

Usability Evaluation and Alternative Interface Design Recommendations for the GoFood Merchant Application

Singgih Rochmad Saputro¹, Harry Budi Santoso²

^{1,2}Master of Information Technology, Faculty of Computer Science, Universitas Indonesia, Indonesia

Article Info

Article history:

Received Dec 22, 2025

Revised Jan 02, 2026

Accepted Jan 20, 2026

Keywords:

usability evaluation,
user-centered design,
system usability scale (SUS),
open-ended question,
Shneiderman's eight golden
rules of interface design,
mobile application,
user interface (UI)

ABSTRACT

The GoFood Merchant application serves as a critical platform for merchant onboarding and product activation within Indonesia's digital food delivery ecosystem. Despite its key role, user feedback indicates persistent usability issues, particularly in corporate onboarding. This study evaluated and improved the usability of GoFood Merchant by focusing on workflow complexity, information clarity, and interface consistency. A mixed-methods exploratory case study was conducted involving quantitative and qualitative data collected from merchant owners, merchant staff, and IT experts. Quantitative data were obtained using the system usability scale (SUS) questionnaire, while qualitative data were collected through task-based usability testing, open-ended questions, and an evaluation based on heuristic design principles derived from Shneiderman's eight golden rules of interface design. The initial evaluation of the existing ("as-is") interface yielded an SUS score of 63.83, indicating usability below the accepted benchmark, and revealed 10 consensus usability issues related to complex task flow, unclear system feedback, and inconsistent interface elements. Based on these findings, a redesign was developed using user-centered design (UCD) principles through iterative low-fidelity and high-fidelity prototyping. The redesigned ("to-be") prototype was subsequently evaluated using the same instruments. Usability was significantly improved, with an SUS score of 85 and average principle-based evaluation ratings above 4.0 across all interface design principles derived from Shneiderman's eight golden rules. These findings demonstrate that systematic usability evaluation combined with iterative UCD-based redesign can effectively enhance user satisfaction, efficiency, and comprehension in complex onboarding systems. This study provides validated design recommendations for improving GoFood Merchant onboarding and contributes empirical evidence for usability-driven interface redesign in large-scale mobile platforms.

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Singgih Rochmad Saputro,
Master of Information Technology, Faculty of Computer Science,
Universitas Indonesia,
Jl. Lingkar, Pondok Cina, Kecamatan Beji, Kota Depok, Jawa Barat
Email: singgih.rochmad@gmail.com

1. INTRODUCTION

The rapid advancement of digital transformation in Indonesia has significantly reshaped various sectors, including transportation, finance, and food delivery services. Digital platforms are no longer merely supporting tools but have become the primary infrastructure through which services are delivered, accessed, and managed. Indonesia now has one of the largest digital economies in Southeast Asia, supported by a strong startup ecosystem and high mobile application (app) adoption rates [1]. Within this landscape, PT GoTo Gojek Tokopedia has emerged as one of the most influential technology companies, integrating ride-hailing, food delivery, logistics, digital payments, and merchant services into a single digital ecosystem.

Since its establishment in 2010, PT GoTo Gojek Tokopedia has experienced substantial growth, with more than 190 million downloads of its app since 2015, over two million driver-partners, and more than 900,000 registered merchant partners [2]. In the online food delivery sector, its GoFood service has consistently demonstrated strong market performance. Recent survey data indicate that GoFood leads the Indonesian online food delivery market with a 38% market share, followed by ShopeeFood (29%) and GrabFood (27%) [3]. This dominance underscores the strategic importance of the GoFood Merchant app as a core operational tool for food business partners within the broader GoTo digital ecosystem. The app's position within this ecosystem is illustrated in Figure 1, which highlights its role as the primary interface connecting food merchants with consumers and delivery partners.

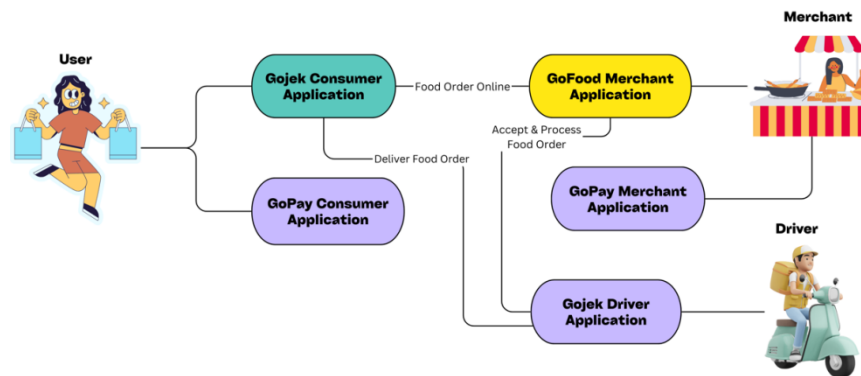


Figure 1. GoTo Ecosystem and the Role of the GoFood Merchant App

The GoFood Merchant app functions as an end-to-end platform that enables merchants to manage business registration, corporate onboarding, menu configuration, order processing, financial settlement, and customer engagement. For corporate and multi-outlet merchants, onboarding involves several mandatory stages, including account creation, Know Your Customer verification, business identity submission, legal document upload, and service activation. While these steps are essential for regulatory compliance and data validity, they also introduce substantial complexity, particularly for users with limited digital literacy or unfamiliarity with corporate registration procedures.

