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User Interface Analysis Using the Heuristic Evaluation Method in the Astra International Cooperative Application (KAI Apps)

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ABSTRACT

This study aims to analyze the usability of the user interface in the Astra International Cooperative (KAI Apps) application using the Heuristic Evaluation method. A quantitative approach was applied through observation of the application and distribution of a Google Form-based questionnaire to 100 respondents selected using the Slovin formula from a population of 100,000 users. The research instrument consisted of 30 statements compiled based on Nielsen's ten Heuristic Evaluation principles, such as visibility of system status, consistency and standards, error prevention, and help and documentation. The data was analyzed using validity and reliability tests, as well as descriptive percentage analysis using SPSS software. The results showed that the Astra Cooperative application scored 86.78%, which is classified as very high, with nine out of ten usability principles rated as good by the majority of respondents. These findings indicate that the application is capable of providing a positive experience for users in accessing cooperative services digitally. However, weaknesses were still found in the aspects of help and documentation, which were considered unclear and not entirely relevant, so that development in the form of tutorials, FAQs, and interactive guides is needed to optimize the user experience.

Keywords: UI/UX Design; Design Thinking; Toddler; Usability Testing; System Usability Scale

INTRODUCTION

The revolution in information and communication technology has brought great changes in the lives of modern humans. One of the significant impacts of these technological advances is on the financial sector, where digital transformation has fundamentally changed the landscape of the financial industry (Ozili, 2018) . Technological innovations in the financial sector have made it easier for people to access financial products or services anywhere, anytime quickly, easily, and safely, in line with the concept of financial inclusion that is increasingly developing in the digital era (Demirguc-et al., 2018).

The rapid development of technology is a common challenge for the cooperative movement in the millennial era. Cooperatives must digitize, keep up with technological developments, just like banking institutions that have developed internet banking and mobile banking services, because in terms of cooperative regulations there is no problem(Wardana et al., 2020). Digital transformation in the cooperative sector is a strategic need to increase competitiveness and relevance in the digital economy era (Syaiful et al., 2022) .

The Astra International Cooperative as one of the leading cooperatives in Indonesia has developed a mobile application, namely the Astra International Apps Cooperative (KAI Apps), which aims to make it easier for its members to carry out various financial transactions and access the services provided. KAI Apps is an application with various features developed by the Astra International Cooperative which functions as a gateway to make it easier for members to transact and take advantage of various available services, adopting fintech principles that have been proven effective in increasing access to financial services (Arner et al., 2020).

This application offers various features such as complete financial solutions including loan application, loan simulation, loan payments, credit and data package top-ups, as well as water and electricity bill payments. In addition, this application also offers fast and easy loans with a fast application process, a flexible loan period of up to 60 months, with a loan ceiling of up to 1/3 of Take Home Pay (THP), and relatively competitive fees compared to other financial institutions. The implementation of digital technology in cooperative financial services is in line with global trends where financial technology has become a major catalyst in improving the efficiency and accessibility of financial services (Gomber et al., 2018).

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The Astra Cooperative application has been downloaded on the Play Store by more than 100,000 users and has a rating of 4.5. This is shown by several reviews, as seen in figure 1.

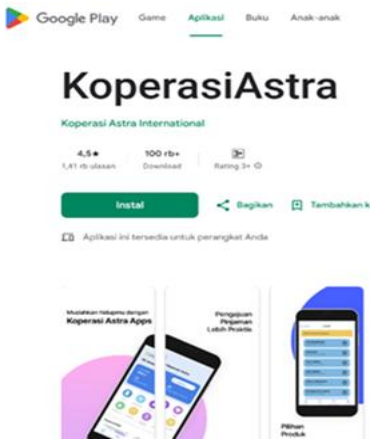

Figure 1. Astra Cooperative Application on the Play Store

Based on figure 1 from the Google Play page of the Astra Cooperative Application, it can be concluded that the Astra Cooperative Application is the official digital service of the Astra International Cooperative which has been downloaded more than 100 thousand times with a high rating of 4.5 out of 5 stars based on 1,410 reviews. The Astra Cooperative Application offers various features that facilitate the financial activities of cooperative members, such as more practical loan applications, as well as a diverse selection of financial products. Overall, this application shows a fairly high level of trust and user satisfaction, as well as a focus on the ease of digital cooperative services.

