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User Experience Evaluation of the Internal Quality Assurance Information System (E-AMI) using the User Experience Questionnaire Plus (UEQ+)

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Abstract

This study evaluates the user experience (UX) of the E-AMI system at Primakara University, an academic quality assurance system managed by the Quality Assurance Institution (LPM). A sequential explanatory mixed-method design was employed, combining quantitative measurement using the User Experience Questionnaire Plus (UEQ+) across 15 scales with qualitative data collected through observations and semi-structured interviews. A total of 41 respondents participated, consisting of administrators, auditors, and auditees actively involved in the Internal Quality Audit (AMI) process. UEQ+ scores range from -3 (very negative) to +3 (very positive), with scores above 1.0 generally classified as good. The quantitative results yielded an average KPI score of 2.10, indicating good user experience quality, with the highest scores recorded in usefulness (M = 2.51), efficiency (M = 2.26), and perspicuity (M = 2.38). These findings were corroborated by qualitative data confirming the system's effectiveness in supporting core AMI processes. However, both quantitative and qualitative findings converged on several persistent UX weaknesses: Importance-Performance Analysis (IPA) identified visual aesthetics (M = 1.41), novelty (M = 1.90), attractiveness (M = 1.91), stimulation (M = 1.95), and value (M = 1.98) as priority improvement dimensions, consistent with qualitative findings of unintuitive navigation, insufficient system feedback, interface inconsistencies, and incomplete feature support. It is concluded that while the E-AMI system performs well in functional dimensions, further development in visual, experiential, and feature dimensions is required to achieve optimal UX quality, with future improvements recommended to adopt a user-centered design approach.

keywords: academic quality assurance, E-AMI, importance-performance analysis, UEQ+, user experience

1 Introduction

The rapid development of information technology has encouraged higher education institutions to implement various information systems to support business processes and improve the effectiveness and efficiency of services [1]. Information systems can be defined as an integrated set of interconnected elements designed to process, store, and distribute data into valuable information [2], with their primary function being to support various organizational activities, both in decision-making processes and in operational management [3]. This digital transformation is closely aligned with the implementation of Good University Governance (GUG) principles, which emphasize transparency, accountability, and responsibility, so that universities are expected not only to fulfill service quality standards but also to deliver services that exceed user expectations [4].

Primakara University, through its Quality Assurance Institution (Lembaga Penjaminan Mutu/LPM), utilizes the E-AMI system to manage and evaluate academic quality. However, the implementation of this system still faces several challenges, including limited features, system errors, and non-intuitive navigation. These conditions indicate that the quality of the user experience (UX) has not yet been fully optimized, making system evaluation essential to ensure that system functions align with user needs and to improve overall service quality [5].

Usability-based system evaluation is one of the most widely adopted approaches to measuring system quality, identifying system weaknesses, and ensuring that the system meets user needs [6].

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This evaluation encompasses aspects of effectiveness, efficiency, and user satisfaction in using a system [7], and involves the collection and analysis of user feedback regarding system functionality [8]. Beyond usability, UX represents a broader and more critical dimension, referring to how users perceive their interaction with a system, including comfort, ease of use, and overall satisfaction [9]. In practice, many systems continue to encounter UX-related issues such as inefficient usability and insufficient feature innovation. Therefore, information system evaluation is necessary to measure user satisfaction levels and identify gaps between system performance and user expectations, so that improvements can be implemented in a targeted and sustainable manner [10].

One method that can be employed to evaluate UX is the User Experience Questionnaire Plus (UEQ+), a modular framework developed from the UEQ [11]. UEQ+ enables flexible selection of measurement scales according to the system context being evaluated [12], has been validated and proven reliable across various studies, and is supported by benchmark data to facilitate more objective interpretation of results [13]. Previous studies have applied UEQ+ primarily to evaluate online learning platforms [12] and mobile applications [14], while broader UX quality aspects across different product categories have also been examined using the UEQ+ framework [15]. However, studies evaluating academic information systems in higher education particularly systems dedicated to internal quality assurance (Sistem Penjaminan Mutu Internal/SPMI) have predominantly relied on the standard UEQ instrument, which offers only six fixed measurement scales and therefore provides limited diagnostic granularity regarding specific UX dimensions [16]. This gap limits the capacity of universities to make evidence-based, targeted decisions in system improvement. Therefore, this study aims to evaluate the user experience of the E-AMI system at Primakara University using UEQ+ across 15 measurement scales, and to identify priority UX dimensions for improvement in order to enhance system quality and support the optimization of academic quality governance.

2 Literature Review

Usability-based evaluation of information systems has become a primary concern in information systems research. Numerous studies have demonstrated that system quality is not solely determined by its functionality, but also by the extent to which the system can be used effectively, efficiently, and satisfactorily by its users[6][7]. This evaluation approach has become increasingly relevant as the complexity of digital systems in institutional environments grows, including in higher education, where information systems are required to support transparent and accountable governance in accordance with the principles of Good University Governance [4]. In this context, the concept of user experience (UX) has emerged as a more comprehensive evaluation dimension than usability alone, as UX encompasses the user's overall perception of their interaction with a system, ranging from comfort and ease of use to overall satisfaction [9].

