



# Improving the POSPAY Mobile Interface Using User-Centered Approach with User Experience Questionnaire Evaluation

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**Abstract**—Digital public service applications require interfaces that are clear, efficient, and consistent to support fast and accurate transactions. In the PT Pos Indonesia service environment, POSPAY users may experience difficulties in locating core services, understanding menu structures, and completing tasks efficiently due to navigation and interface consistency issues. This study aims to improve the POSPAY mobile interface using a user-centered approach and to evaluate user experience using the User Experience Questionnaire. The study involved 20 participants (staff and customers). Observation and semi-structured interviews were conducted to elicit user needs, which were translated into prioritized requirements and implemented in a high-fidelity clickable prototype developed with Figma. Participants completed standardized task scenarios before completing the questionnaire. The results show positive mean scores in five dimensions, with Perspicuity (1.70) and Efficiency (1.55) as the highest, followed by Attractiveness (1.45), Dependability (1.20), and Stimulation (1.05). Novelty (0.65) remained neutral, indicating that the proposed interface is perceived as functional but not strongly innovative. The main contribution of this study is a context-specific requirement set and traceable mapping between user needs and prototype features for POSPAY in a postal service setting, supported by quantitative user experience evidence to prioritize interface refinement and implementation decisions at PT Pos Indonesia.

**Keywords:** User-Centered Approach; User Experience Questionnaire; Mobile Interface; Public Service Application; POSPAY

## 1. INTRODUCTION

The digital transformation of public services, including logistics and postal services, has accelerated rapidly in Indonesia, driven by the growth of e-commerce, cashless transactions, and customers' expectations for fast, reliable, and transparent services. As postal services evolve from conventional counter-based operations to mobile-based services, the quality of interaction between users and applications becomes a decisive factor for adoption and continued use [1]. In practice, users will quickly abandon an application that feels confusing, slow, visually cluttered, or difficult to navigate [2], even if the service behind it is valuable. Therefore, improving the mobile interface and the overall user experience is not merely a cosmetic concern, but a service-quality strategy that directly influences satisfaction, trust, and repeated usage [3]. In a postal office environment, interaction problems can also translate into operational inefficiencies, because users may require staff assistance to complete tasks and this can affect service responsiveness at the counter.

PT Pos Indonesia has responded to these shifts by offering digital services through the POSPAY mobile application, which supports multiple transactions and services for customers. However, like many public-facing service applications, POSPAY may face user experience challenges such as unclear information structure, inconsistent navigation, limited learnability, and insufficient visual hierarchy (issues that can reduce efficiency and user confidence during transactions) [4]. When the interface does not match user mental models [5], users require more time to complete tasks, make more errors, and are less likely to return [6] [7]. In a service setting such as postal offices, these issues can also increase the burden on staff who must assist users, thereby affecting service responsiveness [8]. This is particularly critical for transactional public services, where users expect clarity and correctness to avoid mistakes in payment and service selection. This condition motivates the main problem of this research: how to improve the POSPAY mobile interface so that it better fits user needs and delivers a more positive user experience in a real service environment at PT Pos Indonesia.

A widely accepted approach for improving interactive systems is human-centred design, which emphasizes a systematic process of understanding users, their tasks, and usage contexts, then iteratively producing and evaluating solutions [9]. ISO 9241-210 provides principles and activities for human-centred design throughout the lifecycle of interactive systems [10], highlighting the importance of user involvement and iterative evaluation to achieve usable and useful systems [9]. In line with this standard, this study applies a user-centered approach to guide the improvement of the POSPAY mobile interface based on real user needs and feedback.

To evaluate user experience objectively, this research uses the User Experience Questionnaire (UEQ), a standardized instrument designed to measure user experience efficiently across six dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty [11]. The UEQ has supporting materials such as its handbook and benchmark interpretation guidance, enabling researchers to interpret results not only as raw mean scores but also relative to a broader benchmark dataset [11]. Using UEQ is particularly relevant for mobile service



applications because it captures both pragmatic quality (e.g., clarity and efficiency) and hedonic quality (e.g., stimulation and novelty) [12] [13], which together shape overall acceptance.