Despite the key role of the GoFood Merchant app, user feedback indicates persistent usability issues with its onboarding flow. Analysis of Google Play Store reviews shows that during February–April 2025, 667 out of 1,467 user reviews (approximately 45%) rated the app between one and three stars [4]. Furthermore, longitudinal analysis of user ratings reveals a downward trend since the app's initial launch in July 2017, declining from a historical average rating of 4.1. As illustrated in Figure 2, the average user rating of the app showed notable variation between October 2024 and April 2025, with values ranging between 3.04 and 3.58. This variation indicates inconsistent user perception over time and suggests the presence of usability challenges warranting further investigation, particularly in critical processes such as merchant onboarding.

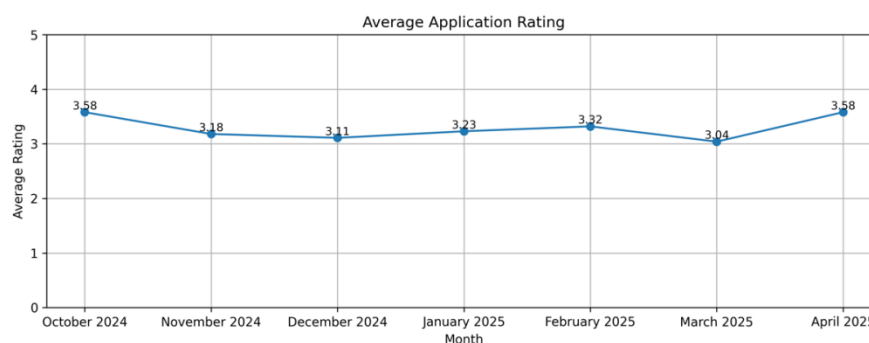


Figure 2. Average GoFood Merchant Rating on Google Play Store (October 2024–April 2025)

Representative user comments highlight frustrations related to the onboarding experience and include statements such as “the registration process is overly complicated,” “the status remains pending for months,” and “the corporate registration options are confusing.” These comments suggest systemic usability problems that may negatively affect merchant activation rates and platform engagement.

From case study during interview, said that from weekly monitoring conducted in May 2025 indicate that onboarding-related complaints constitute one of the most frequent issues raised by merchant partners. Moreover, internal stakeholder discussions confirm that the corporate onboarding and product activation flows have not undergone significant interface redesign since 2021, despite substantial growth in merchant diversity and changes in regulatory requirements. This stagnation in interface evolution increases the risk of misalignment between system design and current user needs. From a usability perspective, complex onboarding workflows can generate high cognitive load, increase error rates, and reduce task completion success, particularly in enterprise-oriented mobile apps. Prior research emphasizes that poor usability in early interaction stages, such as onboarding, often leads to user abandonment and long-term disengagement. Therefore, a systematic usability evaluation of the GoFood Merchant onboarding process is essential to identify root causes, quantify usability performance, and inform evidence-based design improvements.

To structure the problem identification process, this study adopts an Ishikawa (fishbone) analysis framework to systematically categorize usability issues. The classification of problem domains follows established perspectives in information technology project management, which emphasize process-related factors such as workflow structure and procedural complexity [5]; people-related factors, including user capability and role differences [6]; technical factors related to system functionality and interface behavior [6]; and organizational factors such as policy alignment and cross-unit coordination [5]. The analysis in this study reveals that the onboarding process is affected by fragmented workflows, limited automation in data entry and validation, insufficient feedback mechanisms, and inconsistent interface presentation across screens. These issues collectively contribute to reduced usability performance, increased user frustration, and declining user satisfaction metrics.

Based on the identified challenges, this study addresses the following research questions:

RQ1: What is the usability of the current (“as-is”) onboarding process in the GoFood Merchant app?

RQ2: How can the onboarding interface be redesigned to improve usability and user experience?

RQ3: How effective is the proposed (“to-be”) interface redesign in terms of usability evaluation results?

Accordingly, the objectives of this study are threefold: (1) to evaluate the usability of the existing GoFood Merchant onboarding process using a mixed-methods approach, (2) to design an alternative interface based on user-centered design (UCD) principles, and (3) to validate the effectiveness of the proposed design through empirical usability testing. The novelty of this research lies in its integrated evaluation and redesign of a large-scale merchant onboarding system using multiple complementary usability instruments combined with iterative high-fidelity prototyping. The findings are expected to contribute both practical design recommendations for GoTo’s merchant platform and academic insights into usability improvement strategies for complex mobile onboarding systems.

2. RESEARCH METHOD

This study adopts a mixed-methods exploratory case study approach within an evaluative research paradigm. The mixed-methods design was selected to obtain a comprehensive understanding of usability issues in GoFood Merchant onboarding by integrating quantitative measurements with qualitative insights. Mixed-methods research combines quantitative and qualitative approaches within a single study, encompassing data collection, analysis, interpretation, and reporting stages [7]. This approach enables triangulation between usability metrics, user behavior observations, and subjective user perceptions, thereby strengthening the validity of the

findings [8]. The integration of quantitative and qualitative findings follows established mixed-methods integration principles, which emphasize the systematic linking of data collection, analysis, and interpretation across methods [9]. According to Fetters et al. and Johnson and Onwuegbuzie, methodological pluralism in mixed-methods research yields more robust and comprehensive research outcomes than the use of a single method, as it enables complementary strengths between quantitative and qualitative approaches [10].

2.1 Research Design and Stages

The research was conducted in seven structured stages adapted from usability engineering and human-centered design frameworks: (1) problem identification, (2) literature review, (3) research design, (4) data collection, (5) data analysis, (6) interpretation of results, and (7) design recommendations [11]. These stages ensure that usability problems are systematically identified, analyzed, and addressed through iterative design improvement.

