User Experience of a Local Government Website: A Design Thinking and UEQ Approach

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Abstract

This study evaluates the user experience (UX) of a local government website using an integrated Design Thinking and User Experience Questionnaire (UEQ) approach. A mixed-methods design was applied to the Pesisir Barat Regency Government website, combining qualitative usability testing with quantitative UEQ measurement involving 42 respondents. The Design Thinking framework—empathize, define, ideate, prototype, and test—was employed to identify usability issues and guide interface redesign. Pre-redesign results showed that all UEQ dimensions were below the global benchmark average, with notable weaknesses in novelty, navigation clarity, and information structure. Following redesign, all six UEQ dimensions demonstrated substantial improvement, reaching the "excellent" category and ranking within the top 10% of global benchmark results. The findings confirm that user-centered redesign significantly enhances both pragmatic and hedonic quality of e-government websites. This study provides empirical evidence supporting the effectiveness of integrating standardized UX evaluation with Design Thinking to improve digital public service quality.

Keywords: user experience evaluation, design thinking, UEQ, e-government, usability testing

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Introduction

The rapid advancement of digital technologies has significantly transformed the way governments deliver public services, shifting from conventional administrative processes toward digital-based service models commonly referred to as e-government. In this context, local government websites serve as a primary digital interface between public institutions and citizens, facilitating information dissemination, public communication, and access to administrative services. The effectiveness of these platforms is therefore not solely determined by their functional availability but increasingly by the quality of user experience (UX) they provide (Janowski, 2015; United Nations, 2022).

User experience has been widely recognized as a critical factor influencing user satisfaction, trust, and continued use of digital government services. Previous studies indicate that inadequate UX can reduce public trust, limit service adoption, and negatively affect perceptions of government credibility (Carter & Bélanger, 2005; Verkijika & De Wet, 2018). This challenge is particularly relevant for local government websites, which must accommodate diverse user groups with varying levels of digital literacy, information needs, and service expectations.

The Pesisir Barat Regency Government website serves multiple stakeholders, including local residents, tourists, business actors, and public institutions. Such diversity increases the complexity of website design, particularly in terms of navigation structure, information architecture, content readability, and interface responsiveness. Studies examining local government websites in developing regions consistently report recurring usability issues, including unclear navigation paths, inconsistent layouts, and limited mobile optimization, all of which hinder effective access to public information and services (Anthopoulos et al., 2016).

Regional government websites play a strategic role as the primary representation of government digital services in providing public information, promoting regional potential, and providing public access to administrative services. In the context of e-government, government websites play a critical role in promoting transparency, accountability, citizen engagement, and the delivery of high-quality digital public services (Anthopoulos et al., 2016; Janowski, 2015). The Pesisir Barat Regency Government website is utilized by various user groups, such as local residents, students, government officials, business actors, and local and international tourists. This diverse user base requires regional government websites to provide a high-quality user experience, as UX quality plays a critical role in facilitating access to information, improving user satisfaction, and encouraging the use of digital public services (Aladwani, 2013; United Nations, 2022). However, various studies in Indonesia over the past five years have shown that the quality of regional government websites still faces issues with usability and user experience. Ernungtyas, Boer, & Qadrifa (2023) found that less intuitive navigation and inconsistent interfaces result in low user satisfaction. Similar findings have been reported in previous studies, which suggest that poorly structured content, ineffective information architecture, and inadequate navigation design make it difficult for users to locate relevant information and negatively affect the overall user experience (Aladwani, 2013; ISO, 2019).

The quality of local government websites significantly influences citizens' trust, satisfaction, and willingness to engage with digital public services. Poor user experience may discourage citizens from adopting e-government services, whereas positive user experiences can strengthen trust and continued usage intentions (Aladwani, 2013; Verkijika & De Wet, 2018). In the context of regions with tourism potential, the quality of local government websites also influences the region's image and tourist interest, as official websites are often the initial source of information accessed by users (Wijayanti, Y., Suyoto, S., & Hidayat, A. T., 2023).

There is a relationship between website quality and user interaction. According to Shi and Yuan (2019), the usability of web content, personalized services, and emotional states have the greatest impact on users' satisfaction, which provides the relevant theoretical guides on usability construction of websites. To assess and improve the quality of user interaction with digital systems, various UX evaluation methods have been proposed. Among these, the User Experience Questionnaire (UEQ) has gained prominence due to its ability to quantitatively measure both pragmatic and hedonic dimensions of UX using a standardized and benchmark-based approach (Laugwitz et al., 2008; Schrepp et al., 2014;

Schrepp et al., 2017). The UEQ has been widely applied in e-government and public service contexts, demonstrating its effectiveness in capturing user perceptions related to efficiency, clarity, stimulation, and novelty (Schrepp et al., 2014). However, while UEQ is effective in identifying UX strengths and weaknesses, it provides limited guidance on how evaluation results should be translated into concrete design improvements.

