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Analysis Of Human Computer Interaction Approach In Pospay Application

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ABSTRACT

Fulfillment of customer service is the company's priority in developing a digital service platform. Digital services with many users accessing, of course, require service applications to be able to be used optimally. Human-Computer (HCI) analysis, by focusing on usability aspects which include learnability, efficiency, memorability, errors, and satisfaction aspects, can be an analytical approach from the user's side of an application so that the application can become an application that follows user needs. This study applies HCI analysis to the Pospay application with 100 community respondents using a simple random sampling technique. The analysis results, especially on the user side based on the opinions of user respondents, shows that the Pospay application has implemented aspects of learnability, effectivity, memorability, and satisfaction well but has several drawbacks of the error.

1. Introduction

Service to consumers has entered the digital service era, which requires every service provider to switch to digital technology. This matter is greatly influenced by the development of information technology in various fields[1]. It is equipped with multiple practical features that make it easier for consumers to support daily activities, so digital service applications are one of the main choices consumers choose to support their needs[2][3].

Pospay is one of the applications developed by PT. POS Indonesia is based on a mobile application[4]. Mobile applications are very important because all users have switched to using mobile devices daily[5][6]. Pospay makes it easier for customers to pay various bills such as electricity, telephone, water, BPJS, and taxes. Pospay uses the Online Payment Point System (SOPP) and is applied in all branch offices of PT. Indonesian post. So that by using Pospay, people no longer bother to pay multiple bills in different places, just one counter at one of the Post Office branches, and customers can feel the ease of making several payment transactions online[7]. The advantages of the Pospay application in the community are supposed to be very helpful for the community in terms of paying various bills. In just a matter of minutes, any amount of payments can be resolved easily and quickly. Competition in the financial services business looks tight and is increasingly opening up for new companies in Indonesia. The company is currently competing to be at the forefront of online services. Maintaining loyal customers and keeping them from switching to other financial services are important things to bind customers[8][9] of PT. Pos Indonesia Considering that the pospay application product is one of the superior products from PT. Pos Indonesia, which is oriented to make it easier for the public to make payment transactions and spread across all branches of the Indonesian Post Office, is necessary to analyze and improve the quality of the Pospay application.

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The problems that often arise in the interaction between humans and computers are the frequent occurrence of human (user) misperceptions of existing software[10], newly released applications, of course, need to be known by users, especially in terms of procedures for using and completeness of features in application services[11]. Usability analysis on applications is very important to determine whether an application is following user needs or not[12][13]. This study aims to apply the Human-Computer Interaction (HCI) model by measuring user experience on the Pospay application using the usability method: aspect learnability, efficiency, memorability, errors, and satisfaction[14]. The benefits of research by knowing the usability analysis of the application can be seen in aspects that have been running well and deficiencies in certain elements so that they can be considered for optimizing aspects that are lacking based on usability assessments from application users.

2. Method

2.1 Human Computer Interaction

Human-Computer Interaction is a model of Interaction between humans and systems that involves five components, namely users or humans, interactions, computer systems, activities and the work environment. The primary key of HCI is usability[15]. "Usability is a quality that facilitates the use of an interface, which allows users to implement clear, transparent, agile and useful". In using a system, it is not that a user makes a mistake in using the system[16]. A high usage error rate indicates the low usability of the system in question[16][17]. The definition of usability, according to[18], is "Usability is a quality attribute that assesses how easy user interfaces are to use. The word "usability" also refers to methods for improving ease-of-use during the design process. Usability is a quality attribute that shows how easy the interface is for the user. Usability is defined in 5 quality components. Among others[19]:

a. Learnability: Is it easy for users to learn the first time using the app design?
b. Efficiency: How fast can the user get the job done after using the design?
c. Memorability: To what extent can the application make an impression so that it is easy to remember after not using the application?
d. Errors: How can the application recover from user-generated errors?
e. Satisfaction: How much admiration the user is for the application's design.

In presenting the data, the data is described based on the usability criteria used by the author to see the user experience of the UC Student App: Learnability, Efficiency, Memorability, Errors, and Satisfaction. Learnability describes the level of ease of users in completing basic tasks when first seeing/using the design results. Efficiency represents user speed when completing tasks after the design results are studied. Memorability describes the ease with which the user can use the design well, even if it has not been used for a long time. Errors represent the number of errors caused by the user, the level of aggravation of the error and how to fix it. Satisfaction describes the level of user satisfaction when using the system[10].