The first stage focused on identifying usability problems related to corporate onboarding and product activation in the GoFood Merchant app. This stage utilized secondary data sources, including Google Play Store reviews from February to April 2025 and internal weekly complaint reports from May 2025. The analysis revealed recurring issues related to onboarding complexity, unclear information, and prolonged verification status.

The literature review synthesized prior studies on usability evaluation, user interface design, and onboarding experiences in mobile apps. This stage followed a systematic literature review (SLR) approach, which comprises three main stages: (1) formulation of focused research questions to guide the literature search, (2) identification of relevant databases and definition of inclusion criteria aligned with the research objectives, and (3) systematic and comprehensive execution of the literature search based on the predefined criteria [12]. We incorporated established usability principles derived from Shneiderman's eight golden rules of interface design [13] and usability testing practices proposed by Nielsen [11] to support methodological rigor. To ensure a systematic and reproducible evaluation process, this study was conducted through a structured sequence of research stages that integrate mixed-methods usability evaluation with iterative UCD [14]. The overall research flow, including problem identification, usability evaluation of the existing interface, iterative redesign, and prototype validation, is illustrated in Figure 3.

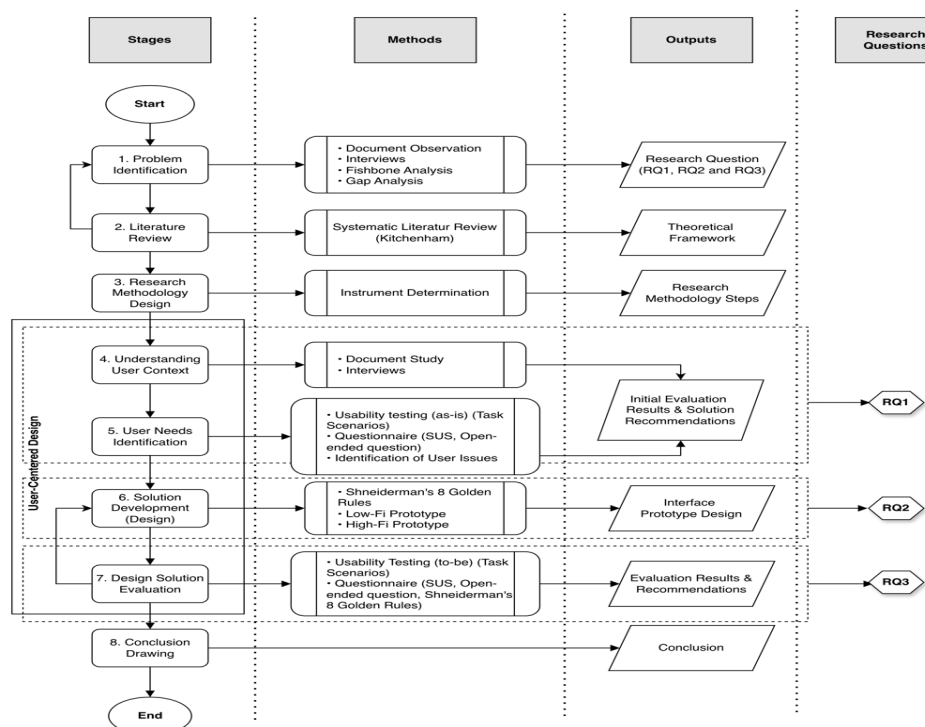


Figure 3. Research Methodology Flow Diagram

2.2 Participants and Sampling

Participants were selected by purposive sampling to ensure that all respondents had direct experience of the GoFood Merchant onboarding process. The participant composition, which included merchant owners, merchant staff, and IT experts, was designed to represent diverse user roles and evaluation perspectives. This approach enabled the study to capture both strategic and operational viewpoints, as well as to validate the research instruments through expert judgment.

2.3 Research Instruments

Multiple instruments were employed to evaluate usability comprehensively and capture both quantitative performance indicators and qualitative user perceptions. The system usability scale (SUS) was used as the primary quantitative instrument to measure perceived usability. This scale consists of 10 Likert-scale items and produces a score ranging from 0 to 100 [15], with a benchmark score of 68 indicating acceptable usability [16]. The SUS instrument has been widely validated and applied in mobile app usability studies due to its reliability, simplicity, and robustness across different domains [17]. The SUS questionnaire items in this study were adapted from validated SUS implementations reported in prior empirical studies, including that of Santoso et al. [18], who demonstrated the applicability of SUS for evaluating user experience in digital learning and service-based systems. The total SUS score is calculated by summing scores of 0–4 for individual items and multiplying the result by 2.5. Normative studies indicate that an average SUS score of 68 serves as a general benchmark, where scores above 68 reflect good usability, while scores below this threshold suggest the need for design improvement [19].

Task-based usability testing took place using specific tasks that show the complete onboarding and service activation process in the GoFood Merchant application. The tasks were divided into two main phases: (1) corporate onboarding tasks, which included account registration, entering corporate identity, submitting legal documents, providing business and outlet information, selecting services, and submitting registration; and (2) product activation tasks, which involved completing the restaurant profile, setting up operating hours, creating the menu, and finalizing activation. Such testing is widely applied to objectively evaluate user performance by measuring task completion rate and error frequency, which collectively reflect an interface's effectiveness and efficiency. These performance-based metrics enable systematic identification of interaction breakdowns and usability barriers during real task execution [20]. Recent methodological studies further emphasize that task-based usability testing in mobile apps should be supported by a structured experimental design and complementary qualitative feedback to capture usability issues comprehensively [21], [22]. During testing, task completion success, observed errors, and user behavior were systematically recorded to identify interaction breakdowns and usability barriers [23].