A number of studies have explored various UX evaluation methods for digital systems, yet with varying instruments, objects, and scales. . Research combining UEQ with Heuristic Evaluation and Think Aloud on academic management systems found that although the system was considered sufficiently usable, issues with navigation and interface consistency remained the primary obstacles for users [17]. Similar findings were obtained in the evaluation of the PPID website of Universitas Pendidikan Ganesha using UEQ, which generally yielded positive assessments but did not provide an in-depth picture of which UX dimensions most required improvement[18]. The standard UEQ provides only six fixed measurement scales, making it unable to capture more specific and contextual UX aspects[13]. Furthermore, most prior studies have not integrated a structured priority analysis, resulting in recommendations that tend to be general and difficult to operationalize [19].

These limitations have prompted researchers to shift toward more modular and contextual instruments, one of which is the User Experience Questionnaire Plus (UEQ+) [11]. UEQ+ provides a catalog of scales that can be flexibly selected according to the system context being evaluated, encompassing up to 16 available UX aspects. Scale selection in UEQ+ is guided by product category and user profile, thereby producing evaluations that are more accurate and contextually relevant [15]. The advantages of UEQ+ have been demonstrated across multiple studies. Research applying UEQ+ to an e-wallet application using a Design Thinking approach successfully identified significant improvements in the dimensions of intuitive use (67.1%) and clarity (49.3%) following design revisions, with a Cronbach's Alpha value of 0.965 indicating very high instrument reliability [20]. In

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the context of public service applications, the application of UEQ+ to the MyPertamina app yielded positive scores across eight measurement scales with averages exceeding 1.5, indicating that users had a favorable experience with the system[21]. Meanwhile, an evaluation of the EVoMu e-voting application using UEQ+ found that the Trust dimension received the highest score (mean = 2.31), underscoring the importance of trust as a critical factor in digital-based systems[22].

Another study employing UEQ+ with 15 measurement scales and involving 310 respondents from two distinct user groups found differing improvement priorities between employees, who emphasized Visual Aesthetics, and customers, who prioritized the Clarity aspect [23]. This finding confirms that UX evaluation is not generic in nature, but is highly dependent on the user profile and the context of system use. Accordingly, the selection of 15 UEQ+ scales in this study is grounded in their relevance to the characteristics of a web-based information system used by users with diverse academic backgrounds, as recommended in the UEQ+ guidelines [15]. The methodological advantage of modular and flexible scale selection offered by UEQ+ is significant in producing accurate and contextually relevant evaluations [12][13].

Although the aforementioned studies have made meaningful contributions to the development of UX evaluation, several gaps remain that have not been adequately addressed. First, nearly all existing research has focused on commercial applications, digital public services, or e-voting systems, while studies evaluating the UX of academic quality assurance systems in higher education remain scarce. Such systems possess unique characteristics, as they involve users from diverse academic backgrounds and are designed to support complex institutional decision-making processes. Second, prior research has generally not integrated Importance-Performance Analysis (IPA) to specifically identify which UX factors constitute priority improvements from the users' perspective in a measurable manner [19]. IPA enables the identification of UX dimensions with high importance but low performance, thereby generating more targeted and evidence-based improvement recommendations (Hinderks et al., 2019). This study aims to fill those gaps by evaluating the UX of the E-AMI system at Primakara University using UEQ+ with 15 measurement scales, while simultaneously identifying the UX dimensions most in need of attention to support system optimization and the strengthening of academic quality governance on a sustainable basis [10].

3 Research Method

3.1. Research Design

This study employed a mixed-method research design with a sequential explanatory strategy, in which quantitative data were collected and analyzed first, followed by qualitative data to explain and elaborate on the quantitative findings [24]. The quantitative phase involved the distribution of the UEQ+ questionnaire to measure user experience across 15 scales, while the qualitative phase comprised interviews and observations conducted to deepen the understanding of issues identified in the quantitative results. This sequential approach was selected because the primary objective of the study is to measure UX quantitatively using UEQ+, with qualitative methods serving to provide contextual interpretation of the findings.

3.2. Population, Sample, and Respondent Criteria

The population in this study consisted of all active users of the E-AMI system at Primakara University who were directly involved in the Internal Quality Audit (AMI) process. The inclusion criteria applied were as follows: (1) users who had actively used the E-AMI system for at least one AMI cycle; (2) users who held roles as administrators, auditors, or auditees within the AMI process; and (3) users who were willing to participate voluntarily in the study.The sampling technique employed was total sampling, in which all members of the population meeting the inclusion criteria were included as research samples [25]. A total of 41 respondents participated in this study, comprising 2 administrators (4.88%), 6 auditors (14.63%), and 33 auditees (80.49%), all of whom were actively involved in the Internal Quality Audit (AMI) process at Primakara University.