Several recent studies demonstrate the relevance of usability and user experience evaluation for POSPAY and similar mobile applications. First, an evaluation of the POSPAY application using usability testing reported that usability testing can reveal key factors affecting ease of use and user satisfaction, indicating the importance of diagnosing interface problems before improvement actions are taken. Second, research applying heuristic evaluation to POSPAY users also emphasizes that usability issues can hinder user task completion and perceived usefulness, suggesting that systematic evaluation methods are necessary for service quality improvement. While these studies provide valuable evidence about usability problems, they primarily focus on evaluating the existing application rather than presenting a full improvement cycle that starts from user needs and ends with validated user experience outcomes.

Beyond POSPAY, recent literature shows how UCD and UEQ can be integrated for redesign and validation in various application domains. A UCD-based UI/UX prototyping study in an e-commerce context demonstrates that structured stages (context understanding, requirement identification, solution creation, and evaluation) can generate prototypes aligned with user priorities and reduce operational errors [14] [15]. Another study, [16] explicitly combines user-centered methods and UEQ to analyze user experience and redesign a mobile interface, indicating that UEQ can serve as a practical quantitative tool to validate improvements. Moreover, [17] redesign study using UEQ to compare user satisfaction before and after interface changes highlights the value of pre–post comparison in demonstrating improvement impacts clearly. In the digital finance domain, [18] study on e-wallet applications combines user experience evaluation with redesign approaches and emphasizes that improving interaction quality can strengthen user trust and engagement. These studies confirm that UCD-like approaches and UEQ-based validation are increasingly used in modern interface improvement research, especially where adoption and satisfaction are critical.

However, the key practical gap in the POSPAY context is not the absence of UCD or UEQ as methods, but the limited availability of a context-specific requirement-to-design mapping grounded in postal service interactions. Prior POSPAY-focused studies tend to emphasize problem identification through usability testing or heuristic evaluation, while studies that combine user-centered improvement cycles with UEQ validation are mostly demonstrated on other applications (e.g., e-commerce platforms, public service apps, or e-wallets) rather than POSPAY in a postal service environment. Therefore, there is a need for research that derives requirements from real PT Pos Indonesia service interactions, translates them into a structured interface solution, and provides quantitative UEQ evidence to prioritize refinement and implementation decisions.

Based on this gap, the objective of this research is to improve the POSPAY mobile interface using a user-centered approach and to evaluate the resulting user experience using UEQ in the PT Pos Indonesia service environment. The contribution of this study is threefold: (1) a context-grounded set of user requirements derived from staff and customer interactions in postal services, (2) a traceable mapping between user needs and prototype interface features to reduce subjectivity in redesign decisions, and (3) UEQ-based results that identify which user experience dimensions are strong and which require further refinement to support implementation priorities. This paper is organized as follows: Section 2 describes the research methodology and the applied UCD stages and UEQ evaluation procedure, Section 3 presents results and discussion, and Section 4 concludes the study and outlines limitations and future work directions.

## 2. RESEARCH METHODOLOGY

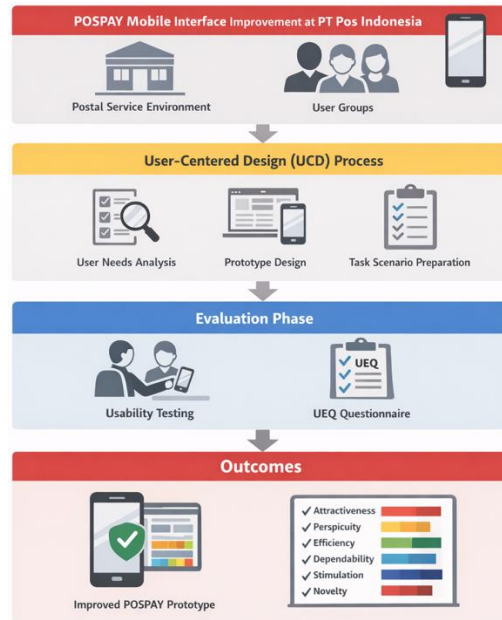
This study employed a user-centered research approach to improve the POSPAY mobile interface in the service context of PT Pos Indonesia. The methodology integrates a user-centered approach based on human-centred design principles [19] and applies the User Experience Questionnaire (UEQ) [20] as a quantitative instrument to evaluate user experience after interaction with the proposed interface prototype. In this study, UEQ was administered to evaluate the experience profile of the proposed prototype; a direct UEQ baseline comparison with the existing POSPAY interface was not conducted. Therefore, the results should be interpreted as prototype evaluation rather than a measured pre–post improvement. The overall research framework and methodology flow are illustrated in Figure 1, which shows the sequence from problem identification and requirement elicitation to prototyping and UEQ-based evaluation.