To complement the quantitative findings, open-ended questions were administered to capture user perceptions, frustrations, and improvement suggestions that may not be fully reflected in numerical scores. Qualitative responses were analyzed using thematic coding to identify consensus usability issues and recurring themes across participants. The thematic categories used to classify these issues were informed by established usability evaluation guidelines, covering aspects such as accessibility and compatibility, home page and search, page layout and navigation, scrolling, paging and links, headings, titles and labels, text appearance and lists, screen-based controls, graphics and multimedia, and organization of information and content [24].

In addition, a principle-based interface evaluation grounded in Shneiderman's eight golden rules of interface design was applied to assess interface compliance with established usability principles, including consistency, informative feedback, error prevention, and reduction of memory load [13]. This principle-based assessment was used to support both problem identification in the as-is interface and validation of improvements in the redesigned prototype.

Prior to data collection, face validity testing was conducted to ensure the clarity, readability, and relevance of all research instruments, particularly the SUS questionnaire, task scenarios, and open-ended questions. This testing involved six participants—three usability experts and three merchant representatives—and aimed to confirm that the instruments were

understandable, unambiguous, and appropriate for the context of GoFood Merchant onboarding [25]. Feedback obtained during face validity testing was used to refine wording, eliminate ambiguous terms, and adjust task descriptions before the formal usability evaluation.

Each instrument involved different participant groups based on its evaluation purpose. The participant characteristics and their distribution across research instruments are summarized in Table 1.

Table 1. Involvement of research participants

Research instrument	Participant group	Number of participants
Face validity	IT experts	3
	Merchants	3
Usability testing	Merchant owners	5
	Merchant staff	5
Questionnaire (SUS, open-ended questions, principle-based evaluation based on Shneiderman's eight golden rules))	Merchant owners	15
	Merchant staff	15

2.4 Data Collection and Analysis

Data for the as-is evaluation were collected through task-based usability testing sessions and post-task questionnaires, namely the SUS and open-ended questions. Task-based usability was tested using predefined task scenarios that represent key stages of the GoFood Merchant corporate onboarding and product activation process. Observing users while they perform representative tasks is essential for identifying usability problems, particularly in complex mobile workflows where interaction breakdowns often emerge during real task execution, as highlighted in prior mobile usability studies [26], [27]. This approach enables the capture of real user interaction behavior and the identification of usability issues that may not be revealed through inspection-based evaluation alone [23]. The same group of participants took part in both the as-is and to-be evaluations, using a paired-sample usability evaluation design. In the as-is phase, participants assessed the current GoFood Merchant application. In the to-be phase, they interacted with a high-fidelity prototype that showcased the redesigned onboarding interface. Both evaluations were done on Android smartphones in controlled conditions to maintain the same device type, screen size range, and operating system environment.

After completing the assigned tasks, participants completed the SUS questionnaire to measure perceived usability. The SUS data were analyzed using descriptive statistics to obtain overall usability scores and to assess whether the interface met the benchmark score for acceptable usability of 68 [15]. The open-ended questions were administered to collect qualitative feedback regarding user difficulties, confusion points, and improvement suggestions that were not fully captured by quantitative measures.

Qualitative data obtained from usability testing observations and open-ended responses were analyzed using a consensus-based thematic analysis approach. Two raters independently reviewed and coded participant statements to identify recurring usability issues. Initial codes were then discussed and grouped into higher-level themes through iterative comparison. Only codes that achieved full agreement between both raters were retained and included in the final thematic structure, while any codes that did not reach mutual agreement were excluded from analysis. This full-consensus criterion was applied to ensure consistency in category definitions, reduce individual researcher bias, and strengthen the analytical rigor of the qualitative findings. This approach aligns with established qualitative analysis practices that emphasize consensus coding when a small number of raters is involved [28], [29]. Based on the findings from the as-is evaluation, a redesign phase was conducted following UCD principles. This approach emphasizes iterative refinement based on user feedback and evaluation results [30]. Two design iterations were performed, resulting in a low-fidelity prototype for early validation of workflow structure and information hierarchy, followed by a high-fidelity prototype with refined interaction details, visual hierarchy, and interface consistency [31].

In the second iteration (to-be evaluation), a principle-based interface evaluation grounded in Shneiderman's eight golden rules was included to systematically assess the redesigned interface against established usability principles, including consistency, informative feedback, error prevention, and reduced short-term memory load [13]. The redesigned prototype was also

evaluated using the instruments applied in the as-is phase—the SUS, task-based usability testing, and open-ended questions—to enable direct comparison between the original and redesigned interfaces.

Finally, results from all evaluation instruments were triangulated to assess usability improvements, validate the effectiveness of the redesign, and comprehensively answer the proposed research questions. Integrating quantitative and qualitative findings strengthens the credibility of usability evaluation results within a mixed-methods research design [32].

3. RESULTS AND DISCUSSION

This section presents and discusses the results of the usability evaluation conducted on the GoFood Merchant app, focusing on the corporate onboarding and product activation process. The analysis integrates quantitative and qualitative findings derived from multiple usability evaluation instruments, including the SUS, task-based usability testing, open-ended questions, and a principle-based interface evaluation guided by Shneiderman's eight golden rules.

To provide a holistic comparison between the existing (as-is) interface and the redesigned (to-be) prototype, the evaluation results from each instrument are summarized in Table 2. This approach enables a structured assessment of the app's usability improvements achieved through UCD principles and iterative prototyping.