The Astra Cooperative Application is a system related to virtual cooperative administration, which centralizes organizational components where data, information, and communication are managed through technological and digital media. Digital transformation in cooperative services like this is in line with the global trend where mobile technology has become the main platform to improve the accessibility and efficiency of financial services (Harrison et al., 2013). The Astra Cooperative application implemented by the Astra International Cooperative is the main means of managing and storing important document archives belonging to Astra Cooperative members, which number more than 64,500 active members until December 2024.

The Credit and Membership Department, which oversees the management of member data, has the main task and function in managing membership documents both in physical and electronic form as a measure of security and administrative efficiency. Physically, member documents such as membership forms, savings and borrowing records, and transaction data are recorded and stored manually in the filing cabinet of the Astra Cooperative office. Meanwhile, electronically, these documents are scanned (Scanned), renamed according to standards, uploaded, and stored in the Astra Cooperative system to facilitate access, search, and reuse of documents by members or related officers whenever needed.

Astra Cooperative members no longer need to come directly to the office or contact officers to get services, because all needs related to membership and transactions can be accessed through the Astra Cooperative application. The application is designed to make it easier for members to obtain information and make transactions quickly, practically, and in real-time, implementing the principles of mobile user experience that emphasize ease of access and efficiency (Huang & Benyoucef, 2023).

Through this application, members can find out their KAI balance and KAI Points, complete with an ever-updated purchase history. In addition, there is also a loan service that allows members to apply for new loans or make repayments online without having to go through a manual process. To help with financial planning, members can take advantage of the loan simulation feature that provides installment estimates according to the desired nominal and tenor. Not only that, the application also provides loan history so that members can monitor ongoing and paid off loans. For daily needs, there are purchase services such as gadgets, credit, and data packages directly from the application. Furthermore, members can also enjoy various attractive promos in the form of exclusive discounts and vouchers, such as discounts on certain products or shopping vouchers that can be used on partner applications such as Alfagift.

In addition to these main features, the Astra Cooperative application also has a "More" menu that contains

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additional services according to the digital needs of members. With various conveniences offered, this application is an integrated solution for Astra Cooperative members in managing transactions, utilizing services, and getting more benefits from the membership program.

With the presence of the Astra Cooperative Application, all member needs can be accessed quickly, practically, and securely directly from smartphones. However, based on the results of preliminary research through a review of user reviews on the Google Play Store, a number of complaints were found related to the user interface that caused obstacles to the convenience and effectiveness of the service. This shows that even though the app already has a wide range of features, the quality of the interface design still needs to be improved to match the expectations and needs of cooperative members, in line with research showing that usability issues are a critical factor in mobile app adoption (Richardson et al., 2021).

One of the main issues identified was the less responsive display of the loan application feature. In the simulation section and when submitting, users often experience a stalled process, prolonged loading, and errors when pressing certain buttons. This condition shows the weak interface design in providing quick response or instant feedback to user actions, which is a violation of the basic principle of the usability heuristic "visibility of system status" (J. Nielsen, 1994a).

In addition, the sudden appearance of password replacement popups without notification is also a complaint that is quite annoying. For some users, sudden notifications without an explanation of the reason for the replacement reduce convenience and cause confusion, so the interface is considered less communicative in conveying security policies. Another issue occurred with the feature uploading documents through the camera that did not appear or was inactive. This condition hinders users when they want to upload important documents such as ID cards or payslips, so they have difficulty completing the administrative process independently and have to find solutions outside the application. These technical obstacles indicate the need to optimize the integration of camera features with the interface.

The problem is also seen from the lack of clear navigation in the main menu. The inconsistent layout and use of unlabeled icons leave users confused when they want to find certain features, such as transaction history or loan applications. This shows the weak application of the principle of visibility of system status and match between system and the real world in application design, which is part of the principle of usability heuristics that is fundamental to mobile applications (Joyce et al., 2017).

On the other hand, the lack of guides or instructions for use further increases the challenges for new users. The absence of tutorials, FAQs, or visual prompts means that members have to experiment on their own to understand the flow of services, which often leads to input errors or process failures. These limitations highlight the importance of providing intuitive guidance for a better and more inclusive user experience, as research shows that help and documentation are critical elements in successful mobile app design(Guo et al., 2020).

Based on the description that has been explained, it can be concluded that the main weakness in terms of user interface in the Astra Cooperative application lies in several important aspects that interfere with user comfort and effectiveness. The loan application interface is considered unresponsive and prone to errors, thus hindering the smooth transaction process. The password replacement popup system is also less communicative because it is not accompanied by a clear explanation, causing confusion for users. In addition, the feature of uploading documents via camera often does not appear or is inactive, which has an impact on delays in the administrative process. In terms of navigation, the confusing and inconsistent menu layout makes it difficult for users to find certain services. Furthermore, the lack of interactive guides such as tutorials or FAQs causes new users to have to adapt on their own without adequate directions. These weaknesses show the need to improve interface design to make the application more responsive, communicative, and user-friendly.

