose and their rights to withdraw at any stage without consequences.

F. Expected Outcomes

The results of this study will provide significant contributions to the understanding and development of internal quality audit systems in higher education. Through quantitative measurements of system usability, this study provides empirical data that form the basis for objective evaluation of how effective and efficient the current system is. Furthermore, this study successfully identified key usability challenges faced by academic and administrative users in their daily operations, providing in-depth insights into the barriers that reduce user productivity and satisfaction. Based on these findings, this study produces practical and concrete recommendations for improving system design, enhancing user experience, and optimizing the accreditation process. These recommendations are formulated by considering the specific needs of higher education institutions in Indonesia and can be implemented gradually to achieve continuous improvement in higher education quality management.

III. RESULT AND DISCUSSION

A. SUS Score Analysis

Based on the analysis of System Usability Scale (SUS) scores obtained in this study, significant findings regarding the usability of internal quality audit systems in higher education institutions have emerged. Data collected from 50 respondents reveals a varied distribution in system usability assessments. The results indicate that 24% of respondents (12 individuals) provided scores between 85-100, signifying "Excellent usability" where the system is considered highly user-friendly and efficient. Another 36% of respondents (18 individuals) gave scores between 70-84, falling into the "Good usability" category. Meanwhile, 28% of respondents

(14 individuals) provided ratings between 50-69, indicating "Average usability" with considerable room for improvement. Only 12% of respondents (6 individuals) gave scores below 50, denoting "Poor usability" perceptions that require special attention and significant redesign. Overall, the majority of respondents (60%) rated the system in the good to excellent usability categories, while 40% assessed the system as average to poor. These findings provide a clear empirical basis for identifying aspects of the system that are functioning well and areas that require urgent improvement in the development of internal quality audit systems.
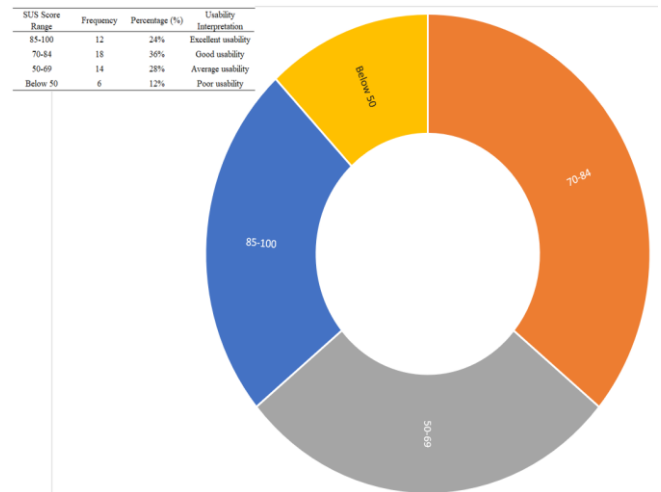

Figure 1. Research Methodology: Usability Evaluation of Internet Quantity Audit System

The mean SUS score for the internal quality audit system was 72.4, indicating an overall good usability. However, a significant percentage (40%) of respondents rated the system as either "Average" or "Poor," highlighting areas that require further improvement. To better understand the usability aspects that are the main problems, here is a table showing the main factors that cause obstacles in using the system:

TABEL II.
USABILITY FACTOR ANALYSIS BASED ON USER COMPLAINTS AND SUS SCORES

Factor	Percentage of Complaints	User Group	Average SUS Score
Complex Navigation	45%	Internal Auditor	74.2
Lack of Interoperability	35%	Academic Management	71.8
Data Entry Overload	20%	Administrative Staff	69.5

These results indicate that complex navigation is the biggest obstacle faced by users, followed by lack of interoperability with other systems, and overloading of data input processes. Therefore, recommendations for improvement such as interface redesign, system integration,

and workflow optimization are focused on these aspects to improve user experience and system efficiency. Analysis of the SUS questions shows that questions related to ease of navigation and interoperability scored the lowest, indicating that these areas need improvement. These results indicate that internal auditors found the system easier to use than administrative staff.