Addressing this limitation requires the integration of UX evaluation with a user-centered design methodology capable of generating actionable solutions. Design Thinking offers a human-centered and iterative framework that emphasizes understanding user needs, defining core problems, generating ideas, developing prototypes, and testing solutions in real contexts (Brown, 2019; Dam & Siang, 2020). Prior research has shown that Design Thinking can effectively enhance usability and innovation outcomes in digital public services when applied systematically (Liedtka, 2020; Micheli et al., 2019).

Despite increasing interest in UX evaluation and user-centered design approaches, empirical studies that integrate UEQ-based evaluation with Design Thinking in the context of local government websites remain limited, particularly in developing-country settings. The analysis reveals that effective visual communication relies on the synergy between UI aesthetics and UX functionality, where UI serves as a tangible manifestation of broader UX strategy rather than an isolated discipline (Kholik et al., 2024; Masveta & Manyangara, 2025). Existing research often treats UX measurement and interface redesign as separate activities, resulting in evaluation outcomes that are not fully operationalized into design solutions. To address this gap, this study integrates UEQ-based user experience evaluation with a Design Thinking-driven redesign process to improve the usability and overall UX of a local government website. The findings are expected to contribute empirical evidence and methodological insights for enhancing user-centered digital public services and strengthening e-government implementation. Table 1 shows the research gaps filled by this study.

Table 1. Research Gap

Study	UEQ	Design Thinking	E-Government	Before-After Evaluation
Putra & Santiyasa (2023)	✓	✗	✓	✗
Micheli et al. (2019)	✗	✓	✗	✗
This Study	✓	✓	✓	✓

Literature Review

User Experience in E-Government Websites

User experience (UX) refers to users' perceptions and responses resulting from the use or anticipated use of a system, product, or service, encompassing emotions, beliefs, preferences, and behaviors (ISO, 2019). In the context of e-government, UX has emerged as a critical determinant of citizen satisfaction, trust, and continued use of digital public services. Government websites with poor UX may hinder access to information, reduce transparency, and negatively affect public perceptions of institutional credibility (Carter & Bélanger, 2005; Janowski, 2015).

Previous studies highlight that UX in e-government websites is influenced by both pragmatic qualities, such as usability and efficiency, and hedonic qualities, such as stimulation and attractiveness (Aladwani, 2013). Particularly in local government contexts, users often represent heterogeneous groups with diverse goals, technological skills, and expectations, making UX design and evaluation more complex (Anthopoulos et al., 2016). As a result, systematic UX evaluation is essential to ensure that government websites effectively support public service delivery and citizen engagement.

User Experience Questionnaire (UEQ)

The User Experience Questionnaire (UEQ) is a standardized instrument developed to measure user experience across six dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty (Laugwitz et al., 2008; Schrepp et al., 2014). These dimensions collectively capture both pragmatic aspects of usability and hedonic aspects related to user engagement and emotional response. UEQ has been widely adopted due to its reliability, ease of use, and availability of benchmark data, enabling comparative evaluation across systems and domains.

Several empirical studies demonstrate the effectiveness of UEQ in evaluating e-government platforms and public digital services. Schrepp et al. (2017) emphasize that UEQ provides reliable results even with relatively small sample sizes, making it suitable for applied UX research. Furthermore, Aladwani (2013) showed that citizens' views of e-government interface quality differ across user groups, underlining the need for instruments that capture users' perceptions directly. However, while UEQ effectively identifies UX strengths and weaknesses, it does not prescribe specific design solutions, highlighting the need for complementary design-oriented approaches.

Usability Testing in UX Evaluation

Usability testing is a qualitative evaluation method that examines how users interact with a system to accomplish specific tasks, focusing on effectiveness, efficiency, and satisfaction (Nielsen, 1994). In UX research, usability testing is commonly used to uncover interaction-level issues such as navigation errors, unclear information structure, and interface inconsistencies that may not be fully captured through questionnaire-based evaluation.

In e-government research, usability testing has been shown to provide valuable insights into real user behavior and contextual challenges faced by citizens when accessing digital services (Verkijika & De Wet, 2018). By observing task performance and collecting user feedback, researchers can identify critical usability barriers that affect service accessibility. When combined with quantitative UX instruments such as UEQ, usability testing enhances the depth and validity of evaluation results by linking subjective perceptions to observable interaction problems.

Design Thinking as a User-Centered Design Approach

Design Thinking is a human-centered design methodology that emphasizes empathy with users, iterative problem-solving, and solution prototyping (Brown, 2019). The Design Thinking process typically consists of five stages: empathize, define, ideate, prototype, and test (Dam & Siang, 2020). This approach encourages designers and researchers to deeply understand user needs and contextual constraints before developing and evaluating design solutions.