Table 2. Comparison of usability evaluation results between as-is and to-be interfaces

Evaluation instrument	As-is interface (before redesign)	To-be interface (after redesign)	Key improvement observed
Usability testing	Users had trouble completing onboarding tasks; frequent confusion and task interruptions	Tasks completed more smoothly with fewer interruptions	Improved task flow clarity and reduced cognitive load
SUS	Score = 63.83 (below benchmark of 68)	Score = 85 (above benchmark of 68)	Significant increase in perceived usability and user confidence
Open-ended questions	10 consensus usability issues grouped into seven categories	Only one remaining usability issue from seven impression themes	Substantial reduction in usability barriers
Shneiderman's 8 golden rules	–	Average score 4.2/5.0; all principles score >4.0	Strong compliance with established usability principles derived from Shneiderman's 8 golden rules

3.1 Usability Evaluation of the As-Is Interface

The usability evaluation of the existing GoFood Merchant onboarding interface indicates that overall usability does not meet acceptable benchmarks. As shown in Table 2, the as-is interface obtained an SUS score of 63.83, which falls below the recommended benchmark score of 68, indicating marginal usability performance.

Task-based usability testing revealed multiple breakdowns during the onboarding process. Several registration-related tasks, particularly those involving legal document submission, business data entry, and verification review, were frequently interrupted. Users often required repeated attempts or clarification to proceed, indicating issues related to task flow continuity, system feedback, and information clarity.

Qualitative findings from usability testing and open-ended responses revealed ten consensus usability issues, categorized into seven primary usability problem areas. These issues were organized at Tabel 3. These issues predominantly relate to complex onboarding flows, unclear information regarding document requirements and verification status, inconsistent interface elements, and insufficient system feedback. Users frequently reported uncertainty regarding their current onboarding progress and the reasons behind prolonged verification delays.

Table 3. Axial coding results of usability issues (rater consensus) as-is interface

No	Issue Category (Axial Code Consensus)	Issue Theme (Rater Consensus)	Agreement Percentage
1	Organisation of Information and Content	Registration form filling process remains manual and redundant	100%
		Lack of clarity in business information structure and guidance	100%

2	Page Layout and Navigation	Registration process is excessively long	100%
		On-screen keyboard obstructs form fields and primary action buttons	100%
3	Scrolling, Paging, and Links	Lack of visibility of registration status, verification progress, and time estimation	100%
4	Text Appearance and Lists	Lack of transparency in service fee information at the initial stage	100%
5	Graphics, Images, and Multimedia	Limited file format support and suboptimal document/image upload experience	100%
6	Screen-Based Controls	Insufficient availability of automation features and form-filling assistance	100%
		Inefficient operating hours configuration and time component interaction	100%
7	Accessibility and Compatibility	Suboptimal location integration and manual business address input	100%

From a design-principles-based perspective, the as-is interface exhibits several violations of Shneiderman's eight golden rules, particularly in terms of interface consistency, informative feedback, error prevention, and reduction of short-term memory load. These findings are consistent with prior studies indicating that complex onboarding processes without adequate guidance significantly reduce user satisfaction and task success rates [13].

3.2 Redesign Strategy and Interface Improvements

Based on the usability problems identified in the as-is evaluation (Table 2), a redesigned onboarding interface was developed using UCD principles to ensure that design decisions were grounded in user needs and empirical findings [30]. The redesign strategy directly addressed these usability issues, particularly those related to workflow complexity, information clarity, and interface consistency.

The initial redesign phase adopted a low-fidelity prototyping approach, aimed at restructuring the onboarding workflow, simplifying task sequences, and improving information hierarchy, prior to visual refinement. Low-fidelity prototypes are widely used in early-stage usability design to enable rapid exploration of the interaction flow and to identify usability issues at minimal development cost. Low-fidelity prototyping is effective for validating task flow logic, uncovering breakdowns in user interaction, and supporting iterative refinement based on empirical usability findings [22], [24]. By abstracting visual details, this approach allows evaluators and users to focus on functional structure and interaction logic, thereby facilitating early usability validation before progressing to high-fidelity design. An example of the low-fidelity prototype used to explore alternative onboarding flows is illustrated in Figure 4(a).

Following iterative refinement, a high-fidelity prototype was developed to translate the validated interaction structure into a detailed interface design that enables the evaluation of fine-grained interaction behavior, visual consistency, and user perception. High-fidelity prototypes are particularly effective for validating detailed interface elements and interaction patterns once the overall workflow structure has been stabilized [33], [34]. Key design improvements in this study included the introduction of a clear progress indicator to enhance the visibility of the system status, the application of progressive disclosure to reduce cognitive load, and the integration of autofill mechanisms to minimize redundant data entry [14]. In addition, real-time validation and explicit feedback messages were implemented to strengthen error prevention and recovery [13]. Visual consistency across onboarding screens was improved through standardized layout structures, spacing, and component usage.

A comparison of the original as-is interface and the redesigned high-fidelity to-be interface is presented in Figure 4(b). The comparison highlights how the redesign simplifies navigation, improves information clarity, and enhances overall usability while preserving the functional requirements of the onboarding process.