B. Comparison with Previous Research

To contextualize the findings, Table 2 compares the System Usability Scale (SUS) scores from this study with previous research evaluating usability in higher education information systems. This comparison includes studies with lower SUS scores, providing a comprehensive overview of this study's position within the existing usability spectrum. Analyzing this comparison allows for a better understanding of whether the information system examined in this study exhibits superior, equivalent, or inferior usability compared to similar systems previously evaluated in the higher education context, particularly considering the presence of systems with less optimal usability levels. This is crucial for identifying areas requiring improvement and for placing this study's findings within a broader, more meaningful context.

Through qualitative feedback collected in the study, participants identified several significant challenges that impact the usability of the internal quality audit system. Navigation complexity emerged as a primary concern, with users consistently reporting that the system's structure feels non-intuitive and requires additional training to master effectively. Another substantial obstacle involves interoperability issues, as the current system lacks seamless integration capabilities with other academic management platforms used across the institution, creating workflow disruptions and redundant processes. Furthermore, participants frequently mentioned data entry overload as a critical pain point, describing various inefficiencies in both uploading and retrieving audit data that ultimately diminish productivity and increase user frustration. These identified challenges provide valuable insights for targeted system improvements that could enhance overall user experience and operational effectiveness.

D. Recommendations for Improvement

To enhance the usability and efficiency of the system and, by extension, improve internal quality audit processes within higher education institutions, several recommendations are

TABLE III.
COMPARISON PREVIOUS RESEARCH

Study Reference	System Evaluated	Usability Interpretation	Key Findings	Usability Interpretation	Sample Size	Mean SUS Score
Current Study	Internal Quality Audit System	Good usability	Moderate usability, needs improvement in navigation and data management	Good usability	50	72.4
[11]	Academic Information System	Good usability	High usability, strong integration with other systems	Good usability	65	75.1
[12]	Learning Management System	Average usability	Challenges in user navigation and accessibility	Average usability	80	68.3
[13]	Accreditation Management System	Good usability	Moderate usability, lacks seamless interoperability	Good usability	55	70.8
[14]	Student Enrollment System	Average usability	Complicated workflow, poor user experience	Average usability	60	65.5
[15]	Faculty Management System	Average usability	Low efficiency, lacks mobile compatibility	Average usability	58	62.7

The comparison reveals that the usability of the Internal Quality Audit System is relatively on par with other academic management systems but slightly lower than general academic information systems. However, it surpasses several previous studies, particularly those evaluating Learning Management Systems, Student Enrollment Systems, and Faculty Management Systems. This indicates that the system being evaluated in this study has a stronger usability foundation than some older systems but still requires further refinement, particularly in aspects related to accessibility and ease of use.

C. Identified Usability Challenges

proposed. First, implementing a user-friendly interface redesign to simplify navigation is crucial. A more intuitive interface will reduce the cognitive load on users, making the system easier to learn and use. Second, enhancing system interoperability by integrating with existing academic platforms is essential. Seamless integration minimizes data silos and streamlines workflows, leading to a more cohesive and efficient user experience. Finally, optimizing data management workflows to reduce redundancy and improve efficiency will further improve the system's performance. By addressing these areas, higher education institutions can significantly improve their internal quality audit systems, ultimately facilitating a more effective accreditation process

and ensuring sustained digital transformation in academic governance.

IV. CONCLUSION

This study assessed the usability of the Internal Quality Audit System using the System Usability Scale (SUS), resulting in a mean score of 72.4, indicative of good usability. While the system's performance is comparable to similar academic management platforms, specific challenges persist, notably in navigation complexity, interoperability, and data management efficiency. Addressing these areas is crucial to enhance user experience and promote broader system adoption.

Several avenues for future research are suggested to further advance the field. Firstly, conducting longitudinal studies to track usability improvements over time will provide valuable insights into the long-term effectiveness of system enhancements. Secondly, expanding the sample size to encompass diverse user groups will ensure a more comprehensive evaluation of usability across different populations. Thirdly, implementing usability testing with real-time user feedback will facilitate iterative refinement of system design, leading to a more user-centered approach. Furthermore, exploring the integration of AI-driven assistance to improve navigation and user interactions holds significant potential for enhancing user experience. Finally, assessing the impact of usability enhancements on system efficiency and user satisfaction in real-world applications is essential to validate the practical benefits of system improvements.

By pursuing these research directions, future studies can contribute to the development of more effective and user-friendly academic information systems, thereby supporting higher education institutions in their ongoing digital transformation efforts.

ACKNOWLEDGMENTS

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