In the public sector, Design Thinking has gained increasing attention as an effective approach for improving digital public services and fostering innovation (Liedtka, 2020; Micheli et al., 2019). Studies indicate that Design Thinking helps bridge the gap between UX evaluation and practical system improvement by transforming user insights into actionable design interventions. When integrated with UX evaluation methods, Design Thinking supports iterative refinement and continuous improvement of digital systems.

Integration of UEQ and Design Thinking in E-Government Research

Although UEQ and Design Thinking have been widely applied independently, research integrating both approaches within a single evaluation–redesign framework remains limited. Most e-government studies focus either on measuring UX outcomes or on redesigning interfaces without systematic evaluation. Integrating UEQ with Design Thinking enables researchers to quantitatively assess UX, identify underlying usability problems, and iteratively develop design solutions based on empirical evidence.

Recent studies suggest that combining standardized UX measurement with user-centered design methodologies results in more effective and sustainable improvements in digital service quality

(Janowski, 2015). Therefore, adopting an integrated UEQ and Design Thinking approach provides a comprehensive framework for evaluating and enhancing user experience in local government websites.

Methodology

Research Design

This study employed a mixed-methods research design to comprehensively evaluate and improve the user experience (UX) of a local government website. The mixed-methods approach enables the integration of quantitative and qualitative data to provide a more holistic understanding of user perceptions and interaction behaviors than a single-method approach (Creswell & Plano Clark, 2018). Quantitative data were collected using the User Experience Questionnaire (UEQ), while qualitative insights were obtained through usability testing and observations. The overall research process was guided by the Design Thinking framework to ensure a user-centered evaluation and redesign process.

Research Object

The object of this study was the official website of the Pesisir Barat Regency Government, which functions as a digital platform for public information dissemination, administrative communication, and regional promotion. The website serves a heterogeneous user population, including residents, tourists, business actors, and public institutions, making it a suitable case for UX evaluation in an e-government context.

Participants

A total of 42 participants were involved in this study. Participants were selected using purposive sampling to represent diverse user groups who frequently access local government websites. These groups included local residents, civil servants and tourists. Table 2 and Table 3 shows the demographic data of the 42 respondents.

Table 2. Distribution of Respondents by Gender

Category	Number of Respondents	Percentage
Male	20	47.6%
Female	22	52.4%

Table 3. Distribution of Respondents by Age

Category	Number of Respondents	Percentage
< 20 years old	9	21.4%
20-30 years old	30	71.4%
More than 31 years old	3	7.2%

According to Schrepp et al. (2017), a sample size above 30 participants is generally sufficient to produce stable UEQ results. Participants had varying levels of digital literacy to reflect real-world user diversity.

Instruments

User Experience Questionnaire (UEQ)

The User Experience Questionnaire (UEQ) was used to quantitatively measure user experience across six dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty (Laugwitz et al., 2008). The UEQ employs a semantic differential scale ranging from −3 to +3 and includes benchmark data that allow comparison with results from other systems across different domains (Schrepp et al., 2014). The UEQ was administered twice: before and after the website redesign.

Usability Testing

Usability testing was conducted to identify interaction-level usability issues that may not be fully captured through questionnaire-based evaluation. Participants were asked to complete predefined tasks, such as locating specific information, navigating between sections, and accessing public service content. Some of the tasks performed included searching for public service information, searching for tourism information, and accessing news. User behavior, task completion success, errors, and verbal feedback were recorded. Usability testing is widely recognized as an effective method for uncovering usability problems in digital systems (Nielsen, 1994).