3.3. Data Collection Method

a. Interviews

Interviews generally aim to collect information or data regarding a particular topic [26]. In this study, semi-structured interviews were employed was employed to collect qualitative

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data with four main objectives. First, to understand the procedures and components involved in the implementation of the Internal Quality Audit (AMI) process and internal quality assurance. Second, to identify the obstacles and challenges experienced by users in managing the AMI process, including the effectiveness of the E-AMI system, system usage activities, user involvement in the AMI process, and stakeholders affected by the use of the E-AMI system. Third, to explore users' perceptions of the E-AMI system in greater depth. Fourth, to identify users' needs and expectations regarding the E-AMI system in order to support future system quality improvements. Interviews were conducted with selected representatives from each user role administrator, auditor, and auditee to ensure that perspectives from all user groups were captured.

b. Observation

In this study, observation was conducted by examining the implementation of the Internal Quality Audit (AMI) process using the E-AMI system at Primakara University. The observation guideline employed in this research was based based on a usability testing script developed in accordance with the Usability Starter Kit published by Digital.gov, which provides standardized procedures for planning and conducting usability tests on digital systems, including task scenario design, observer roles, and data recording protocols [27]. This approach aimed to obtain a comprehensive understanding of the operational mechanisms of the E-AMI system as well as the interaction patterns between users, including both auditors and auditees, within the system.

c. Questionnaire

Data collection was conducted using the User Experience Questionnaire Plus (UEQ+), which was specifically designed to measure user experience comprehensively based on scales relevant to the evaluation context. The UEQ+ instrument was selected and implemented following the official UEQ+ Handbook, which recommend scale selection based on product category and user profile. The 15 scales used in this study were determined through a preliminary assessment of the E-AMI system's characteristics as a web-based institutional management system, combined with a review of existing UEQ+ research on similar system categories [15]. Each scale in the UEQ+ was constructed using four semantic differential items, presented on a seven-point bipolar scale ranging from -3 (very negative) to +3 (very positive).

3.4. Research Instrument

The research instrument used in this study was the UEQ+ questionnaire consisting of 15 scales, namely Efficiency, Usefulness, Perspicuity, Adaptability, Dependability, Intuitive Use, Stimulation, Novelty, Trust, Attractiveness, Visual Aesthetics, Clarity, Value, Trustworthiness of Content, and Quality of Content. Each scale consisted of four items, resulting in a total of 60 measurement items. The questionnaire also included respondent identity items and one additional question to identify respondents' perceptions regarding the relevance of the measured scales to the E-AMI system context. The response format for each item followed a seven-point bipolar scale, as presented in Table 1, ranging from -3 (very negative) to +3 (very positive) [28].

Table 1 UEQ+ scale polarity values

Polarity Name	Polarity Value
Very negative	-3
Negative	-2
Slightly negative	-1
Neutral	0
Slightly positive	1
Positive	2
Very Positive	3

The standard deviation was used to determine the level of agreement among respondents. As shown in Table 2, agreement levels are categorized into three thresholds: high agreement (< 0.83), medium agreement (0.83 – 1.01), and low agreement (> 1.01).

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Table 2 Standard deviation categories

Kategori	Skor
High agreement	<0.83
Medium agreement	0.83-1.01
Low agreement	>1.01

3.5. Instrument Validation

Prior to distribution, the UEQ+ instrument underwent content validity assessment to ensure that each item appropriately reflected the UX dimension it was intended to measure. Content validity was evaluated by reviewing the alignment between each item and its corresponding scale definition as specified in the UEQ+ Handbook [29]. Internal consistency reliability was subsequently assessed using Cronbach's Alpha coefficient, with a minimum acceptable threshold of 0.70. Items or scales falling below this threshold were reviewed and, where necessary, excluded from the final analysis to ensure measurement quality.

3.6. KPI Calculation Method

The Key Performance Indicator (KPI) for each UEQ+ scale was calculated by computing the mean score of all items within a given scale across all respondents, as defined in the UEQ+ Data Analysis Tool [13]. The resulting KPI values were then interpreted against the UEQ+ benchmark, which classifies scale performance into five categories: Excellent, Good, Above Average, Below Average, and Bad [13]. Additionally, Importance-Performance Analysis (IPA) was applied to cross-reference each scale's KPI score against its perceived importance rating provided by respondents, enabling the identification of UX dimensions that constitute priority areas for improvement [19]. The IPA quadrant classification used in this study followed Method 2 as proposed by Hinderks et al. (2020), which has been shown to provide more actionable improvement insights compared to Method 1.