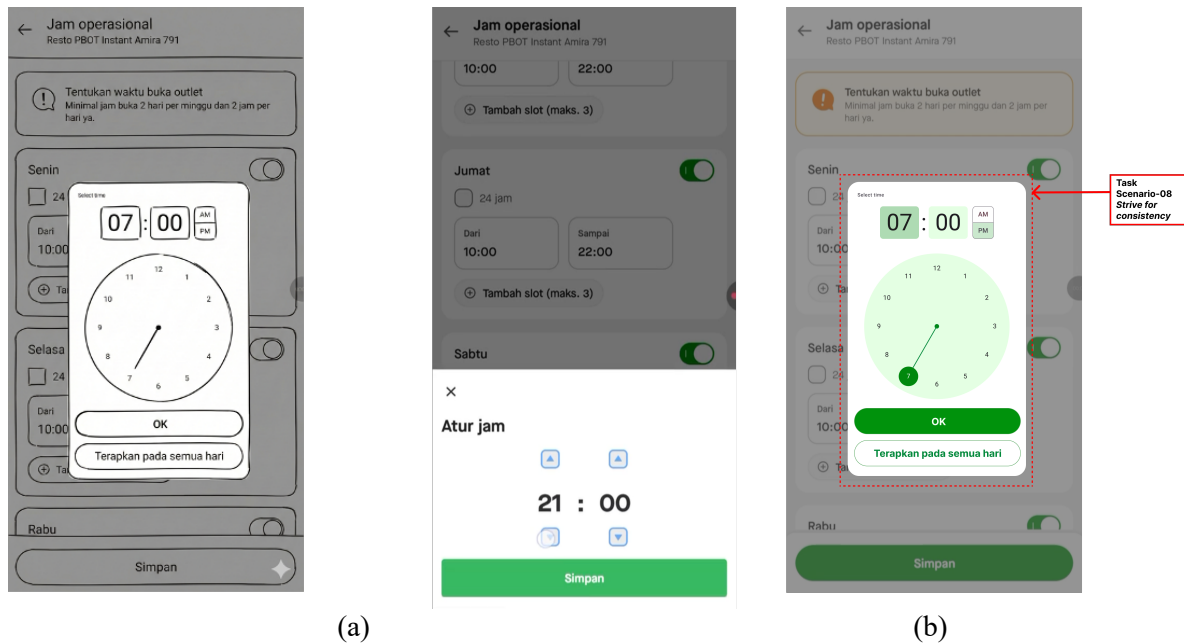


Figure 4. Redesign Results: (a) Low-Fidelity Redesign; (b) Comparison of As-Is Design (left) and High-Fidelity Design (right)

3.3 Evaluation of the To-Be Prototype

The evaluation results of the redesigned high-fidelity prototype demonstrate a substantial improvement in usability across all evaluation instruments. As presented in Table 2, the SUS score increased from 63.83 to 85, exceeding the usability benchmark and indicating good overall usability.

In contrast, the redesigned prototype enabled more consistent task completion across both registration and activation phases, with fewer observed interruptions and smoother task transitions, reflecting improved task flow clarity.

Qualitative findings also support this improvement. Open-ended responses show that users perceived the redesigned interface as more intuitive, easier to follow, and less overwhelming. Thematic analysis shows that the ten consensus usability issue categories identified in the as-is interface were substantially reduced in the to-be prototype, leaving a single dominant remaining issue related to the readability of legal content (Terms and Conditions), as summarized in Table 4. In addition, the principle-based interface evaluation yielded a composite score of 4.2 out of 5.0, with all eight of Shneiderman's golden rules scoring above 4.0, reflecting strong compliance with established usability principles.

Table 4. Axial coding results of usability issues (rater consensus) to-be interface

No	Issues Category (Axial Code Consensus)	Issue Theme (Rater Consensus)	Agreement Percentage
1	Organisation of Information and Content	Small business unfamiliar with online systems need help assistant; need voice assistant	0%
2	Text Appearance and Lists	Legal text is not readable; difficult to read	100%
3	Screen-Based Controls	Real-time digital signature for more seamless	50%

3.4 Discussion

The comparative results summarized in Table 2 demonstrate that systematic usability evaluation combined with iterative redesign can significantly improve the usability of complex onboarding systems. The observed improvements across SUS scores, task-based usability testing, open-ended feedback, and Shneiderman confirm the effectiveness of the UCD approach applied in this study.

Similar patterns have been reported in healthcare app research, where iterative, user-centered development combined with scenario-based usability testing and SUS measurement led to improved task clarity, interface comprehension, and user satisfaction, as demonstrated in the IMIDoc platform study by Benavent et al. [35], and the MyPal ePRO app study by Bonotis et al. [36]. Both studies highlight the importance of aligning interface structure and interaction flow with real user contexts through multiple evaluation cycles.

Consistent findings have also been observed in commercial and service-oriented mobile apps. Adnan et al. [37], show that empathy-driven and user-centered redesign significantly reduces friction in onboarding and transaction-related workflows, while Fahmi et al. [38], report that simplifying interaction flow and feedback mechanisms is critical for improving usability in time-sensitive mobile services. These results align with the usability issues identified in the as-is GoFood Merchant onboarding flow and the subsequent improvements achieved after redesign.

In the context of large-scale public service systems, Claudia and Lestari [39], demonstrate that combining low-fidelity and high-fidelity prototyping with task-based usability evaluation effectively improves form-heavy onboarding and document submission processes. This evidence supports the design strategy adopted in this study, where workflow simplification, clearer feedback, and improved consistency were prioritized during iterative prototyping.

Overall, the discussion confirms that integrating mixed-methods usability evaluation with iterative UCD-based redesign is a robust strategy for improving onboarding usability across diverse domains, including healthcare, e-government, emergency services, and digital commerce platforms.

4. CONCLUSION

This study concludes that the usability of the corporate onboarding and product activation process in the GoFood Merchant app remains suboptimal in its original (as-is) form, primarily due to complex workflows, unclear information presentation, and inconsistent interface design. Through a mixed-methods usability evaluation, these issues were systematically identified and quantified, thereby addressing the first research question concerning the usability of the current onboarding process.