Procedure

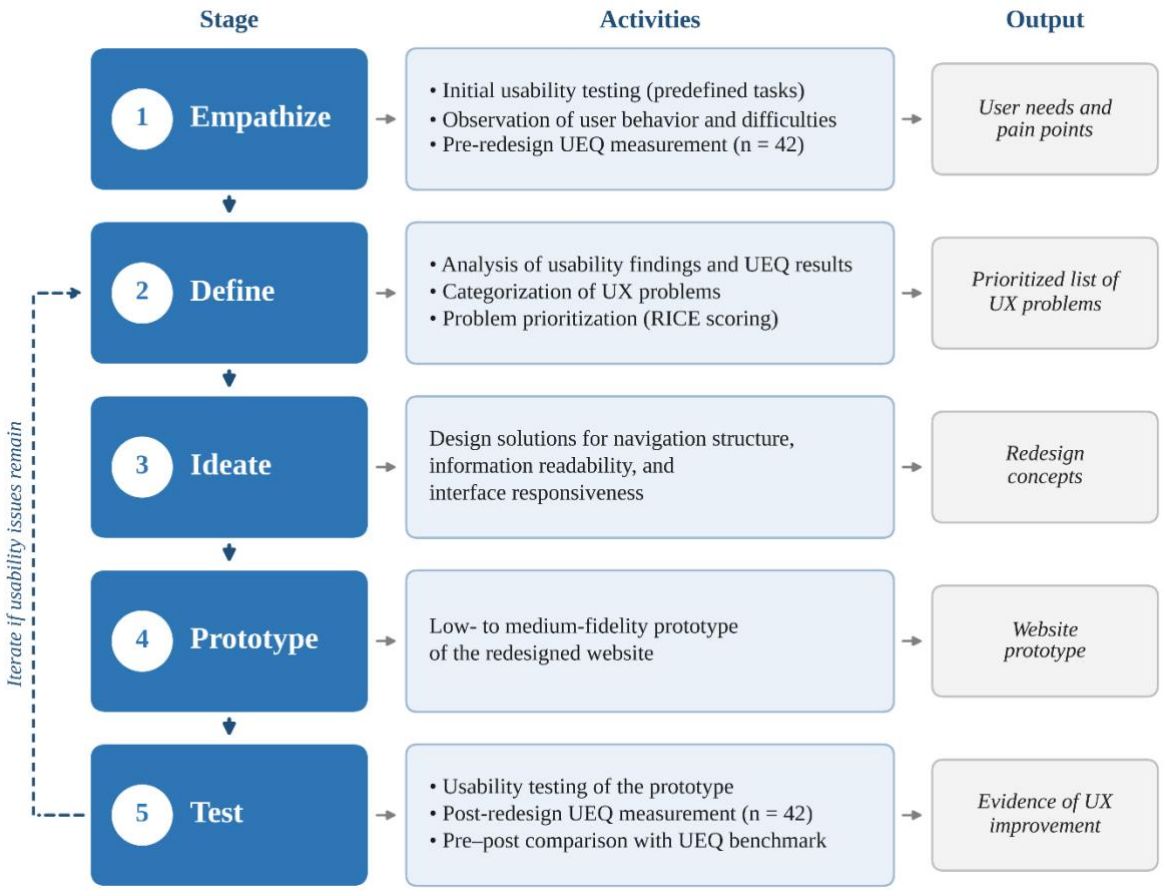


Figure 1. Research Procedure

The research procedure consisted of five main stages aligned with the Design Thinking framework:

1. **Empathize:** Initial usability testing and user observation were conducted to understand user needs, expectations, and difficulties when interacting with the website.
2. **Define:** Identified usability issues and UX problems were analyzed and categorized based on UEQ results and usability findings.
3. **Ideate:** Design solutions were generated to address the identified problems, focusing on navigation structure, information readability, and interface responsiveness.
4. **Prototype:** A low- to medium-fidelity prototype of the redesigned website was developed to represent the proposed improvements.
5. **Test:** The redesigned prototype was evaluated through usability testing and post-redesign UEQ measurement.

This iterative process ensured that evaluation results were directly translated into design improvements. Figure 1 or the chart below shows the stages or research procedures carried out.

Data Analysis

Quantitative data from the UEQ were analyzed using the official UEQ analysis tool to calculate mean scores for each UX dimension. Results were interpreted using the UEQ benchmark categories, including "below average," "above average," "good," and "excellent" (Schrepp et al., 2014). A descriptive comparison between pre- and post-redesign results was conducted to assess UX improvement.

Qualitative data from usability testing were analyzed using thematic analysis, focusing on recurring usability issues related to navigation, information structure, and interface design. Combining quantitative and qualitative findings enhanced the validity of the results by linking user perceptions with observed interaction behavior (Creswell & Plano Clark, 2018).

Ethical Considerations

All participants were informed about the purpose of the study and provided consent prior to participation. Data were collected anonymously and used solely for research purposes to ensure participant confidentiality and ethical compliance.

Results and Discussion

Results of User Experience Evaluation Using UEQ

The initial user experience evaluation was conducted using the User Experience Questionnaire (UEQ) to measure users' perceptions of the Pesisir Barat Regency Government website prior to redesign. The results indicate that all six UEQ dimensions—attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty—were rated below the global benchmark average. Table 4 is a list of questionnaires along with descriptions of the dimensions asked to respondents.

Based on the survey results, the lowest scores were observed in the novelty and perspicuity dimensions (Figure 2), indicating that users perceived the website as insufficiently innovative and lacking clarity, particularly in its navigation structure and information organization. These findings indicate that although the website was functionally accessible, it did not sufficiently support intuitive interaction or positive emotional engagement. According to Schrepp et al. (2014), low scores in perspicuity and novelty often reflect problems related to unclear information architecture and outdated interface design, which aligns with the observed conditions of the website prior to redesign. Figure 2 shows the UEQ measurements before the redesign.