3.7. Types and Sources of Data

The type of data used in this study was quantitative data obtained from the UEQ+ questionnaire distributed to 41 respondents who used the E-AMI system, supplemented by qualitative data collected through interviews and observations. The data sources consisted of primary data collected through interviews, observations, and UEQ+ questionnaire responses, as well as secondary data derived from scientific journals, previous studies, AMI documents, e-books, and other supporting sources.

3.8. Research Flow

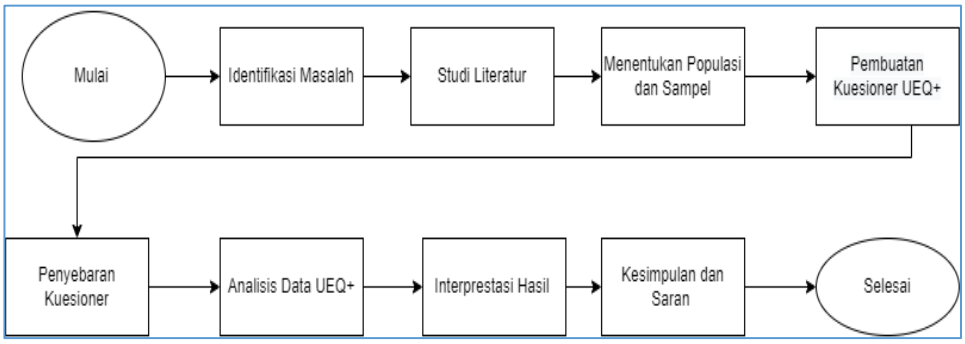

Figure 1 Research Flow Diagram

This study began with problem identification through observations and semi-structured interviews with active users of the E-AMI system, which subsequently served as the basis for selecting the UEQ+ scales as the evaluation instrument. A literature review was then conducted to determine the appropriate research method and design. The UEQ+ questionnaire was developed in accordance with the official UEQ+ Handbook guidelines and distributed online through Google Forms. The collected quantitative data were analyzed using the Excel-based

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UEQ+ Data Analysis Tool to compute scale KPIs and benchmark classifications, followed by IPA to identify priority improvement dimensions. The quantitative findings were subsequently elaborated through qualitative interpretation derived from interview and observation data. The results of this integrated analysis formed the basis for the conclusions and improvement recommendations presented in this study.

4 Results and Analysis

4.1 Observation and Interview Results

The interview results involving three user roles administrator, auditor, and auditee indicated that the E-AMI system still faces several issues related to usability, efficiency, interface consistency, and feature completeness.

From the usability perspective, users experienced difficulties in navigating the system, particularly in identifying specific features and understanding the structure of the available menus. For instance, auditors reported difficulty locating the audit form submission menu, which is nested multiple levels deep within the navigation structure, resulting in repeated trial-and-error before the correct pathway was found.

In terms of efficiency, the processes of data management and form completion were still performed manually and repetitively, thereby reducing work effectiveness. Auditees noted that supporting documents were required to be uploaded one file at a time, with no option for bulk file selection, which significantly extended the time required to complete audit submissions. In addition, inconsistencies were identified in the system interface, including the use of terminology, menu naming, and the positioning of user interface (UI) elements. The system also did not yet provide adequate feedback mechanisms for example, after submitting an audit form, no confirmation message or status indicator appeared, leaving users uncertain whether the submission had been successfully recorded.

From the feature perspective, the system has not fully supported user needs, with users specifically noting the absence of bulk processing, file preview functionality, and flexibility in data management features. In terms of accessibility, the system was also considered not yet optimal, particularly for users with visual impairments, as there were no screen-reader-compatible labels or sufficient color contrast on several interface elements.

These findings indicate that the E-AMI system requires further development oriented toward a user experience approach in order to improve interaction quality, operational efficiency, and the overall effectiveness of system usage in a sustainable manner.

4.2 UEQ+ Result

a. Data Means Confidence per Scale

Table 3 presents the mean scores and confidence intervals for all 15 UEQ+ scales based on responses from 41 respondents. The highest mean score was obtained by the Usefulness scale (M = 2.51), followed by Perspicuity (M = 2.38) and Quality of Content (M = 2.27). In contrast, the Visual Aesthetics scale obtained the lowest score (M = 1.41), followed by Novelty (M = 1.90) and Attractiveness (M = 1.91). The gap of 1.10 between the highest and lowest scores indicates that the E-AMI system is considered highly effective in supporting user functions and needs; however, it still lacks the ability to provide an engaging visual and emotional user experience. All scales yielded confidence intervals entirely above zero, indicating that user perceptions were consistently positive across all dimensions, which is in line with findings from comparable UEQ+ studies on institutional information systems [13].