Judging from the weaknesses found in the user interface of the Astra Cooperative application, an important step is needed in the system analysis process that aims to improve the effectiveness of the system in supporting the performance of digital cooperatives. System analysis is the process of identifying and evaluating the components in an information system so that they can interact optimally with each other in order to achieve organizational goals (Al Fatta, 2007).

In the context of user interface, the Usability Heuristic Evaluation approach introduced by Nielsen (1994) is one of the relevant and effective evaluation methods in assessing how well the Astra Cooperative application meets the basic principles of user convenience (J. Nielsen, 1994b). Heuristic Evaluation is a high-level design principle that is useful for assessing the ease of using the product (Buie & Murray, 2012). Heuristic Evaluation is a type of user interface research in which an individual or team of several individuals, evaluates a prototype specification, or product that refers to the basic principles of Heuristic Evaluation (Azkya et al., 2020).

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METHOD

Research Approach

This study employed a quantitative descriptive approach using Nielsen's Heuristic Evaluation framework to assess the usability of the Koperasi Astra International (KAI Apps) application. This approach was selected because it allows for a systematic and measurable evaluation of the user interface based on user perceptions and expert criteria.

Observation Procedure

Direct observation was carried out by the researcher prior to distributing the questionnaire to gain an initial understanding of the user interface (UI) and user experience (UX) of KAI Apps. The researcher installed and used the latest version of the application available on the Play Store, systematically analyzing the layout, navigation flow, color palette, icon consistency, and response time of various features. The observation revealed several usability issues that informed the questionnaire design, such as inconsistent icon placement, delays in button response, and insufficient user guidance or documentation. Despite these weaknesses, the application was found to have a generally intuitive design and efficient access to cooperative services. These initial findings were used to ensure that the questionnaire accurately captured real-world usability challenges faced by users.

Instrument Development

The research instrument was developed based on Nielsen's ten *Heuristic Evaluation* principles, encompassing: (1) Visibility of System Status, (2) Match Between System and the Real World, (3) User Control and Freedom, (4) Consistency and Standards, (5) Error Prevention, (6) Recognition Rather than Recall, (7) Flexibility and Efficiency of Use, (8) Aesthetic and Minimalist Design, (9) Help Users Recognize, Diagnose, and Recover from Errors, and (10) Help and Documentation. The instrument consisted of 30 statement items structured using a 5-point Likert scale (Strongly Agree to Strongly Disagree). Each item aimed to capture respondents' perceptions of the usability performance of the application according to the ten heuristic principles.

Sample of Questionnaire Items

Table 1. Sample Items of the Heuristic Evaluation Questionnaire

No	Heuristic Principle	Sample Question Item
1	Visibility of System Status	The application provides clear feedback after each user action.
2	Match Between System and the Real World	The terms and icons used in the application are easy to understand.
3	Consistency and Standards	The layout, colors, and button positions are consistent throughout all pages.
4	Error Prevention	The system provides confirmation before performing critical actions.
5	Help and Documentation	The application provides adequate help or guidance when errors occur.

Data Collection and Analysis

Data collection was conducted through a *Google Form*-based questionnaire distributed to 100 respondents selected using the Slovin formula, from a population of approximately 100,000 active KAI Apps users. The data obtained were analyzed using SPSS software through validity and reliability tests to ensure the instrument's accuracy and consistency. Items with an *r-count* greater than the *r-table* (0.361) were declared valid, while Cronbach's Alpha values above 0.6 confirmed internal consistency. After meeting the validity and reliability criteria, the data were analyzed using descriptive percentage analysis, which classified usability levels into five categories: *Very Low, Low, Moderate, High,* and *Very High*. Through this methodological framework, the study aimed to systematically identify the strengths and weaknesses of the KAI Apps interface and provide evidence-based recommendations for improving the system's usability and overall user experience.

