User Interface Design Analysis in Indomaret Digital Kiosks (study case: I-Kiosks)

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Abstract

Many digital technologies are used to support daily activities, such as a digital machine used in certain supermarkets. I-Kiosk is one of the digital machines used in supermarkets to perform various types of transactions by consumers. However, some problems have been found by users ranging from difficulties to feeling ineffective in accessing the I-Kiosk. The purpose is to analyze how the interaction between users and the kiosk interface system. The research method used is qualitative with a usability testing approach. In this research, the similarity in the visualization on the main screen is one of the main causes of the difficulties felt by the users, which creates doubts about accessing the machine, so it becomes a problem.

Keywords: digital kiosk, user experience, user interface, transaction service, usability.

Introduction

The development of technology in life starts from simple activities in daily life to the level of satisfaction as individuals and social beings. From time to time technology continues to develop, starting from industrial until the communication technology era (Danuri, 2019). Nowadays, digital technology is applied to support daily activities to simplify and speed up activities.One of them is the existence of a digital machine that is used in certain supermarkets to carry out various types of transactions. Research conducted by Taufik and Hanafiah (2019), that there is satisfaction for users in using self-service kiosks when carrying out transaction activities due to the speed and ease of access, and also from the visual appearance of the self-service kiosks, human interaction between officers services and users are important to facilitate the delivery of self-service kiosks.

This research aims to analyze usability and find out problems in using the I-Kiosk machine. The usability aspect is a benchmark for user satisfaction in terms of effectiveness and efficiency so it will influence the user experience aspect (Salim and Yogasara, 2022) So it is hoped that it will provide convenience and effectiveness in carrying out activities in using digital technology in everyday life.

Method

The research method used was a qualitative method with a usability testing approach. The qualitative usability testing method is a test that focuses on collecting findings, insights, and information about how users use a product. This method can be used to determine user experience such as user interest, ease, and comfort when running the application (Muqoddas, Yogananti, & Bastian, 2020). This method is also supported by data collection through literature study and observation. The focus of this research is to analyze how users interact directly with the Kiosk Interface and the extent to which users understand and feel helped by the Kiosk Interface. Apart from that, to analyze what problems and difficulties arise from interactions between users and the Kiosk Interface.

In this research, the main data collection was carried out by conducting observations, test interviews and supported by certain theoretical literature studies. Qualitative testing is one of the best types for finding user experience problems. In this research observations in the test are made to analyze how direct user interaction with the Interface Kiosk is, and to what extent users understand and feel helped by the Interface Kiosk. In addition, we will analyze what problems and difficulties arise from the interaction between users and the Interface Kiosk. The usability testing process is carried out on respondents with 3 different age categories, namely the teenage age group, the adult age group, and the elderly age group.

Result and Discussion

I-Kiosk is an innovation created by Indomaret to make it easier for consumers to carry out various transactions. The form of a touch screen makes it easy for users to use it. This I-Kiosk machine can carry out transactions for several services which are grouped into several options. Payment methods can be made in 2 ways, namely at the cashier or directly at the I-Kiosk machine. Even though this machine was created to speed things up, reduce queues at the cashier, and make some transactions easier many users find it difficult to access the machine. But, I-Kios requires consumers to continue making payments at the cashier so the I-Kios machine becomes ineffective.

Using I-Kiosk is also quite complicated because there are many choices where several types of services are not separated, such as payment point services, in this service there are so many types of services that consumers have difficulty finding the services they need. The 'search' feature on the visualization engine screen is less prominent, making users focus more on other features. So when users need bill payment services such as e-commerce, they will first select 'payment point', but in this feature, there are many e-commerce options that are not grouped. This causes confusion and difficulty in finding what is needed and takes up more time.

Figure 1. Red: Search Feature, Yellow: Payment Point Feature.
Source: Authors

Based on the results of research conducted by Ojel-Jaramillo and Canas (2006), universal design principles must be complemented by a cognitive analysis of user functions in order to improve system design and avoid causing difficulties and incomprehension to users. Many users have difficulty accessing the I-Kiosk, especially the first time. A common complaint is that users do not understand how to perform transactions on the I-Kiosk. In addition, it is often found that users have difficulty finding the intended transaction destination because the visualization provided does not facilitate the user's instincts in accessing this machine. From the research conducted by Park and Lehto (2021) in researching the effect of design on kiosk self-service, it is proven that design plays an important role in increasing the value of customer satisfaction and trust. According to Litsey et. al. (2015), from the results of the research they studied, it was found that good digital design in terms of visualization and appropriate content will produce a device that is user-friendly and highly functional.

In this research, a usability testing process was carried out which aimed to find problems and shortcomings of I-Kiosk. In this test, respondents were asked to make 2 different types of payments, PLN and PDAM transaction. The testing result of 2 types of payments, both of which were the first trials carried out by respondents, difficulties were found in accessing the digital kiosk.