Table 3 Mean and confidence per scale

Scale	Mean	Variance	Std.dev.	N	Confidence	Confidence Interval
Efficiency	2.26	0.62	0.79	41	0.24	2.02 – 2.50
Usefulness	2.51	0.40	0.63	41	0.19	2.32 – 2.70

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Scale	Mean	Variance	Std.dev.	N	Confidence	Confidence Interval
Perspicuity	2.38	0.45	0.67	41	0.20	2.17 – 2.58
Adaptability	2.13	0.89	0.94	41	0.29	1.85 – 2.42
Dependability	2.21	0.66	0.81	41	0.25	1.96 – 2.45
Intuitive Use	2.26	0.56	0.75	41	0.23	2.03 – 2.49
Stimulation	1.95	0.92	0.96	41	0.29	1.65 – 2.24
Novelty	1.90	0.78	0.88	41	0.27	1.63 – 2.17
Trust	2.15	0.75	0.86	41	0.26	1.88 – 2.41
Attractiveness	1.91	1.10	1.05	41	0.32	1.59 – 2.23
Visual Aesthetics	1.41	1.43	1.19	41	0.37	1.05 – 1.78
Clarity	2.08	0.60	0.77	41	0.24	1.84 – 2.32
Value	1.98	0.83	0.91	41	0.28	1.70 – 2.25
Trustworthiness of Content	2.18	0.60	0.78	41	0.24	1.95 – 2.42
Quality of Content	2.27	0.38	0.62	41	0.19	2.09 – 2.46

b. Mean Importance Ratings

Table 4 presents the importance ratings assigned by respondents for each of the 15 scales, reflecting the extent to which each UX dimension was considered relevant to their use of the E-AMI system.

Table 4 Mean importance ratings

Scale	Mean	Variance	Std.dev.	N	Confidence	Confidence Interval
Efficiency	2.24	0.54	0.73	41	0.22	2.02 – 2.47
Usefulness	2.32	0.47	0.68	41	0.21	2.11 – 2.52
Perspicuity	2.32	0.42	0.64	41	0.20	2.12 – 2.51
Adaptability	2.12	0.51	0.71	41	0.22	1.91 – 2.34
Dependability	2.10	0.44	0.66	41	0.20	1.90 – 2.30
Intuitive Use	2.15	0.58	0.75	41	0.23	1.92 – 2.38
Stimulation	2.02	0.77	0.87	41	0.27	1.76 – 2.29

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Scale	Mean	Variance	Std.dev.	N	Confidence	Confidence Interval
Novelty	1.95	0.60	0.76	41	0.23	1.72 – 2.18
Trust	2.10	0.64	0.79	41	0.24	1.86 – 2.34
Attractiveness	1.93	0.57	0.75	41	0.23	1.70 – 2.15
Visual Aesthetics	1.56	1.05	1.01	41	0.31	1.25 – 1.87
Clarity	2.20	0.41	0.63	41	0.19	2.00 – 2.39
Value	2.07	0.62	0.78	41	0.24	1.84 – 2.31
Trustworthiness of Content	2.22	0.48	0.68	41	0.21	2.01 – 2.43
Quality of Content	2.24	0.39	0.62	41	0.19	2.06 – 2.43

As shown in Table 4, the highest importance ratings were recorded for Usefulness (M = 2.32) and Perspicuity (M = 2.32), indicating that respondents considered these functional dimensions most critical to their use of the E-AMI system. In contrast, Visual Aesthetics received the lowest importance rating (M = 1.56), followed by Attractiveness (M = 1.93) and Novelty (M = 1.95). These importance ratings were subsequently cross-referenced with the mean performance scores from Table 3 to conduct the Importance-Performance Analysis (IPA) presented in the following section.

c. KPI Analysis

Table 5 KPI summary

Description	KPI	Std.Dev.
Data 1 — Functional scales (Efficiency, Usefulness, Perspicuity, Adaptability, Dependability, Intuitive Use, Stimulation, Novelty, Trust, Attractiveness)	2.19	0.57
Data 2 — Visual and content scales (Visual Aesthetics, Clarity, Value, Trustworthiness of Content, Quality of Content)	2.02	0.68
Average	2.10	0.62

As presented in Table 5, the KPI analysis results indicate that the E-AMI system demonstrates a good level of user experience quality, with an average KPI score of 2.10 on a scale of -3 to +3, which falls within the "good" benchmark classification according to the UEQ+ benchmark framework [13]. The functional scale group achieved a higher KPI score of 2.19, while the visual and content scale group obtained a score of 2.02. The greater standard deviation in the visual and content group (0.68 vs. 0.57) suggests higher variability in user perceptions of these dimensions, indicating that these areas still require improvement to achieve a more balanced user experience quality. This pattern is consistent with findings from prior UEQ+ studies, which similarly reported stronger performance on functional dimensions compared to hedonic dimensions in institutional web-based systems [15].