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RESULTS

Validity Test

Table 2. Validity Test Results

Variable	Statement	r count	r Table	Information
Visibility of system status	A1	0,900	0,361	Valid
	A2	0,890	0,361	Valid
	A3	0,874	0,361	Valid
Match between system and the real world	B1	0,943	0,361	Valid
	B2	0,975	0,361	Valid
	B3	0,942	0,361	Valid
User control and freedom	C1	0,925	0,361	Valid
	C2	0,911	0,361	Valid
	C3	0,931	0,361	Valid
Consistency and standards	D1	0,897	0,361	Valid
	D2	0,891	0,361	Valid
	D3	0,865	0,361	Valid
Error Prevention	E1	0,822	0,361	Valid
	E2	0,818	0,361	Valid
	E3	0,917	0,361	Valid
Recognition Rather than Recall	F1	0,664	0,361	Valid
	F2	0,489	0,361	Valid
	F3	0,658	0,361	Valid
Flexibility and Efficiency of Use	G1	0,789	0,361	Valid
	G2	0,828	0,361	Valid
	G3	0,804	0,361	Valid
Aesthetic and Minimalist Design	H1	0,836	0,361	Valid
	H2	0,894	0,361	Valid
	H3	0,811	0,361	Valid
Help User Recognize, Diagnose, and Recover from Errors	I1	0,589	0,361	Valid
	I2	0,833	0,361	Valid
	I3	0,696	0,361	Valid
Help and Documentation	D1	0,833	0,361	Valid
	J2	0,910	0,361	Valid
	D3	0,899	0,361	Valid

Based on Table 1 of the validity test results, it can be explained that all statement items used in this research questionnaire are declared valid. The validity test was carried out by comparing the value of r calculated with the r table at a significance level of 5% and the number of respondents as many as 100 people, so that the r value of the table was obtained of 0.361. A statement item is declared valid if the calculated value r is greater than the r of the table. In the table, it can be seen that all statement items, ranging from the Visibility of System Status to Help and Documentation variables, show a calculated r value that is above 0.361. For example, in the Visibility of System Status variable, the calculated r-value ranges from 0.874 to 0.900, far exceeding the r-value of the table. The same can also be seen in the Match between System and the Real World variable with the highest calculated r value reaching 0.975. Although there are some items with relatively lower calculated r-values, such as F2 (0.489) and I1 (0.589), they remain above the threshold of 0.361 so that they still meet the validity criteria. This shows that all 30 statement items prepared based on Nielsen's Heuristic Evaluation principles are able to measure the aspects in question precisely and consistently. Thus, it can be concluded that this research instrument has met the requirements for construct validity. This means that each question item in the questionnaire really represents the usability indicators of the Astra Cooperative application to be measured. These results also serve as the basis that the data collected can be relied upon for further analysis in assessing the strengths and weaknesses of the application interface.

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Reliability Test

Table 3. Reliability Test Results

Variable	*Cronbach's Alpha*	*Cronbach's Alpha Grade Standard*	Information
Visibility of system status	0,741	0,6	Reliable
Match between system and the real world	0,882	0,6	Reliable
User control and freedom	0,847	0,6	Reliable
Consistency and standards	0,777	0,6	Reliable
Error Prevention	0,746	0,6	Reliable
Recognition Rather than Recall	0,790	0,6	Reliable
Flexibility and Efficiency of Use	0,791	0,6	Reliable
Aesthetic and Minimalist Design	0,783	0,6	Reliable
Help User Recognize, Diagnose, and Recover from Errors	0,755	0,6	Reliable
Help and Documentation	0,849	0,6	Reliable

Based on the results of the reliability test shown in Table 2, it can be explained that all research variables show a value of Cronbach's Alpha greater than 0.6 as the minimum standard value of reliability. This means that each research instrument used can be declared reliable or consistent in measuring the construct in question. The highest Cronbach's Alpha value was seen in the Match between System and the Real World variable with a score of 0.882, which indicates a very strong internal consistency. Meanwhile, the variable with the lowest value is Visibility of System Status with a score of 0.741, but it remains above the limit of 0.6 so it is still in the reliable category. Other variables such as User Control and Freedom (0.847), Consistency and Standards (0.777), Recognition Rather than Recall (0.790), and Help and Documentation (0.849) also showed a good level of reliability. With these results, it can be concluded that all statement items used in the questionnaire have a high level of reliability. This means that if the same instrument is reused in respondents with similar conditions, the results obtained will be relatively consistent. This strengthens the findings of previous validity tests, so that the research instrument is not only valid in content, but also reliable in consistency.