Figure 2 shows that the UEQ level before redesign was below average. All UEQ dimensions—Attractiveness (0.94), Perspicuity (0.88), Efficiency (0.81), Dependability (0.80), Stimulation (0.85), and Novelty (0.40)—are in the Below Average category. Benchmark interpretation shows that approximately 50% of other evaluation results have better scores, while only 25% have.

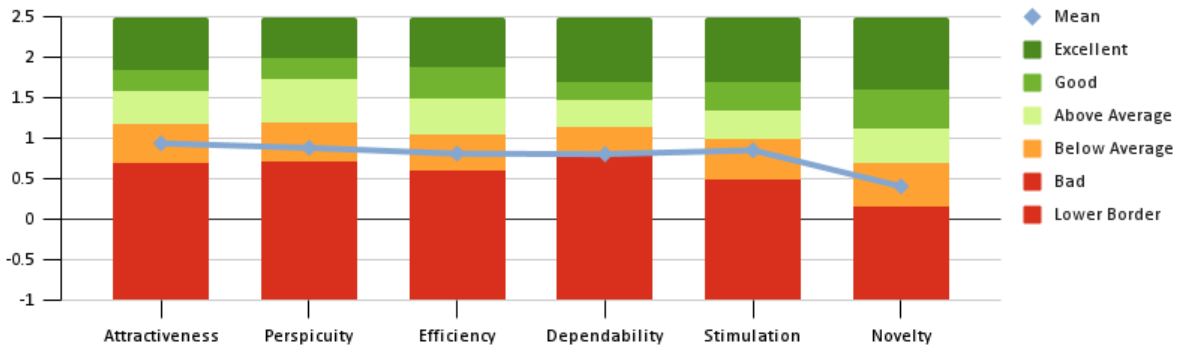


Figure 2. UEQ Before Redesign

Table 4. List of User Experience Questionnaire (Ambarwati & Mustikasari, 2021; Schrepp, 2023)

UEQ Dimensions		1	2	3	4	5	6	7	
Attractiveness	Annoying								Enjoyable
Perspicuity	Not Understandable								Understandable
Novelty	Creative								Dull
Perspicuity	Easy to learn								Difficult to learn
Stimulation	Valuable								Inferior
Stimulation	Boring								Exciting
Stimulation	Not Interesting								Interesting
Dependability	Unpredictable								predictable
Efficiency	Fast								Slow
Novelty	Inventive								conventional
Dependability	Obstructive								supportive
Attractiveness	Good								Bad
Perspicuity	Complicated								Easy
Attractiveness	Unlikable								Pleasing
Novelty	Usual								Leading edge
Attractiveness	Unpleasant								Pleasant
Dependability	Secure								Does not meet expectations
Stimulation	Motivating								Demotivating
Dependability	Meets expectations								Does not meet expectations
Efficiency	Inefficient								Efficient
Perspicuity	Clear								Confusing
Efficiency	Impractical								Practical
Efficiency	Organized								Cluttered
Attractiveness	Attractive								Unattractive
Attractiveness	Friendly								Unfriendly
Novelty	Conservative								Innovative

Table 5. Confidence Intervals Values Before Redesign

Confidence intervals (p=0.05) per scale						
Scale	**Mean**	**Std. Dev.**	**N**	**Confidence**	**Confidence interval**	
Attractiveness	0.937	1.419	42	0.429	0.507	1.366
Perspicuity	0.881	1.274	42	0.385	0.496	1.266
Efficiency	0.810	1.389	42	0.420	0.389	1.230
Dependability	0.804	1.392	42	0.421	0.383	1.225
Stimulation	0.851	1.303	42	0.394	0.457	1.245
Novelty	0.405	1.024	42	0.310	0.095	0.714

Table 5 shows the 95% confidence intervals for each UEQ dimension before the redesign based on 42 respondents. All dimensions have relatively wide confidence intervals, reflecting a fairly high variation in user perceptions. The Attractiveness dimension has a mean of 0.937 with a confidence interval between 0.507 and 1.366, while Perspicuity (0.496–1.266), Efficiency (0.389–1.230), Dependability (0.383–1.225), and Stimulation (0.457–1.245) also show lower and upper limits above zero, indicating a statistically positive evaluation trend. However, the Novelty dimension has the narrowest and lowest confidence interval (0.095–0.714), indicating that although still positive, the novelty and innovation aspects are perceived the weakest and least convincing by users. Overall, the results of these confidence intervals indicate that the pre-redesign user experience tends to be positive, but is not yet strong and

stable, especially in the innovation aspect, thus reinforcing the need for a redesign to improve the overall consistency and quality of the UX.

After redesigning the Pesisir Barat district government website, we conducted another user experience questionnaire with the same 42 respondents. Figure 3 and Table 6 show the comparison of the UEQ scores after the redesign against the global UEQ benchmark. All UEQ dimensions—Attractiveness (2.08), Perspicuity (2.04), Efficiency (2.06), Dependability (2.00), Stimulation (2.01), and Novelty (1.74)—are in the Excellent category, meaning they are all within the top 10% of results based on the UEQ benchmark. This achievement represents a very significant improvement compared to the condition before the redesign, where all dimensions were still in the Below Average category.