### 2.1 Research Stages

This research was conducted through four main stages aligned with user-centered principles, as illustrated in Figure 1 and summarized in Table 1.

The first stage was context understanding, conducted through preliminary observations and short semi-structured interviews with representative users in the PT Pos Indonesia service environment. This stage aimed to identify practical issues during POSPAY usage, including navigation difficulties, information clarity, and task flow constraints that affect transaction completion. The outputs of this stage were a contextual problem list and insights regarding user characteristics and the operational environment.

The second stage was user requirement identification, where findings from observations and interviews were translated into prioritized requirements. Requirements were formulated to reflect user expectations in mobile service applications, such as ease of locating core services, consistency of menus and labels, visual hierarchy, and trust-related interface elements. To reduce subjectivity, requirement prioritization considered two explicit criteria: frequency of occurrence in user feedback and task criticality for completing core POSPAY journeys (e.g., service selection and transaction review). At this stage, representative tasks were also defined to simulate typical POSPAY usage. The task scenarios used for evaluation are provided in Table 3.



**Figure 1.** Research Framework and Methodology Flow

**Table 1.** Research Stages and Outputs

Stage (UCD-Based)	Main Activities	Data/Input	Output/Deliverables
1. Context Understanding	Field observation of POSPAY usage context; semi-structured interviews with staff and customers; identification of pain points in navigation, task flow, and interface consistency	Observation notes; interview responses; initial issue list	Context-of-use description; user profiles; list of usability/UX issues; initial problem statement
2. User Requirement Identification	Translate findings into user needs; classify and prioritize requirements; define core user tasks for evaluation	Issue list from Stage 1; stakeholder/user expectations	Prioritized requirement list (functional + UI/UX); task definition (T1–T4); requirement-to-screen mapping
3. Solution Development (Modeling and Prototyping)	Create use case diagram; develop wireframes; build high-fidelity clickable prototype in Figma; internal review for consistency	Requirement list; task flows; UI guidelines/visual identity	Use case model; wireframes; high-fidelity prototype (clickable); finalized key screens (login/registration, home/dashboard, service menu, favorites, history)
4. Evaluation (UEQ-Based)	Participants perform standardized task scenarios; administer UEQ after tasks; collect short feedback/comments	Prototype; task scenario sheet; UEQ responses	UEQ dataset; mean score per UEQ dimension; interpretation (positive/neutral/negative); qualitative feedback themes and refinement notes

The third stage was solution development, which produced an improved interface based on the identified requirements. The design process began with system modeling (use case diagram) to confirm functional scope and user interactions. Next, wireframes were created as low-fidelity layouts to establish information structure and navigation flow. Finally, a high-fidelity clickable prototype was developed using Figma to represent realistic interaction, typography, visual hierarchy, and consistent UI components. The prototype focused on key screens

representing core user journeys, such as login, registration, home/dashboard, service menu navigation, favorites, and transaction history.

The fourth stage was evaluation, conducted using UEQ after participants completed standardized task scenarios. Participants interacted with the clickable prototype by following the predefined tasks (Table 3), then completed the UEQ instrument to measure user experience across six dimensions shown in Figure 2.



**Figure 2.** User Experience Questionnaire (UEQ) Dimensions

## 2.2 Research Design and Participants

This research used a context-based evaluation design to develop and evaluate the POSPAY mobile interface within the real service environment of PT Pos Indonesia. The design emphasizes a formative user experience evaluation of the proposed prototype in a postal service setting, rather than statistical generalization to a national POSPAY user population. Participants were recruited from two relevant user groups to represent real POSPAY usage in the postal service setting: (1) postal service staff and (2) customers. Staff participants were included because they understand service workflows and frequently assist users, while customer participants represent end-users conducting transactions independently. Recruitment used convenience sampling on-site during the study period, while applying screening criteria to ensure participants could complete the evaluation procedure reliably.

The inclusion criteria were: (1) aged 17 years or above, (2) able to operate a smartphone (basic navigation such as tapping, scrolling, and switching menus), (3) willing to complete all task scenarios and fill in the UEQ questionnaire, and (4) able to provide responses independently. Participants who did not complete task scenarios or UEQ items were excluded from analysis. A summary of participant characteristics is presented in Table 2.