Analysis of the Percentage of Astra Cooperative Applications

Percentage analysis was carried out to describe the respondents' responses to each statement contained in the research instrument. The data presented in the form of percentages aims to show the tendency of respondents' responses to the usability indicators of the Astra Cooperative application based on Nielsen's *Heuristic Evaluation principles* . Each statement is categorized into five answer scales, namely Strongly Agree (SS), Agree (S), Neutral (N), Disagree (TS), and Strongly Disagree (STS). The results of this percentage analysis provide an overview of the extent to which the Astra Cooperative application is considered to have met *the usability* aspect from a user perspective, including dimensions such as *visibility of system status, match between system and the real world, user control and freedom*, and other principles. Thus, percentage data can be used as a basis for identifying the strengths of the application while also finding areas that still need improvement.

Table 4. Results of Analysis of the Percentage of Astra Cooperative Applications

No.	Statement	Percentage of Statements					Total (S+SS)
		SS	S	N	TS	STS	
Visibility of System Status							
1	The system displays the status of the loan process, and installments in real-time.	48%	39%	7%	2%	4%	87%
2	Users get a notification when the transaction is successful or fails.	46%	47%	4%	0%	3%	93%
3	Transaction status information is easy to understand and clearly visible.	50%	40%	6%	1%	3%	90%
Match Between System and The Real World							
1	The terms and icons on the feature are easy for users to understand.	48%	45%	4%	0%	3%	93%

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2	The language used is in accordance with the everyday terms of the cooperative members.	63%	32%	2%	0%	3%	95%
3	The information displayed is relevant to the user's needs.	51%	43%	3%	0%	3%	94%
User Control and Freedom							
1	Users can cancel or edit submissions before they are submitted.	48%	44%	2%	2%	4%	92%
2	There is an easy-to-use back button on each page.	41%	46%	7%	2%	4%	87%
3	The system allows for input correction before the data is saved.	50%	37%	8%	1%	4%	87%
Consistency and Standard							
1	Layouts, colors, and icons are consistent across feature pages.	45%	45%	5%	3%	2%	90%
2	The date format and nominal are uniform in all parts of the application.	43%	45%	8%	2%	2%	88%
3	Navigation between features has the same display standards.	55%	36%	6%	1%	2%	91%
Error Prevention							
1	The system provides alerts before important processes are performed.	46%	43%	8%	1%	2%	89%
2	There is validation of input data to prevent errors.	42%	46%	7%	2%	3%	88%
3	The app displays a confirmation before the transaction is sent.	51%	37%	8%	1%	3%	88%
Recognition Rather Than Recall							
1	The main menu is easily accessible without having to remember the location of the previous feature.	49%	39%	7%	2%	3%	88%
2	Important features are easy to find without opening a lot of pages.	47%	48%	4%	0%	1%	89%
3	Menu icons and labels make it easy for users to recognize the functionality of the feature.	51%	41%	6%	1%	1%	90%
Flexibility and Efficiency of Use							
1	The transaction process can be done in quick and efficient steps.	49%	43%	5%	2%	1%	90%
2	There is a search or data filter feature available to speed up access.	46%	44%	9%	0%	1%	90%
3	The app supports automation such as data autofill.	55%	35%	6%	3%	1%	91%
Aesthetic and Minimalist Design							
1	The app's interface is simple and doesn't display redundant elements.	49%	46%	4%	0%	1%	97%
2	Interface design focuses on only the information that matters.	63%	34%	2%	0%	1%	96%
3	Colors and visual elements are comfortable to look at and not confusing.	52%	44%	3%	0%	1%	93%
Help Users Recognize, Diagnose, Dialogue, and Recover from Errors							
1	The error message is displayed clearly and easily understandable.	49%	44%	2%	2%	3%	93%
2	The system provides solutions or suggestions when an error occurs.	54%	35%	6%	3%	2%	89%
3	Users can correct errors without having to start over.	46%	46%	5%	1%	2%	92%
Help and Documentation							
1	A user guide is available that can be accessed from the features page.	46%	45%	5%	1%	3%	91%
2	The assistance provided is easy to understand and relevant.	49%	36%	6%	6%	3%	85%
3	The system provides additional information to help resolve the issue.	50%	34%	11%	2%	3%	84%

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The results summarized in Table 3 show that the majority of respondents expressed positive perceptions of the usability of the KAI Apps application. Most indicators obtained high agreement scores above 85%, indicating that the application successfully meets key usability principles. The highest level of agreement was found in the Aesthetic and Minimalist Design principle (97%), reflecting the app's visually appealing and clutter-free interface. Conversely, the lowest percentages appeared in the Help and Documentation dimension (84–85%), suggesting that improvements are needed in providing clearer user guidance and accessible support features. These findings indicate that while the system performs efficiently and intuitively, user assistance features should be strengthened to enhance the overall user experience.