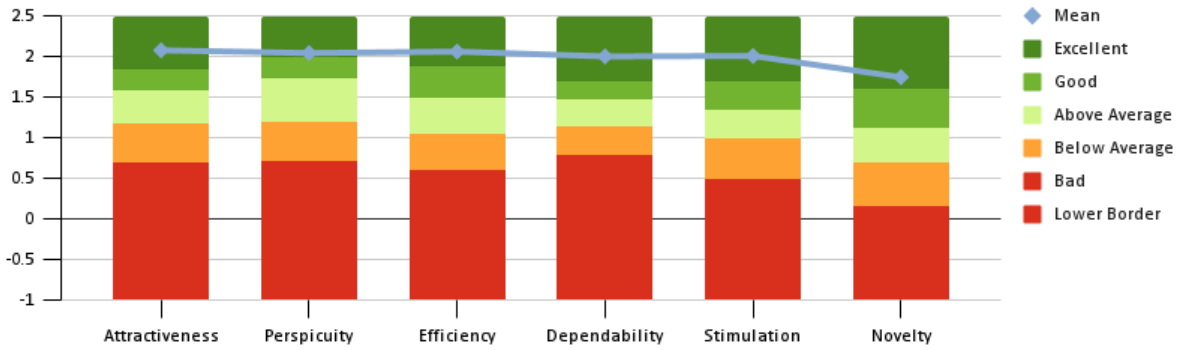


Figure 3. UEQ After Redesign

The visualization in Figure 3 shows that all mean values are well above the Above Average limit and consistently in the Excellent zone, indicating a highly competitive user experience quality globally. Overall, these benchmark results confirm that the redesign process has effectively improved interface quality, workflow efficiency, system reliability, as well as aspects of innovation and usability, enabling the system to deliver a superior user experience and meet international UX standards.

Table 6. Confidence Interval Values After Redesign

Scale	Mean	Comparison to benchmark	Interpretation
Attractiveness	2.08	Excellent	In the range of the 10% best results
Perspicuity	2.04	Excellent	In the range of the 10% best results
Efficiency	2.06	Excellent	In the range of the 10% best results
Dependability	2.00	Excellent	In the range of the 10% best results
Stimulation	2.01	Excellent	In the range of the 10% best results
Novelty	1.74	Excellent	In the range of the 10% best results

Table 7. Confidence Intervals Values After Redesign

Confidence intervals (p=0.05) per scale						
Scale	**Mean**	**Std. Dev.**	**N**	**Confidence**	**Confidence interval**	
Attractiveness	2.075	0.936	42	0.283	1.792	2.359
Perspicuity	2.042	0.924	42	0.279	1.762	2.321
Efficiency	2.060	0.885	42	0.268	1.792	2.327
Dependability	2.000	1.014	42	0.307	1.693	2.307
Stimulation	2.006	1.056	42	0.319	1.687	2.325
Novelty	1.744	1.074	42	0.325	1.419	2.069

Table 7 shows the 95% confidence intervals for each UEQ dimension after the redesign based on 42 respondents. All dimensions have high mean values, with confidence intervals completely above 1.0, indicating a very positive and statistically significant user experience evaluation. The Attractiveness dimension has a mean of 2.075 with a confidence interval between 1.792 and 2.359, while Perspicuity (1.762–2.321), Efficiency (1.792–2.327), Dependability (1.693–2.307), and Stimulation (1.687–2.325) also show relatively narrow and consistent interval ranges. The Novelty dimension has the lowest mean of 1.744 with a confidence interval of 1.419–2.069, but remains in the very positive category, indicating that the novelty and innovation aspects have experienced a significant increase compared to the condition before the redesign. Overall, the results of these confidence intervals indicate that the user experience after the redesign is not only substantially improved, but also more stable and convincing, thus confirming the success of the redesign in improving the overall UX quality.

Usability Testing Findings

Qualitative usability testing revealed several recurring usability issues that explain the low UEQ scores. First, users experienced difficulties in locating specific information due to inconsistent menu structures and unclear labeling. Second, information readability was compromised by dense text, insufficient visual hierarchy, and inconsistent font usage. Third, users reported responsiveness issues when accessing the website on mobile devices, which negatively affected interaction efficiency.

These findings support previous research indicating that navigation complexity and poor content presentation are major barriers to effective use of e-government websites (Nielsen, 1994). The consistency between usability testing results and UEQ outcomes reinforces the validity of the evaluation and highlights the importance of combining quantitative and qualitative methods in UX research.