In the first test, respondents were asked to complete a PLN payment transaction with the following steps. Respondents access the I-Kiosk main screen to search for electricity purchase transaction services and then select the type of PLN transaction needed. After selecting the type of transaction, respondents need to enter code data for purchases or payments and verify the data in the form of identity and transaction bill amount. After the data is verified and confirmed, the respondent will get a receipt from the transaction results for payment at the cashier in cash or non-cash.

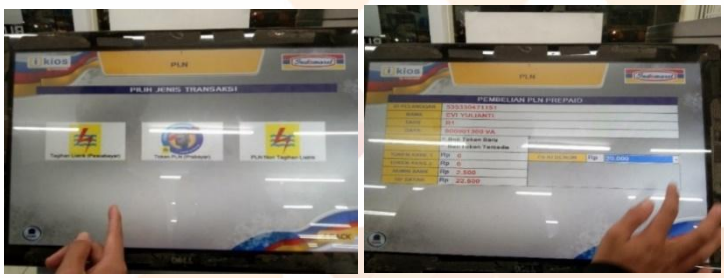

Figure 2. Left: main screen PLN transaction. Right: data verification screen.
Source: Authors

The second test, respondents were asked to make a PDAM payment transaction with the following steps. Respondents access the main screen of I-Kiosk to search for PDAM payment transaction services through the "Search here" feature by entering the keyword of the service being searched, namely PDAM.

Figure 3. "Search Here" Feature Screen.
Source: Authors

After the respondent enters the required keywords, the screen will display various suitable merchants and the respondent needs to choose which merchant to go to. After that, the respondent needs to enter data and code to find out the amount to be paid and needs to wait a few moments to find out the suitability of the data entered by the respondent so that the identity and amount to be paid will be displayed. And then, respondents will be asked to verify and confirm the data displayed and complete the transaction process on this machine by getting a receipt for further payment at the cashier in cash or non-cash. After paying attention during testing, it took longer to test making PDAM payment transactions because the service was not on the main screen like the PLN service. So, the first thing respondents did was look for the targeted merchant's services in the payment point category. After that, new difficulties arose when we had to search one by one for the target merchant because, in the payment point category, there were so many merchant choices that were only grouped based on the first letters of the merchant's name.

Table 4. Testing Result.
Source:

Respondent	PLN Payment	PDAM Payment
Teens (15-20 years old)	Duration: 2-4 Minutes (+) Can immediately find PLN transaction services (-) Experiencing confusion in choosing the transaction destination because there are 3 PLN services, Feeling frustrated because the "loading" time is quite long, It takes a long time to make a transaction for the first time.	Duration: 4-5 minutes (-) Difficult to find the service as it is not on the main screen, Choosing the "payment point" feature earlier than the "search" feature, Difficulty finding the intended service when searching in the "payment point" feature, Experiencing confusion in making transactions because the data that needs to be inputted is different compared to making transactions directly at the cashier.
Adults (21-30 years old)	Duration: 1-3 minutes (+) Can immediately find PLN transaction services (-) Experienced confusion in choosing the transaction destination because there were 3 PLN services, Feeling frustrated because the "loading" time is quite long, It takes a long time to make a transaction for the first time.	Duration: 3-5 minutes (+) Immediately noticed the "search" feature (-) Difficulty finding the intended service when searching in the "payment point" feature,Experienced confusion in making transactions because the data that needs to be inputted is different compared to making transactions directly at the cashier.
Elderly (>30 years ols)	Duration: 5-7 minutes (+) Can immediately find PLN transaction services (-) Difficulty in accessing, need direction from staff, Feeling inefficient compared to making transactions at the cashier directly	Duration: >7 minutes (-) Difficulty in finding the intended service, Confusion in making transactions so that staff or people around need help, Experiencing confusion in making transactions because the data that needs to be inputted is different compared to making transactions directly at the cashier.

Conclusion

From this research, it is found that there are still difficulties experienced by users in using I-Kiosk. These difficulties arise due to doubts in determining what to do or choose to carry out a payment transaction or purchase a service. It is caused by the similarity of the visualization in each category on the main screen so it takes quite a long time for the user to understand how I-Kiosk works. Many users feel pressured to use this I-Kiosk machine because they need to make transactions quickly. So sometimes there are lots of errors when making transactions. Users feel confused because some services require other data to make transactions on the machine and it's not uncommon for many users to prefer to cancel transactions.

Even though there are quite a lot of difficulties experienced by users, this I-Kiosk also has a positive impact felt by users and supermarkets because it provides an alternative to

carrying out transactions separately so that users can more freely carry out more initial transactions processes to pay for certain services without having to queue at the cashier, even though payment still needs to be made at the cashier.

Initial improvements can be applied to the visualization aspect to support the affordance and signifier aspects so that it will be easier to use by various age groups. Visual aspects can be designed more attractive and do not cause similarities between the features displayed in order to leave a different impression and be more easily remembered by users.

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