Visibility of System

The system displays the status of the loan process, and installments in *real-time.*

In this statement, the system displays the status of the loan process, and installments in *real-time*. For example, when cooperative members make installment payments, the transaction status immediately changes to "Successful" or "Waiting for Process" without having to wait for a long time. The percentage of users who agree and strongly agree reaches 87%, showing that the Astra International Cooperative system is able to provide *transaction feedback* quickly and on time.

Users get a notification when the transaction is successful or fails.

In this statement, the system provides a notification when the transaction succeeds or fails. For example, when a member applies for a loan, the system immediately displays a "Transaction Successful" or "Transaction Failed" notification. As many as 93% of respondents agree and strongly agree, which indicates that the notification feature is running well and increases the user's sense of security.

Transaction status information is easy to understand and clearly visible.

In this statement, transaction status information is easy to understand and clearly visible. For example, when there is a delay in loan payments, the app displays a status of "Pending" with additional information. The percentage of users who agree and strongly agree reaches 90%, proving that the information in the system is quite clear and easy for members to understand.

Match Between System and the Real World

The terms and icons on the feature are easy for users to understand.

In this statement, the terms and icons on the feature are easy for users to understand. For example, a house-shaped icon is used for the home menu so that it is instantly recognizable. The percentage of agreeing and strongly agreeing reached 93%, indicating that the icons and terms of the Astra International Cooperative application are familiar to members.

The language used is in accordance with the everyday terms of the cooperative members.

In this statement, the language used corresponds to the colloquial terms of the cooperative members. For example, the terms "installments" and "loans" are used rather than technical banking terms. As many as 95% of respondents agreed and strongly agreed, indicating that this application has succeeded in using friendly and communicative language.

The information displayed is relevant to the user's needs.

In this statement, the information displayed is relevant to the user's needs. For example, members can immediately see the nominal installment that must be paid without having to open another menu. The percentage of agreeing and strongly agreeing reached 94%, confirming that the information displayed was in accordance with the practical needs of cooperative members.

User Control and Freedom

Users can cancel or edit submissions before they are submitted.

In this statement, users can cancel or edit submissions before they are submitted. For example, when a member inputs a loan amount incorrectly, the system provides a cancellation or edit option before finalization. The percentage of agree and strongly agree reaches 92%, indicating that this feature gives members the flexibility to avoid mistakes.

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There is an easy-to-use back button on each page.

In this statement, there is an easy-to-use back button on each page. For example, when the user opens the transaction details and then wants to return to the main menu, the back button immediately works fine. As many as 87% of respondents agree and strongly agree, proving that navigation in the app is quite practical.

The system allows for input correction before the data is saved.

In this statement, the system allows for input correction before the data is stored. For example, if a member writes the date of birth incorrectly, the system still gives the option to correct it before it is saved permanently. The percentage of agree and strongly agree reached 87%, indicating that the system is quite flexible in handling input errors.

Consistency and Standards

Layouts, colors, and icons are consistent across feature pages.

In this statement, the layout, colors, and icons are consistent across the feature page. For example, savings, loans, and profile icons have a uniform color so they're easy to spot. The percentage of agree and strongly agree reaches 90%, proving that the application maintains design consistency.

The date format and nominal are uniform in all parts of the application.

In this statement, the date format and nominal are uniform in all parts of the application. For example, the date format is always written in the order of days, months, and the nominal rupiah is displayed with a dotted separator of thousands. The percentage of agreeing and strongly agreeing reached 88%, indicating that the application already has clear standards.

Navigation between features has the same display standards.

In this statement, navigation between features has the same display standards. For example, the navigation buttons in the loan menu use the same position and icon. As many as 91% of respondents agreed and strongly agreed, proving that navigation standards are consistent across cooperative applications.

Error Prevention

The system provides alerts before important processes are performed.

In this statement, the system provides a warning before an important process is performed. For example, when a member wants to delete transaction data, a "Are you sure?" warning appears. The percentage of agree and strongly agree reaches 89%, indicating that the application is able to prevent fatal mistakes.

There is validation of input data to prevent errors.

In this statement, there is validation of the input data to prevent errors. For example, if a member enters a member number that doesn't fit the format, the system immediately provides an alert. As many as 88% of respondents agreed and strongly agreed, indicating that input validation is going well.

The app displays a confirmation before the transaction is sent.