**Table 2.** Participant Profile

Category	Group	n	Percentage
Role	Staff	8	40%
	Customer	12	60%
Age Range	17–25	6	30%
	26–35	7	35%
	36–45	5	25%
	>45	2	10%
Smartphone Experience	1–3 years	4	20%
	4–7 years	9	45%
	>7 years	7	35%
POSPAY Experience	Frequent ( $\geq 1 \times / \text{week}$ )	5	25%
	Occasional ( $1-3 \times / \text{month}$ )	7	35%
	Rare ( $\leq 3 \times / \text{year}$ )	6	30%
	First-time user	2	10%
Experience with Similar Apps	Yes	18	90%

Regarding sample size, this study involved  $n = 20$  participants. This number was used to support formative evaluation and to obtain stable mean patterns across UEQ dimensions within the studied context, as recommended in UEQ guidance that measurement precision depends on sample size and can be planned using UEQ analysis tools [20]. Because the sampling method was convenience-based and the study did not include a baseline comparison with the existing interface, the findings are interpreted as evidence of the prototype’s experience profile in the PT Pos Indonesia service environment, not as generalizable population-level claims.

## 2.3 Instruments and Data Collection

Data Data collection in this study was conducted using four main instruments to ensure that the interface improvement process was based on user needs and that the evaluation results reflected real interaction experience. The instruments include qualitative tools for understanding user problems and requirements, as well as quantitative tools for measuring user experience outcomes after interacting with the prototype.

First, an observation sheet and a semi-structured interview guide were used during the early stage to capture contextual issues and user expectations in the PT Pos Indonesia service environment. Observations focused on



how users typically access services, locate menus, and complete transactions using mobile applications, including obstacles related to navigation clarity, information organization, and interaction consistency. Interviews were conducted to confirm observed issues and to explore user expectations regarding an ideal POSPAY interface, such as preferred menu structure, clarity of labels, ease of finding core services, and interface elements that increase trust during transactions.

Second, a requirement list was used to document, classify, and prioritize user needs derived from the observation and interview findings. Requirements were grouped into practical categories such as navigation and information structure, visual hierarchy, content clarity, and task flow efficiency. To support traceability in the design process, each requirement was linked to the corresponding prototype component or screen that was intended to address it. This requirement list served as the main reference when developing the use case model, wireframes, and the high-fidelity prototype.

Third, a task scenario sheet was prepared to ensure consistent and comparable interaction during the evaluation stage. All participants were asked to complete the same task scenarios using the clickable prototype before answering the UEQ. The tasks were designed to represent typical POSPAY user journeys and core functions relevant to the service environment, including authentication, accessing service menus, managing favorites, and reviewing transactions. The standardized tasks reduce variability in participant experience and ensure that UEQ ratings are based on actual usage rather than subjective first impressions. The task scenarios used in this study are presented in Table 3.

Table 3. Task Scenarios for Prototype Evaluation

Task ID	Task Scenario	Brief Instruction	Expected Output (Success Criteria)
T1	Login/Registration	Log in to the app (or create an account)	User reaches the home/dashboard screen
T2	Access Service Menu	Find a specific service/payment category from the menu	Correct service category is located and opened
T3	Favorite Transaction	Save a transaction as a favorite (or use an existing favorite)	Favorite transaction is successfully saved/used
T4	Transaction History	Open and review transaction history	History page is displayed and can be browsed

Fourth, the User Experience Questionnaire (UEQ) was used to collect quantitative user experience data after participants completed the task scenarios. UEQ captures user experience across six dimensions, namely attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty [21]. Participants filled in the UEQ immediately after finishing the tasks to ensure that responses reflect recent interaction experience with the prototype. The six UEQ dimensions evaluated in this study are shown in Figure 2.

### 2.4 UEQ Data Processing and Analysis

UEQ responses were processed using the standard UEQ scoring procedure to ensure consistent and comparable interpretation across the six user experience dimensions. Each UEQ item consists of a pair of opposite adjectives (semantic differential) [22]. Participant responses were first converted into numerical values according to the UEQ coding scheme, where each item is transformed into a score on a scale from -3 (most negative) to +3 (most positive). The scored items were then grouped into their corresponding UEQ dimensions, namely attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty.