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d. Importance-Performance Analysis (IPA)

To identify priority areas for improvement, IPA was conducted by cross-referencing each scale's mean performance score (Table 3) against its mean importance rating (Table 4), following the quadrant classification method proposed by Hinderks et al. (2020). The grand mean of performance scores (2.13) and importance ratings (2.16) were used as threshold values to determine quadrant placement. The IPA quadrant analysis results are presented in Figure 1 above, with the following findings:

Quadrant I — Concentrate Here (high importance, low performance): Visual Aesthetics (M = 1.41, importance = 1.56), Novelty (M = 1.90, importance = 1.95), Stimulation (M = 1.95, importance = 2.02), Attractiveness (M = 1.91, importance = 1.93), and Value (M = 1.98, importance = 2.07) fall into this quadrant, indicating that these dimensions are considered important by users but have not been adequately fulfilled by the system. These scales therefore represent the highest priority for improvement. This finding is consistent with previous UEQ+ research, which identified visual aesthetics and stimulation as dimensions most commonly underperforming in institutional management systems compared to commercial applications (Putu Intan Karunia Dewi et al., 2026).

Quadrant II — Keep Up the Good Work (high importance, high performance): Usefulness (M = 2.51), Perspicuity (M = 2.38), Efficiency (M = 2.26), Intuitive Use (M = 2.26), Quality of Content (M = 2.27), and Trustworthiness of Content (M = 2.18) fall into this quadrant. These dimensions demonstrate that the system has successfully met user expectations in its core functional aspects and should be maintained in future development.

Quadrant III — Low Priority (low importance, low performance): Clarity (M = 2.08, importance = 2.20) falls into this quadrant. Although its performance score is relatively moderate, its importance rating is below the grand mean threshold, indicating that this dimension is currently not a primary concern for users.

Quadrant IV — Possible Overkill (low importance, high performance): Dependability (M = 2.21), Adaptability (M = 2.13), and Trust (M = 2.15) fall into this quadrant, suggesting that while these dimensions perform well, users place relatively lower importance on them compared to other aspects of the system. The high Trust score aligns with findings from Salsabila et al. (2023), which similarly reported Trust as one of the strongest dimensions in digital institutional systems

5 Conclusion

5.1. Main Conclusions

This study evaluated the user experience of the E-AMI system at Primakara University using UEQ+ across 15 measurement scales with 41 respondents. The system demonstrated good overall UX quality with an average KPI score of 2.10, with functional dimensions particularly usefulness (M = 2.51), efficiency (M = 2.26), and perspicuity (M = 2.38) performing strongest, corroborated by qualitative findings confirming the system's effectiveness in supporting core AMI processes. However, IPA results identified visual aesthetics (M = 1.41), novelty (M = 1.90), attractiveness (M = 1.91), stimulation (M = 1.95), and value (M = 1.98) as priority improvement dimensions, consistent with qualitative findings of unintuitive navigation, insufficient system feedback, interface inconsistencies, and incomplete feature support including the absence of bulk processing, file preview functionality, and screen-reader-compatible accessibility elements. The E-AMI system therefore performs well functionally but requires further development in visual, experiential, and feature dimensions to achieve optimal UX quality.

5.2. Practical Implications

Future development of the E-AMI system should prioritize three areas: (1) usability improvements, including navigation simplification, enhanced system feedback, and interface consistency; (2) visual and hedonic enhancements to address the underperforming dimensions of visual aesthetics, novelty, and stimulation; and (3) adoption of a user-centered design approach to ensure development outcomes remain aligned with user needs on a sustainable basis.

5.3. Limitations

This study has three key limitations. First, the study was limited to users at Primakara University (n = 41), and findings may not generalize to other institutions with different system characteristics or quality assurance contexts. Second, the cross-sectional data collection design cannot capture changes

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in user perceptions over time. Third, UX dimensions beyond the 15 selected scales, such as accessibility and long-term emotional engagement, were not measured.

5.4. Future Research

Future studies are encouraged to: (1) expand the scope to multiple institutions for greater generalizability; (2) involve larger and more diverse respondent samples; (3) evaluate the proposed improvement recommendations through prototype testing using usability testing or A/B testing methods; and (4) adopt a longitudinal design to measure UX quality changes before and after system improvements are implemented.

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References

[1] G. Indrawan, "*User Experience Testing on Smart Human Capital Dashboard (SHUCADA) from PT Studio Kami Mandiri using User Experience Questionnaire (UEQ),*" *Matrix: Jurnal Manajemen Teknologi dan Informatika*, Vol. 16, pp. 39–48, 2026, DOI: 10.31940/matrix.v16i1.39-48.

[2] I. G. S. Mulyawan, I. M. Candiasa, D. Gede, H. Divayana, and S. Journal, "Evaluasi Sistem Informasi Manajemen Daerah – Barang Milik Daerah menggunakan *Framework ITIL* pada *Area Service Operation* dengan Pendekatan *Framework CMMI-SVC*," *SINTECH JOURNAL*, Vol. 5, No. 1, pp. 103–113, 2022, DOI: https://doi.org/10.31598.