In this statement, the app displays a confirmation before the transaction is sent. For example, when a member wants to repay a loan, the system displays a summary of the transaction before finalization. The percentage of agreeing and strongly agreeing reached 88%, proving that the application is quite effective in minimizing transaction errors.

Recognition Rather than Recall

The main menu is easily accessible without having to remember the location of the previous feature.

In this statement, the main menu is easily accessible without having to remember the previous location of the feature. For example, all important menus such as loans are displayed directly on the front page. The percentage of agree and strongly agree reaches 88%, indicating that the app's navigation is quite intuitive.

Important features are easy to find without opening a lot of pages.

In this statement, important features are easy to find without opening a lot of pages. For example, the installment payment menu is directly available on the homepage without having to look too far. As many as 95% of respondents agreed and strongly agreed, confirming that important features are presented efficiently.

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Menu icons and labels make it easy for users to recognize the functionality of the feature.

In this statement, the menu icons and labels make it easy for users to recognize the functionality of the feature. For example, the wallet icon with the label "Loans" makes it easier for members to know the menu functions. The percentage of agree and strongly agree reaches 92%, proving that the combination of icons and labels is right.

Flexibility and Efficiency of Use

The transaction process can be done in quick and efficient steps.

In this statement, the transaction process can be carried out in quick and efficient steps. For example, loan payments can be completed with just a few clicks. The percentage of agreeing and strongly agreeing reached 92%, indicating that the application supports the efficiency of members' work.

There is a search or data filter feature available to speed up access.

In this statement, there is a search or data filter feature to speed up access. For example, members can easily search for certain transaction history through filters. As many as 90% of respondents agree and strongly agree, proving that the search feature is quite helpful for users.

The app supports automation such as data autofill.

In this statement, the app supports automation such as data autofill. For example, when a member types in a member's number, the system automatically displays the associated data. The percentage of agree and strongly agree reaches 90%, indicating that automation supports transaction efficiency.

Aesthetic and Minimalist Design

The app's interface is simple and doesn't display redundant elements.

In this statement, the app's view is simple and doesn't display redundant elements. For example, the main menu displays core features without ads or irrelevant information. The percentage of agreeing and strongly agreeing reached 95%, proving that the application design is minimalist.

Interface design focuses on only the information that matters.

In this statement, the interface design focuses on important information only. For example, the loan balance is displayed large at the top so that it is immediately visible. As many as 97% of respondents agreed and strongly agreed, confirming that the app is very focused on key information.

Colors and visual elements are comfortable to look at and not confusing.

In this statement, colors and visual elements are comfortable to look at and not confusing. For example, blue is used as the main color so that it is consistent and soothing. The percentage of agree and strongly agree reaches 96%, indicating that the application design is pleasing to the eye and *user-friendly.*

Help User Recognize, Diagnose, and Recover from Errors

The error message is displayed clearly and easily understandable.

In this statement, the error message is displayed clearly and easily understood. For example, when you enter the wrong PIN, you get the message "Your PIN is incorrect, please try again." The percentage of agreeing and strongly agreeing reached 93%, indicating that the error message was quite informative.

The system provides solutions or suggestions when an error occurs.

In this statement, the system provides a solution or suggestion when an error occurs. For example, if you fail to log in, the app gives you a "Forgot Password" option for recovery. As many as 89% of respondents agree and strongly agree, proving that the system has helped users overcome errors.

Users can correct errors without having to start over.

In this statement, the user can correct the error without having to start over. For example, if you fill in the data incorrectly, members can edit it directly without having to repeat the form. The percentage of agree and strongly agree reaches 92%, indicating good system flexibility.

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Help and Documentation

A user guide is available that can be accessed from the features page.

In this statement, there is a user guide that can be accessed from the features page. For example, when you open the loan menu, there is a help icon with a brief explanation. The percentage of agree and strongly agree reached 91%, indicating that the documentation is enough to help members.

The assistance provided is easy to understand and relevant.

In this statement, the assistance provided is easy to understand and relevant. For example, a loan application guide is written in simple language and to the point. As many as 85% of respondents agree and strongly agree, indicating that although it is quite good, the assistance features still need to be improved.

The system provides additional information to help resolve the issue.

In this statement, the system provides additional information to help resolve the issue. For example, an app provides a link to an FAQ or customer service contact. The percentage of agree and strongly agree reached 84%, proving that even though it is available, additional assistance features can still be improved to make it easier for members.