For each participant, an intermediate mean score was computed for every UEQ dimension by averaging the scores of all items that belong to that dimension. Next, the overall mean score per dimension was calculated by averaging the dimension scores across all participants. This produces one mean value for each UEQ dimension that represents the collective user experience perception of the proposed POSPAY interface prototype. The computation process follows the general mean calculation in Equation (1) and Equation (2).

$$\bar{x}_d = \frac{1}{k} \sum_{j=1}^k x_j \tag{1}$$

$$\bar{X}_d = \frac{1}{n} \sum_{i=1}^n \bar{x}_{d,i} \tag{2}$$

where  $\bar{x}_d$  is the mean score for dimension d for one participant, k is the number of items in that dimension,  $x_j$  is the score of item j,  $\bar{X}_d$  is the overall mean score for dimension d across participants, and n is the number of participants.

The analysis included descriptive statistics for each UEQ dimension, primarily the mean values, to identify which dimensions achieved the most positive user experience outcomes and which dimensions indicated potential improvement needs. The score patterns were then interpreted to assess the balance between pragmatic quality (perspicuity, efficiency, dependability) and hedonic quality (stimulation, novelty), while attractiveness reflects the overall impression of the interface.

To provide a clear interpretation of the UEQ mean values, this study applied a commonly used UEQ interpretation guideline based on the polarity of the scale. Mean values above +0.8 indicate a positive evaluation, values between -0.8 and +0.8 indicate a neutral evaluation, and values below -0.8 indicate a negative evaluation. The interpretation rule is presented in Table 4 to support transparency and replicability.

**Table 4.** UEQ Score Interpretation

Mean Score Range	Interpretation	Meaning in This Study
> +0.8	Positive	Users perceived the prototype experience as clearly favorable on the evaluated dimension
-0.8 to +0.8	Neutral	Users perceived the dimension as acceptable but not strongly positive; improvement may still be needed
< -0.8	Negative	Users perceived clear issues on the evaluated dimension; improvement is required

In addition to quantitative results, short participant comments collected during the evaluation session were used to support interpretation, particularly for explaining why certain dimensions scored higher or lower. These comments were summarized into recurring themes (for example, “menu labels are clearer” or “some features are still difficult to find”) and were used as qualitative evidence to complement the UEQ statistics and to generate concrete recommendations for further refinement.

**2.5 Tools and Prototype Output**

This study used several tools to support the development and evaluation process of the proposed POSPAY mobile interface. The main tool for interface development was Figma, which was utilized to create low-fidelity wireframes and a high-fidelity clickable prototype [23]. Wireframes were developed to define layout structure, navigation flow, and information hierarchy before applying visual styling. After the wireframe stage, a high-fidelity prototype was produced to simulate realistic user interaction, including consistent typography, spacing, color usage, and UI components that represent the final interface experience. The clickable prototype enabled participants to complete task scenarios in a controlled manner during the UEQ evaluation stage.

In addition to Figma, documentation tools were used to ensure traceability between user needs and design solutions. These tools supported the preparation and management of: (1) observation and interview notes, (2) the prioritized requirement list, (3) task scenario sheets, and (4) UEQ response records. These documents were necessary to maintain consistency in the evaluation procedure and to enable systematic analysis of the collected data. To clarify the relationship between the research stages and the resulting outputs, the applied user-centered stages and their corresponding deliverables are summarized in Figure 3.



**Figure 3.** User Centered Design (UCD) Stages Applied in This Study

The primary outputs of this methodology consist of two main deliverables. The first deliverable is a proposed POSPAY interface prototype that reflects user requirements and the service workflow context at PT Pos Indonesia. This prototype represents the tangible design solution generated through the UCD stages and includes key screens such as login/registration, home/dashboard, service menu navigation, favorites, and transaction history. The second deliverable is a set of UEQ-based user experience results, reported as mean scores across the six UEQ dimensions. These results provide quantitative evidence of the prototype’s experience profile and highlight dimensions that should be prioritized for refinement, rather than claiming measured pre-post improvement over the existing interface.



### 3. RESULT AND DISCUSSION

This section presents the results of the user-centered interface improvement process for POSPAY and discusses the UEQ evaluation outcomes. The results are organized into three parts: (1) outputs from the user needs and requirement stage, (2) the proposed interface prototype, and (3) UEQ-based user experience findings and their implications. Because the study did not include a UEQ baseline measurement on the existing POSPAY interface, the results should be interpreted as an evaluation of the proposed prototype rather than a measured pre–post improvement.

#### 3.1 User Needs and Requirement Outputs

The context understanding stage was carried out through direct observation of the postal service environment and semi-structured interviews with representative users (staff and customers). The purpose of this stage was to identify practical barriers that users experience when interacting with POSPAY-related services, especially in situations where transactions must be completed quickly and accurately. Across participants, three recurring issue categories consistently appeared: (1) navigation clarity, (2) task flow efficiency, and (3) interface consistency.