[3] I. G. Made, S. Dwipayana, I. M. Candiasa, L. Joni, and E. Dewi, "*Usability Evaluation of Lecturer Information System using CTA, Performance Measurement and SUS*," *Sinkron : Jurnal dan Penelitian Teknik Informatika*, Vol. 9, No. 1, pp. 149–159, 2025, DOI: https://doi.org/10.33395/sinkron.v9i1.14315 e-ISSN.

[4] N. P. A. Mentayani, I. P. Satwika, I. G. A. Pramesti Dwi Putri, A. A. I. I. Paramitha, and T. Tiawan, "Analisis dan Perancangan *User Interface* Sistem Informasi Pembayaran Mahasiswa STMIK Primakara berbasis *Web*," *Technomedia Journal*, Vol. 7, No. 1, pp. 78–89, 2022, DOI: 10.33050/tmj.v7i1.1850.

[5] A. Ardinata, I. Paramitha, N. Luh, N. Septyarini, and P. Astawa, "Evaluasi *User Experience* dan Perancangan Ulang *Interface* pada *Website Thai.Com* menggunakan Metode *Heuristik* dan *User Experience Questionnaire (UEQ),*" 2023.

[6] I. Putu, E. Widyantara, I. Made, and G. Sunarya, "*Evaluation of the Success of TPP Information System Implementation using the Hot-Fit Method*," *Eduvest-Journal of Universal Studies*, Vol. 5, 2025, [Online]. Available: http://eduvest.greenvest.co.id

[7] I. G. P. A. A. Putra, I. M. Candiasa, and I. N. Sukajaya, "*Usability Evaluation of the Undiksha Letter Management System Website using Performance Measurement*, Think Aloud, And Mouse Tracking Methods," *Jurnal Nasional Pendidikan Teknik Informatika (JANAPATI)*, Vol. 14, No. 3, pp. 616–624, Dec. 2025, DOI: 10.23887/janapati.v14i3.100659.

[8] N. Putu *et al.*, "Evaluasi *Usability* dengan Pendekatan *System Usability Scale (SUS)* pada Aplikasi TMHub," Jan. 2024. DOI: 10.56327/jtksi.v7i1.1600.

[9] P. W. S. Dewi, D. G.R, and I. G, "*User Experience Evaluation of e-Report Application using Cognitive Walkthrough (CW), Heuristic Evaluation (HE) and User Experience Questionnaire User Experience Evaluation of e-Report Application using Cognitive Walkthrough (CW), Heuristic Evaluatio*," 2024, DOI: 10.1088/1742-6596/1516/1/012024.

[10] I. K. A. I. Diatmika, I. M. G. Sunarya, and I. G. A. Gunadi, "Evaluasi Layanan Pengaduan Masyarakat Pro Denpasar sebagai *Platform E-Government* menggunakan *Webqual 4.0, E-*

 ISSN:2302-8149
e-ISSN:2540-9719

Govqual dan *Importance Performance Analysis*," *Jurnal Pendidikan Teknologi dan Kejuruan*, Vol. 22, No. 2, 2025, [Online]. Available: https://pengaduan.denpasarkota.go.id/.

[11] J. Kollmorgen, A. Hinderks, and J. Thomaschewski, "*Selecting the Appropriate User Experience Questionnaire and Guidance for Interpretation: the UEQ Family*," *International Journal of Interactive Multimedia and Artificial Intelligence*, Vol. 9, No. 4, pp. 126–139, 2025, DOI: 10.9781/ijimai.2024.08.005.

[12] H. B. Santoso, M. Schrepp, L. M. Hasani, R. Fitriansyah, and A. Setyanto, "*Heliyon the use of User Experience Questionnaire Plus (UEQ þ) for Cross-Cultural UX Research : Evaluating Zoom and Learn Quran Tajwid as Online Learning Tools*," *Heliyon*, Vol. 8, No. 11, pp. 1–12, 2022, DOI: 10.1016/j.heliyon.2022.e11748.

[13] A. L. Meiners, M. Schrepp, A. Hinderks, and J. Thomaschewski, "*A Benchmark for the UEQ+ Framework: Construction of a Simple Tool to Quickly Interpret UEQ+ KPIs*," *International Journal of Interactive Multimedia and Artificial Intelligence*, Vol. 9, No. 1, pp. 104–111, 2024, DOI: 10.9781/IJIMAI.2023.05.003.

[14] N. D. Priandani *et al.*, "Jurnal Teknologi dan Manajemen Informatika *User Experience Evaluation of Botani Mobile Application using User Experience Questionnaire*," Vol. 9, No. 1, pp. 12–19, 2023, [Online]. Available: http://http://jurnal.unmer.ac.id/index.php/jtmi

[15] M. Schrepp *et al.*, "*On the Importance of UX Quality Aspects for Different Product Categories*," *International Journal of Interactive Multimedia and Artificial Intelligence*, Vol. 8, No. 2, pp. 232–246, 2023, DOI: 10.9781/IJIMAI.2023.03.001.