To address these issues, an alternative onboarding interface was systematically designed using UCD principles through two iterative design stages, namely low-fidelity and high-fidelity prototyping. The low-fidelity prototype was used to explore and validate the revised onboarding flow, information structure, and task sequence based on user feedback obtained from the as-is evaluation. The high-fidelity prototype was then developed to refine visual hierarchy, interaction patterns, and component consistency. The redesign process was further guided by a set of heuristic design principles derived from Shneiderman's eight golden rules of interface design, which informed design decisions related to consistency, informative feedback, error prevention, user control, and cognitive load reduction. This structured redesign approach directly translated usability findings into concrete interface design solutions, thereby explicitly addressing the second research question regarding how the onboarding interface can be redesigned to improve usability and user experience.

The evaluation of the redesigned (to-be) prototype demonstrates significantly improved usability compared with the original interface, as evidenced by higher SUS scores, more positive user feedback, and stronger compliance with Shneiderman's eight golden rules. These results confirm the effectiveness of the proposed redesign in answering the third research question. Overall, the findings validate the approach of UCD in complex app-based onboarding contexts and provide a robust, evidence-based recommendation for improving the GoFood Merchant onboarding experience. They also provide a foundation for future usability-driven enhancements across other modules of the platform.

REFERENCES

- [1] C. M. Annur, "Indonesia Masuk Jajaran Negara dengan Startup Terbanyak Dunia, Berapa Jumlahnya?," 2023. [Online]. Available: 6/14/indonesia-masuk-jajaran-negara-dengan-startup-terbanyak-dunia-berapa-jumlahnya
- [2] Gojek, "Gojek Landing Page," 2025. [Online]. Available: <https://www.gojek.com/en-id/>

- [3] C. M. Annur, "Indonesia Pasar Online Food Delivery Terbesar di ASEAN," 2023. [Online]. Available: databoks.katadata.co.id/datapublish/2023/01/19/indonesia-pasar-online-food-delivery-terbesar-di-asean%7D
- [4] Playstore, "Google Play Store Review GoFood Merchant Apps," 2025. [Online]. Available: <https://play.google.com/store/apps/details?id=com.gojek.resto>
- [5] Project Management Institute (PMI), *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, 5th ed. Newtown Square, PA: Project Management Institute, 2013.
- [6] J. T. Marchewka, *Information Technology Project Management*, 5th ed. 2015.
- [7] D. Indra, A. Nugroho, and R. Putra, "Mixed Methods Research in Information Systems Evaluation," *Journal of Information Systems Research*, vol. 12, no. 2, pp. 45–58, 2021, [Online]. Available: <https://doi.org/10.1016/j.jisr.2021.02.005>
- [8] S. Dawadi, S. Shrestha, and R. Giri, "Integrating Quantitative and Qualitative Methods in Educational Research: The Case for Mixed Methods," *Educational Journal*, vol. 8, no. 1, pp. 25–38, 2021, [Online]. Available: <https://doi.org/10.1080/00131857.2021.001>
- [9] M. D. Fetters, L. A. Curry, and J. W. Creswell, "Achieving Integration in Mixed Methods Designs—Principles and Practices," *Health Serv Res*, vol. 48, no. 6pt2, pp. 2134–2156, 2013, doi: 10.1111/1475-6773.12117.
- [10] R. B. Johnson and A. J. Onwuegbuzie, "Mixed Methods Research: A Research Paradigm Whose Time Has Come," *Educational Researcher*, vol. 33, no. 7, pp. 14–26, 2004, doi: 10.3102/0013189X033007014.
- [11] J. Nielsen, *Usability Engineering*. San Francisco, CA: Morgan Kaufmann, 1994.
- [12] B. Kitchenham, O. P. Brereton, D. Budgen, M. Turner, J. Bailey, and S. Linkman, "Systematic literature reviews in software engineering - A systematic literature review," *Inf Softw Technol*, vol. 51, no. 1, pp. 7–15, 2009, doi: 10.1016/j.infsof.2008.09.009.
- [13] B. Shneiderman, C. Plaisant, M. Cohen, S. M. Jacobs, N. Elmqvist, and N. Diakopoulos, *Designing the User Interface: Strategies for Effective Human-Computer Interaction*, 6th ed. Hoboken, NJ: Pearson Education, 2016.
- [14] Y. Rogers, H. Sharp, and J. Preece, *Interaction Design: Beyond Human-Computer Interaction*, 6th ed. Hoboken, NJ: John Wiley & Sons, 2023.
- [15] J. Brooke, "{SUS}: A 'quick and dirty' usability scale," in *Usability Evaluation in Industry*, P. W. Jordan, B. Thomas, B. A. Weerdmeester, and I. L. McClelland, Eds., London: Taylor & Francis, 1996, pp. 189–194.
- [16] A. Bangor, P. Kortum, and J. Miller, "Determining What Individual {SUS} Scores Mean: Adding an Adjective Rating Scale," in *Proceedings of the Usability Professionals Association Conference*, Baltimore, MD, 2008.
- [17] J. Sauro and J. R. Lewis, *Quantifying the User Experience: Practical Statistics for User Research*, 2nd ed. Cambridge, MA: Morgan Kaufmann, 2018.
- [18] H. B. Santoso, M. Schrepp, R. Y. K. Isal, A. Y. Utomo, and B. Priyogi, "Measuring user experience of the student-centered E-learning environment," *Journal of Educators Online*, vol. 13, no. 1, pp. 1–79, 2016, [Online]. Available: <https://eric.ed.gov/?id=EJ1092146>
- [19] M. Hyzy, M. Bolas, J. Swider, and P. Wisniewski, "Revisiting SUS Benchmark Scores: A New Look at the 68-Point Benchmark," *J Usability Stud*, vol. 17, no. 3, pp. 95–110, 2022.
- [20] T. Tullis and J. Stetson, "A Comparison of Questionnaires for Assessing Website Usability," in *Proceedings of the Usability Professionals Association Conference*, Minneapolis, MN, USA: Usability Professionals Association, 2004.
- [21] S. Ntoa, "Usability and User Experience Evaluation in Intelligent Systems," *Int J Hum Comput Interact*, pp. 1–15, 2025, doi: 10.1080/10447318.2025.xxxxxx.
- [22] P. Weichbroth, "Usability Testing of Mobile Applications: A Methodological Framework," *Applied Sciences*, vol. 14, no. 3, pp. 1–20, 2024, doi: 10.3390/app1403xxxx.
- [23] C. M. Barnum, *Usability Testing Essentials: Ready, Set... Test!*, 2nd ed. San Francisco, CA: Morgan Kaufmann, 2020.