First, navigation clarity issues were frequently reported when users attempted to locate core services and understand menu structures. Users stated that service categories were not always grouped intuitively, and that some labels were ambiguous or unfamiliar to first-time users. This condition increases cognitive load because users must spend additional time scanning menus, guessing which category contains a service, or returning to previous pages after choosing the wrong menu. In the postal service context, this becomes critical because unclear navigation may lead to delayed transactions and increased reliance on staff assistance.

Second, task flow efficiency issues emerged during activities such as login/registration, selecting a service, and completing or reviewing transaction-related information. Several participants indicated that the steps required to reach frequently used services should be more direct and that recurring transactions should be easier to access without repeating the same navigation steps. From the staff perspective, inefficient user flows are problematic because they slow down service operations and may cause user frustration, especially during peak service hours.

Third, users highlighted interface consistency issues, including inconsistent placement of buttons, variations in typography and spacing, and differences in visual hierarchy between screens. Such inconsistencies reduce learnability because users cannot rely on stable patterns as they move across pages. In mobile service applications, interface consistency is essential for trust and predictability, particularly for transactional systems where users need confidence that they are selecting the correct service and performing the correct action.

All identified issues were translated into user needs and then formalized into prioritized requirements to guide prototype development. To make prioritization transparent, each requirement was scored using two criteria: (1) Frequency of mention in interviews/observations (1–3) and (2) Task criticality for completing core POSPAY tasks (1–3). A Priority Score was computed as Frequency + Criticality (range 2–6), where scores 5–6 were categorized as High, 3–4 as Medium, and 2 as Low. To maintain traceability, each requirement was explicitly linked to a design response in the prototype, including the affected screen(s) and the UI element(s) used to address the problem. The finalized requirement set and corresponding design responses are presented in Table 5.

Table 5. Prioritized User Requirements and Design Responses

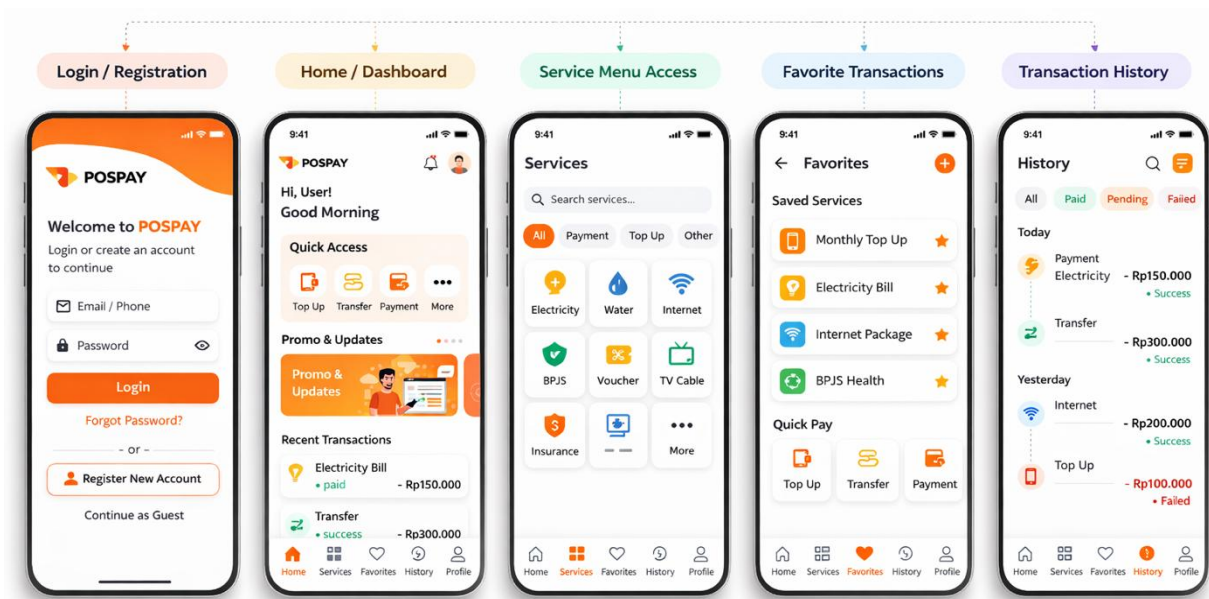
Req. ID	Issue Category	User Need / Requirement Statement	Frequency (1–3)	Task Criticality (1–3)	Priority Score (2–6)	Priority	Design Response (Prototype Implementation)	Affected Screen(s)
R1	Navigation clarity	Users need core services to be easy to find from the main menu	3	3	6	High	Restructured menu hierarchy with clear grouping of service categories	Home/Dashboard, Service Menu
R2	Navigation clarity	Users need clear and familiar labels for service categories and actions	3	3	6	High	Simplified labels, improved wording consistency across menus and buttons	Home/Dashboard, Service Menu, Favorites
R3	Task flow efficiency	Users need fewer steps to access frequently used services	3	2	5	High	Added shortcuts/quick access section and improved navigation flow	Home/Dashboard
R4	Task flow efficiency	Users need a faster way to repeat recurring transactions	2	3	5	High	Favorites feature made more visible and reachable with fewer taps	Favorites, Home/Dashboard
R5	Task flow efficiency	Users need transaction results and history to be easy to access and review	2	3	5	High	Transaction history placed in a clearer location with improved list readability	Transaction History
R6	Interface consistency	Users need consistent button	2	2	4	Medium	Standardized button styles and placement	All key screens