[16] A. A. Lasawali, A. Susilo, Y. Irawan, R. Mayasari, and B. Nugraha, "*User Experience Analysis with User Experience Questionnaire (UEQ) in Academic Information Systems*," 2022.

[17] I. K. Parwata, I. M. Candiasa, and D. G. Hendra Divayana, "Evaluasi Sistem Informasi Perpustakaan Universitas Pendidikan Ganesha pada Aspek *Usability* dengan Metode *User Experience Questionnaire, Heuristic Evaluation* dan *Think Aloud*," *Jurnal Pendidikan Teknologi dan Kejuruan*, Vol. 21, No. 1, 2024, DOI: 10.23887/jptkundiksha.v21i1.66978.

[18] M. Yuda Sadewa, M. Agus Panji Sujaya, I. M. Agus Oka Gunawan, and G. Indrawan, "Evaluasi Pengalaman Pengguna *Website* PPID UNDIKSHA dengan Metode *User Experience Questionnaire (UEQ)*," No. 5, Jun. 2024, DOI: https://doi.org/10.23887/insert.v5i1.70383.

[19] A. Hinderks, A. L. Meiners, F. J. Domínguez-Mayo, and J. Thomaschewski, "*Applying Importance-Performance Analysis (IPA) to Interpret the Results of the User Experience Questionnaire (UEQ)*," *Journal of Web Engineering*, Vol. 19, No. 2, pp. 243–266, Jun. 2020, DOI: 10.13052/jwe1540-9589.1926.

[20] W. F. Setiawan, A. Amirullah, and S. Rochimah, "*Enhancing User Experience through UI Redesign using the UEQ+ Method*," 2025. DOI: 10.62527/joiv.9.6.

[21] A. S. S. Ariyanto, "Analisis *User Experience* pada Aplikasi Voting berbasis *Flutter*: Studi Evaluasi menggunakan UEQ+," *METHOMIKA Jurnal Manajemen Informatika dan Komputerisasi Akuntansi*, Vol. 8, No. 1, pp. 72–78, 2024, DOI: https://doi.org/10.46880/jmika.Vol8No1.pp72-78.

[22] Z. Salsabila, F. Halim, A. F. F. P. Lumban gaol, and A. A. Hutauruk, "Penggunaan *User Experience Questionnaire Plus (UEQ+)* untuk mengevaluasi Pengalaman Pengguna Aplikasi Mypertamina," *REMIK: Riset dan E-Jurnal Manajemen Informatika Komputer*, Vol. 7, No. 4, pp. 1856–1867, 2023, DOI: http://doi.org/10.33395/remik.v7i4.13052.

[23] N. Putu Intan Karunia Dewi, A. Istri Ita Paramitha, I. Gst Agung Pramesti Dwi Putri, J. Tukad Badung No, D. Selatan, and K. Denpasar, "Evaluasi Pengalaman Pengguna *Website* ASTIKOM menggunakan Metode *User Experience Questionnaire Plus (UEQ+),"* 2026.

[24] M. A. S. Toyon, "*Explanatory Sequential Design of Mixed Methods Research: Phases and Challenges*," *International Journal of Research in Business and Social Science (2147- 4478)*, Vol. 10, No. 5, pp. 253–260, Aug. 2021, DOI: 10.20525/ijrbs.v10i5.1262.

[25] N. P. Pradani *et al.*, "Pengaruh Kompensasi Non Finansial, Disiplin Kerja, dan Lingkungan Kerja terhadap Kinerja Karyawan PT. Inter Buana Mandiri," 2025.

[26] Devi Amitha Shofiani, Hotimah Khusnul, A Ramadhan Sakha, Karimullah Achmad, and Anshori M. Isa, "Mewawancarai Kandidat: Strategi untuk Meningkatkan Efisiensi dan Efektivitas," *MASMAN : Master Manajemen*, Vol. 2, No. 2, pp. 66–78, 2024, DOI: 10.59603/masman.v2i2.387.

 ISSN:2302-8149
e-ISSN:2540-9719

[27] "*Usability Starter Kit – Digital.gov*." Accessed: Jan. 12, 2026. [Online]. Available: https://digital.gov/resources/digitalgov-user-experience-resources/digitalgov-user-experience-program-usability-starter-kit

[28] G. Aditama, B. Soedijono, and A. H. Muhammad, "Pengukuran *User Experience* Penggunaan Krapyak-U menggunakan *Framework User Experience Questionaire Plus*," *JATI (Jurnal Mahasiswa Teknik Informatika)*, Vol. 7, No. 2, pp. 1284–1290, 2023, DOI: 10.36040/jati.v7i2.6725.

[29] M. Schrepp and J. Thomaschewski, "*Handbook for the Modular Extension of the User Experience Questionnaire*," 2023. [Online]. Available: www.ueq-online.org