Usability Level Category Classification

Table 5. Usability Level Category Classification

Yes	Score Range	Percentage	Criterion
1	3.000 – 5.399	20% - 35%	Very Low
2	5.400 – 7.799	36% - 51%	Low
3	7.800 – 10.199	52% - 67%	Usual
4	10.200 – 12.599	68% - 83%	Tall
5	12.600 – 15.000	84% - 100%	Stuttgart High

Based on the calculation results, it was obtained that the Astra International Cooperative application involved 100 respondents with 30 questionnaire statements. The results showed a maximum answer score of 15,000, a minimum score of 3,000, a score range of 12,000, and a class interval of 2,400. The highest percentage value is 100%, while the lowest percentage value is 20%, with a percentage range of 80% and a percentage interval class of 16%. The final percentage obtained was 86.78%. From this data, it can be concluded that with a total score of 13,018 out of 100 respondents, a percentage of 86.78% indicates that the usability level of the Astra International Cooperative application is included in the Very High category.

DISCUSSIONS

Based on the results of the test with the Heuristic Evaluation, the application of Nielsen's ten evaluation principles (L. Nielsen & Madsen, 2012) on the Astra Cooperative application shows quality Usability which is quite good. Of the ten principles, nine received a positive assessment that described the application as having met the aspects of information clarity, consistency of appearance, efficiency, security, and ease of use. The results of the analysis of 30 questionnaire statements showed that the majority of items received positive evaluations, with the majority of the answers being Agree and Strongly Agree. The highest score was obtained on item B2 (Language according to the everyday terms of cooperative members) with a score of 452, indicating that the application is easy to understand in terms of language and icons. Meanwhile, the lowest score was in the X10.2 item (Help is easy to understand and relevant) which tends to be neutral according to some respondents. On the dimensions Visibility of System Status, respondents assessed that the system was able to display loan status, and transactions in real-time with clear notifications (Kaya et al., 2019), on the dimensions Match Between System and the Real World, terms, icons, and languages according to the user's daily habits so that they are easy to understand (Auliazmi et al., 2021), on the dimensions User Control and Freedom, users feel they can control their actions through the undo feature, input correction, and back button (Sulaiman et al., 2020), on the dimensions Consistency and Standards, the app's appearance is already consistent in layout, nominal formatting, and navigation (Kaban et al., 2020), on the dimensions Error Prevention, the application is considered capable of providing warnings, input validation, and confirmation before transactions are processed, on the Recognition Rather than Recall, main menus, icons, and feature labels are considered easily recognizable without the need to remember the previous location, on the dimensions Flexibility and Efficiency of Use, the app supports fast transaction steps, data search, and filling automation (Pejić Bach et al., 2020),

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on the dimensions Aesthetic and Minimalist Design, the app is rated simple, focuses on important information, and is comfortable to look at (Syria, 2024) , while in the Help and Documentation, some respondents assessed that the assistance and guidance were still unclear so they needed to be improved. The overall results show that the Astra Cooperative application is quite good in meeting the usability aspect and providing a positive experience for its users. Even so, there are still aspects that need to be improved, especially in the help and documentation sections, because some respondents feel that the available guidance is not fully clear and relevant when facing obstacles. With the dominance of positive results on nine principles Usability, the Astra Cooperative application can be categorized as having good usability quality. However, weaknesses in the help and documentation aspects provide opportunities for future improvements, such as by adding short tutorials, FAQs, or interactive help features that can help users quickly and practically(Nugraha et al., 2018). With this development, the application has the potential to provide a more optimal experience and increase the satisfaction of cooperative members.

CONCLUSION

This study evaluated the usability of the Koperasi Astra International (KAI Apps) application using Nielsen's ten heuristic principles. The results revealed that overall usability reached a high level, with most principles receiving strong positive evaluations from users. However, qualitative findings identified a notable weakness in system responsiveness, particularly in transaction processes and button interactions, which affected user efficiency and satisfaction. To address this issue, future system development should focus on optimizing backend performance and reducing latency in key features, ensuring immediate feedback to user actions. Enhancing real-time responsiveness will not only improve functional usability but also strengthen user trust and engagement. Beyond technical optimization, future research could adopt a mixed-method approach combining Heuristic Evaluation with performance-based usability testing (e.g., task completion time and error rate) to capture both objective and subjective dimensions of user experience. Integrating complementary tools such as the System Usability Scale (SUS) or User Experience Questionnaire (UEQ) would also allow for deeper exploration of emotional and hedonic factors influencing user satisfaction. By implementing these improvements, developers and researchers can ensure that the KAI Apps platform evolves toward a more responsive, efficient, and user-centered digital service that better aligns with user expectations and organizational goals.

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