Req. ID	Issue Category	User Need / Requirement Statement	Frequency (1–3)	Task Criticality (1–3)	Priority Score (2–6)	Priority	Design Response (Prototype Implementation)	Affected Screen(s)
R7	Interface consistency	placement and action patterns across screens Users need consistent typography, spacing, and visual hierarchy	2	2	4	Medium	rules (primary vs secondary actions) Unified typography scale and spacing system to highlight key information	All key screens
R8	Trust and clarity	Users need clearer visual cues that actions are safe and correct	1	3	4	Medium	Added confirmation cues and clearer status feedback (e.g., page titles, icons)	Service Menu, Transaction History
R9	Learnability	First-time users need guidance to understand menu structure quickly	2	1	3	Medium	Improved headings and grouping indicators; optional onboarding cue (if available)	Home/Dashboard

The requirements emphasized: (1) simplifying access to core services, (2) improving label clarity and menu grouping, (3) strengthening visual hierarchy to reduce confusion, and (4) ensuring consistent UI components across screens to improve learnability.

### 3.2 Improved POSPAY Interface Prototype

The interface solution was implemented as a high-fidelity clickable prototype in Figma. The prototype focused on key user journeys aligned with the task scenarios, including login/registration, home/dashboard navigation, access to service menus, favorite transactions, and transaction history. The main screens of the prototype are shown in Figure 4.



**Figure 4.** Key Screens of the Improved POSPAY Prototype

To improve usability, the prototype applies a consistent layout and interaction pattern across screens, including standardized navigation elements and action buttons. Several design responses were implemented to directly address the prioritized requirements (Table 5), including: (1) clearer grouping of service categories to support faster scanning, (2) simplified and consistent labels to reduce ambiguity for first-time users, (3) quick access shortcuts on the home/dashboard to reduce steps for frequent services, (4) improved visibility of favorites to support recurring transactions, and (5) clearer transaction history structure to support review and verification. In addition, information hierarchy was strengthened using clearer headings and spacing so users can identify services and transaction-related information more quickly.

### 3.3 UEQ Results

After completing the standardized task scenarios (T1–T4), participants filled in the User Experience Questionnaire (UEQ). All UEQ responses were processed and aggregated to obtain the mean score for each of the six UEQ dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. The mean scores and their interpretations based on the rule in Table 4 are presented in Table 6, while the UEQ dimension profile is summarized visually in Figure 5.

**Table 6.** User Experience Questionnaire (UEQ) Mean Scores per Dimension (n = 20)

UEQ Dimension	Mean Score	Interpretation (Table 4)
Attractiveness	1.45	Positive
Perspiciuity	1.70	Positive
Efficiency	1.55	Positive
Dependability	1.20	Positive
Stimulation	1.05	Positive
Novelty	0.65	Neutral



**Figure 5.** User Experience Questionnaire (UEQ) Dimension Profile of the Improved POSPAY Prototype

The results indicate that the prototype achieved its strongest performance in Perspiciuity and Efficiency, suggesting that participants perceived the interface as easy to understand and supportive of fast task completion. Dependability and Attractiveness also obtained positive scores, indicating that the interaction was perceived as reasonably predictable and the overall impression of the interface was favorable. The lowest score was found in Novelty, which remained in the neutral range, indicating that although the prototype was perceived as functional and clear, it was not strongly perceived as innovative or unique. Overall, the UEQ profile is positive in five dimensions and neutral in one dimension (Novelty), which supports a nuanced interpretation rather than a uniformly positive claim.