- [24] I. Marenkov, A. Merenkov, and V. Orlova, "Usability Evaluation of Web Interfaces: Methodology of Criteria Selection," in *Proceedings of the 2017 IEEE 11th International Conference on Application of Information and Communication Technologies (AICT)*, IEEE, 2017, pp. 1–6. doi: 10.1109/ICAICT.2017.8687078.
- [25] B. Johnson and L. Christensen, *Educational Research: Quantitative, Qualitative, and Mixed Approaches*, 7th ed. Thousand Oaks, CA: SAGE Publications, 2019.
- [26] L. Punchoojit and N. Hongwarittorn, "Usability Studies on Mobile User Interface Design Patterns: A Systematic Literature Review," *Journal of Computer Science*, vol. 13, no. 6, pp. 211–225, 2017, doi: 10.3844/jcssp.2017.211.225.
- [27] H. K. Cho, P.-Y. Yen, and D. Dowding, "A Multi-Level Usability Evaluation of Mobile Health Applications," *J Biomed Inform*, vol. 82, pp. 68–78, 2018, doi: 10.1016/j.jbi.2018.04.006.
- [28] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qual Res Psychol*, vol. 3, no. 2, pp. 77–101, 2006.
- [29] K. M. MacQueen, E. McLellan, K. Kay, and B. Milstein, "Codebook Development for Team-Based Qualitative Analysis," *Cultural Anthropology Methods*, vol. 10, no. 2, pp. 31–36, 1998.
- [30] International Organization for Standardization, "ISO 9241-210:2019 Ergonomics of human-system interaction -- Part 210: Human-centred design for interactive systems," 2019, Geneva, Switzerland. [Online]. Available: <https://www.iso.org/standard/77520.html>
- [31] T. Lowdermilk, *User-Centered Design: A Developer's Guide to Building User-Friendly Applications*. Sebastopol, CA: O'Reilly Media, 2013.
- [32] J. W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 4th ed. Thousand Oaks, CA: SAGE Publications, 2014.
- [33] J. Sauer, K. Seibel, and B. Rüttinger, "The Influence of Prototype Fidelity and User Expertise on the Evaluation of User Interfaces," *Hum Factors*, vol. 52, no. 2, pp. 204–214, 2010, doi: 10.1177/0018720809358722.
- [34] J. Rudd, K. Stern, and S. Isensee, "Low- vs. High-Fidelity Prototyping: A Critical Review," *Interact Comput*, vol. 24, no. 1, pp. 1–13, 2012, doi: 10.1016/j.intcom.2011.06.004.
- [35] D. Benavent *et al.*, "Digital Health Intervention for Patient Monitoring in Immune-Mediated Inflammatory Diseases: Cocreation and Feasibility Study of the IMIDoc Platform," *JMIR Hum Factors*, vol. 12, 2025, doi: <https://doi.org/10.2196/58095>.
- [36] P. Bonotis, P. Angelidis, and P. Natsiavas, "Usability and User Experience Testing of a Co-Designed Electronic Patient-Reported Outcomes App ('MyPal for Adults') for Palliative Cancer Care: Mixed Methods Study," *JMIR Hum Factors*, vol. 12, 2025, doi: <https://doi.org/10.2196/57342>.
- [37] F. Adnan, F. Irnanda, and Y. A. Auliya, "Empathy-Driven Design: Applying Design Thinking to Improve the Usability of the ResellHub Mobile App," in *2023 International Conference on Informatics, Multimedia, Cyber and Informations System (ICIMCIS)*, Nov. 2023, pp. 73–77. doi: 10.1109/ICIMCIS60089.2023.10349081.
- [38] Moch. F. Fahmi, S. Suakanto, I. Perdana, and E. T. Nuryatno, "Smart Ambulance: Mobile Solutions for Emergency Booking and Real-Time Tracking," in *2024 International Conference on Intelligent Cybernetics Technology & Applications (ICICyTA)*, Dec. 2024, pp. 141–146. doi: 10.1109/ICICyTA64807.2024.10913033.
- [39] Claudia and D. P. Lestari, "User-Centered Interaction Design for Indonesia's E-Government Passport Application: The M-Paspor Indonesia Case Study," in *2024 IEEE International Conference on Data and Software Engineering (ICoDSE)*, Oct. 2024, pp. 235–240. doi: 10.1109/ICoDSE63307.2024.10829902.