Design Thinking–Driven Redesign Outcomes

Based on the problems identified during the empathize and define stages, the ideate phase focused on improving navigation clarity, simplifying information structure, and enhancing visual consistency. The redesigned prototype introduced a clearer menu hierarchy, improved typography and spacing, and responsive layout adjustments to support mobile access.

Post-redesign evaluation using UEQ demonstrated a substantial improvement across all UX dimensions. All six UEQ scales reached the “excellent” category and ranked within the top 10% of the global benchmark dataset. The most significant improvements were observed in perspicuity, efficiency, and novelty, indicating that the redesign successfully enhanced both usability and user engagement.

These results confirm that applying Design Thinking as a guiding framework effectively translates UX evaluation findings into actionable design improvements. Similar outcomes have been reported in previous studies, where iterative, user-centered redesign significantly improved system usability and user satisfaction in public digital services (Liedtka, 2020; Micheli et al., 2019). Figure 4 presents a side-by-side comparison of the website appearance before and after the redesign.

As shown in Figure 4, the primary distinction in this redesign lies in the presentation of the news catalog, which has been carefully developed to improve usability, visual appeal, and informational clarity. The interface adopts a color palette inspired by the natural landscape of Pesisir Barat Regency, creating a strong regional identity while enhancing user engagement. A consistent typographic strategy is implemented through the use of one to three complementary fonts with hierarchical size variations, ensuring readability and structured information flow. Modern iconography is incorporated to reinforce visual aesthetics, while a more dynamic layout supports intuitive navigation. The homepage is designed to capture user attention through an attractive arrangement that includes a promotional video, complemented by high-quality hero images and videos—particularly drone footage of Bukit Barisan Selatan National Park and the region’s beaches—to establish an immersive first impression. A dark mode option is also provided to improve viewing comfort during nighttime browsing.

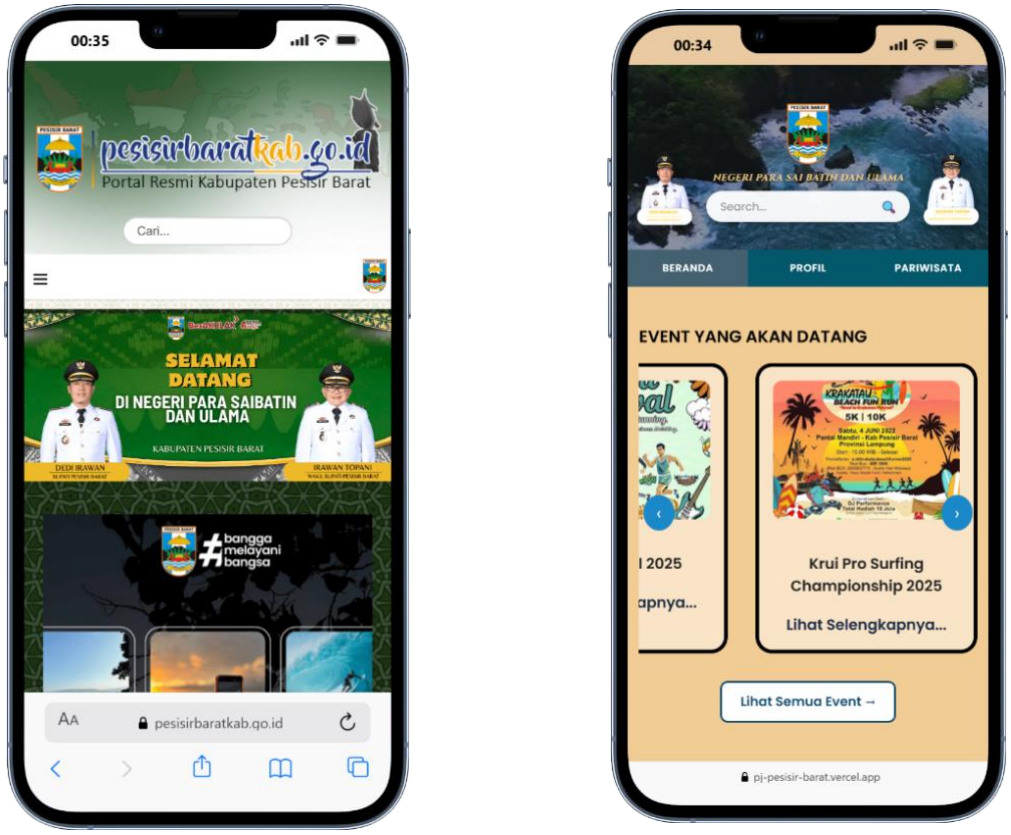


Figure 4. Comparison of Website Appearance Before and After Redesign

From a structural perspective, the platform features clearly defined primary menus—Home, Profile, and Tourism—allowing users to efficiently access essential information. Local government contact details are prominently displayed to support transparency and public communication. The system organizes content into meaningful categories, including regency history and regional symbols, as well as tourism destination classifications such as beaches (e.g., Tanjung Setia), mountains and forests (notably TNBBS), waterfalls, and cultural attractions. An event calendar is integrated to inform visitors about cultural festivals, surfing competitions, coffee harvest seasons, and other local events, thereby promoting regional activities.