To strengthen interpretation, participant comments collected during the evaluation were summarized into themes. Key qualitative feedback highlighted that menu categories are clearer, navigation feels more direct with fewer steps to reach services, and some labels still need simplification for first-time users. These comments align with the UEQ pattern by explaining why pragmatic dimensions scored higher, while novelty remained comparatively lower.

### 3.4 Discussion

This study indicates that applying user-centered stages in a real postal service context can produce a proposed interface prototype that aligns with user expectations and yields a positive user experience profile in most UEQ dimensions. The UEQ results (Table 6) show strong scores in Perspiciuity (1.70) and Efficiency (1.55), suggesting that participants found the prototype clear and supportive of fast task completion. These outcomes are consistent with the requirement-driven design responses in Table 5, particularly those related to menu grouping, label clarity, and shortened access paths to core services.

From an operational perspective, higher scores in pragmatic dimensions imply potential service benefits. In PT Pos Indonesia’s environment, users who can locate features quickly and complete transactions with fewer steps may require less staff assistance and experience fewer errors, which can contribute to smoother service flow. The positive score in Dependability (1.20) also suggests that users perceived the interaction as reasonably predictable, an important factor for transactional services where trust and correctness are prioritized.

In contrast, hedonic dimensions showed more moderate results. Stimulation (1.05) remained positive, while Novelty (0.65) was neutral. This pattern suggests that users viewed the prototype as functional and reliable, but not strongly innovative. For public service applications, this may reflect user priorities that emphasize clarity and reliability over novelty; however, it also indicates room for design refinement to improve the perceived modernity of the interface without compromising trust.

Importantly, because this study did not measure UEQ on the existing POSPAY interface as a baseline, the findings should not be interpreted as an empirical pre–post improvement over the current application. Instead, the contribution lies in providing a context-grounded requirement set, a traceable requirement-to-design mapping, and UEQ evidence describing the experience profile of the proposed prototype in a postal service setting. This limitation also motivates future work to include baseline comparison and broader sampling across multiple service locations.



Based on the UEQ pattern, refinement priorities can be proposed as follows. First, although Perspicuity is positive, clarity for first-time users can be improved through simpler terminology, consistent icon-label pairing, and brief onboarding cues. Second, Dependability can be strengthened by adding clearer confirmation states, progress indicators, and error-prevention mechanisms during critical transaction steps. Third, to improve Novelty, the interface can adopt more modern visual components and clearer visual differentiation between service categories, and optionally introduce light personalization features, while maintaining a consistent and trustworthy design style. Overall, the results provide actionable guidance for refining the prototype and for informing implementation decisions in the PT Pos Indonesia service context.

## 4. CONCLUSION

This study applied a user-centered approach to develop a proposed POSPAY mobile interface prototype in the service context of PT Pos Indonesia and evaluated the resulting user experience using the User Experience Questionnaire. The user-centered stages enabled the research to identify key user needs related to navigation clarity, task flow efficiency, and interface consistency, and to translate these needs into a high-fidelity clickable prototype developed in Figma. The UEQ results indicate that the proposed prototype showed positive mean scores in five dimensions, particularly in pragmatic dimensions. The highest scores were achieved in Perspicuity (1.70) and Efficiency (1.55), showing that users perceived the interface as easier to understand and more supportive of fast task completion. Attractiveness (1.45), Dependability (1.20), and Stimulation (1.05) also obtained positive evaluations, suggesting that the prototype was generally appealing, predictable, and reasonably engaging. However, Novelty (0.65) remained neutral, indicating that the prototype was perceived as functional but not strongly innovative. These findings provide practical evidence to prioritize refinement and implementation decisions for POSPAY in a postal service setting; however, the study is limited because the evaluation was conducted on a prototype (not a fully deployed application), involved a single service environment with a convenience sample ( $n = 20$ ), and did not include a baseline comparison with the existing POSPAY interface. Future work should therefore conduct pre–post measurement against the current application, involve broader sampling across multiple service locations, and refine design elements to improve perceived novelty while maintaining reliability and clarity for transactional public services.

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