To further enhance functionality, the platform integrates external services such as Google Maps and Instagram feeds, enabling users to access geospatial information and real-time social media updates. Automatic language detection based on browser settings is implemented to improve accessibility for international audiences. Additionally, a dedicated policy menu provides access to official government documents of Pesisir Barat Regency, reinforcing institutional credibility. The redesign also emphasizes optimized desktop responsiveness, ensuring that diverse content is presented effectively across larger screen environments. Collectively, these improvements position the platform as a modern, user-centered digital gateway for regional information and tourism promotion.

Discussion

The findings of this study demonstrate that integrating UEQ with usability testing and Design Thinking provides a comprehensive and effective approach to improving user experience in local government websites. The pre-redesign evaluation highlights that technical functionality alone is insufficient to ensure positive user experience, particularly in environments with diverse user groups. Instead, intuitive navigation, clear information presentation, and responsive design are critical determinants of UX quality. The substantial improvement observed in the post-redesign UEQ results suggests that user-centered design interventions can significantly enhance both pragmatic and hedonic aspects of UX. This

finding supports previous research emphasizing that UX quality directly influences citizens' trust and willingness to engage with e-government services (Aladwani, 2013; Carter & Bélanger, 2005). The substantial increase in perspicuity suggests that improvements in information architecture and navigation hierarchy play a critical role in enhancing usability in e-government websites.

From a methodological perspective, this study contributes empirical evidence that UEQ benchmark analysis is a reliable tool for measuring UX improvements when combined with qualitative usability insights. Unlike studies that rely solely on questionnaire data, the integration of Design Thinking ensures that evaluation results are operationalized into concrete design solutions. This approach addresses a common limitation in UX evaluation research, where findings are reported without leading to practical system improvements. However, this study also has limitations. The evaluation was conducted within a single local government website context, which may limit the generalizability of the findings. Future research could apply the proposed evaluation–redesign framework across multiple government websites or incorporate longitudinal analysis to examine long-term user satisfaction and adoption behavior.

Conclusion and Implications

Conclusion

This study evaluated the user experience (UX) of a local government website by integrating the User Experience Questionnaire (UEQ), usability testing, and the Design Thinking approach within a mixed-methods research framework. The initial evaluation revealed that, despite functional availability, the website exhibited low UX quality across all UEQ dimensions, particularly in terms of perspicuity, novelty, and navigation clarity. These findings indicate that technical functionality alone is insufficient to ensure effective digital public service delivery.

Following a user-centered redesign guided by the Design Thinking process, substantial improvements were observed across all UX dimensions. Post-redesign UEQ results reached the "excellent" category and ranked within the top 10% of the global benchmark dataset, demonstrating significant enhancement in both pragmatic and hedonic aspects of user experience. The results confirm that integrating standardized UX evaluation with iterative, empathy-driven design processes effectively translates evaluation insights into measurable UX improvements. Overall, this study provides empirical evidence supporting the value of user-centered design approaches in strengthening the quality of e-government websites.

Implications

Theoretical Implications

This study contributes to the UX and e-government literature by demonstrating the effectiveness of integrating UEQ-based quantitative evaluation with Design Thinking as a user-centered design methodology. The findings extend existing research by illustrating how standardized UX measurement can be operationalized into actionable design interventions, addressing a common limitation in prior UX evaluation studies that focus solely on measurement without redesign.

Practical Implications

From a practical perspective, the results offer actionable insights for local government institutions seeking to improve digital public services. The integrated evaluation–redesign framework can be adopted as a systematic approach to identify usability issues, prioritize design improvements, and enhance user satisfaction. Improving UX quality is expected to increase public trust, accessibility, and engagement with e-government services, particularly for users with diverse digital literacy levels.

Policy Implications

At the policy level, this study highlights the importance of incorporating user-centered design principles into digital government development strategies. Government agencies are encouraged to move beyond compliance-driven website development toward continuous UX evaluation and iterative improvement processes. Embedding UX evaluation frameworks such as UEQ and Design Thinking into digital governance policies can support sustainable e-government transformation and improve the overall quality of public digital services.

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How to cite:

Wonoseto, M. G., Dersa, G., Pratama, I. F., Khoiruzaman, A., Rahmanti, Z. Z. A., Sandji, A. D., & Gunawan, E. H. (2026). User Experience of a Local Government Website: A Design Thinking and UEQ Approach. *Jurnal Sistem Informasi (Journal of Information System)*, *22*(2), 18–31.