2.2 POSPAY

Pospay is a Giropos account-based digital platform that is given to account owners. Giropos so that you can access Giropos services and other postal financial transaction services on a mobile basis. By using "POSPAY" we are given the convenience and facilities of mobile financial transaction services that can be accessed anytime and anywhere, such as[20]:

a. Bill Payment Service: Payment of various bills: Electricity, PDAM, Motorcycle Installment, BPJS, Credit Purchase, Electricity Token, and many more.
b. Remittance via instant Wesel pos service: send money as fast as a message.
c. Financial management through Giropos services is easy, safe, and convenient.
d. Scan QR Code facility for payment/purchase via merchant/Micro Payment based on Giropos Account
e. Financial planning.

The Pospay service complements PT Pos Indonesia (Persero)'s network and service points (points of sales), which were previously available at around 58,700 points in the form of post offices, postal agents, mobile postal services and others throughout Indonesia.

2.3 Simple Random Sampling

A simple random sampling technique, namely the technique of taking sample members from the population, is carried out randomly regardless of the population's strata[21]. It is a sampling method in which each member of the population is given the same opportunity to be selected as a sample[22]. Simple random

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sampling is a type of frequently used primary sampling for the development of sampling method more complex[23].

2.4 Research Stages

The stages of the research can be seen in Figure 1 below

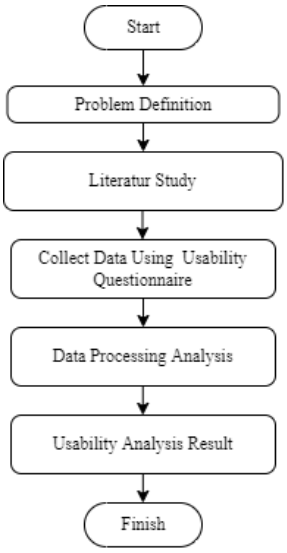

Figure 1. Research Stages

Based on Figure 1, it can be explained that starting with a literature study on the use of HCI analysis in application analysis. Problem identification is followed by data collection by distributing questionnaires to respondents. Questionnaire questions contain the evaluation of the usability element of the Pospay application. This questionnaire aims to determine how easily (usable) the system in the Pospay application is according to its users. The indicators and variables used are 20 questions covering the Usability model: 1) Learnability, 2) Efficiency, 3) Memorability, 4) Error, and 5) satisfaction. Each question has 4 (four) alternative answers using a Likert scale. The Likert Scale is a tool to measure attitudes, opinions, and perceptions of a person or group of people about using the application. The Likert scale is used with a score of 1 (one) to 4 (four) consisting of 4 (four) levels, namely: strongly disagree (STS), disagree (TS), agree (S), and strongly agree (SS)[24].

3. Result and Discussion

3.1 Data Analysis

Primary data collection for pospay service users has been carried out by distributing questionnaires in the google form with 100 respondents. After compilation, nine respondents are not familiar with Pospay application, so there are only 91 valid respondents because they are usually using Pospay application. So the detail of 91 respondents as follows:

a. Gender The survey results show that the gender of postal service users is mostly male, as many as 49 people (53.8%), and female sex as many as 42 people (46.2%).
b. Age The results of data collection on the age of postal service users are balanced, between the ages of 21-25 years as many as 18 people (19.8%), ages 31-38 years as many as 18 people (19.8%) a small proportion are aged between 51 - 55 years only 4 people (4%).
c. Education, the survey results said that the education of postal service users was 42 respondents (46.2%) with undergraduate education (46.2%) and a small proportion with postgraduate and junior high school education/equivalent each 4 (4.4%).
d. Employment, the results of the survey said that most of the respondents who use postal services work as civil servants, as many as 48 people (52.7%) and the smallest are lecturers and laborers each 1 person (1.1%), for details, see Figure 2 below.

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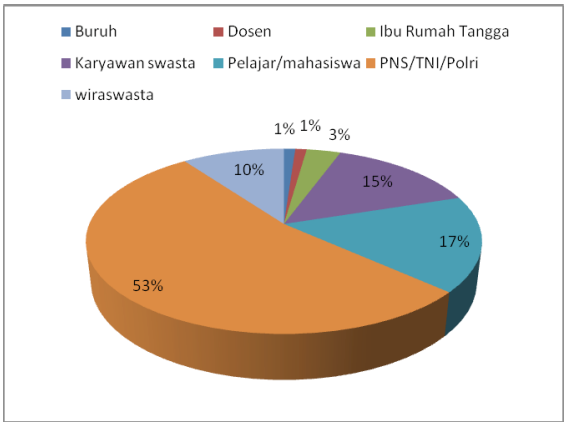

Figure 2. Respondent's Occupation

3.2 Respondent Characteristic

From the Figure 2 with a valid sample of 91 respondents, it can be seen that the respondents consisted of 49 men (53.8%) and 42 women (46.2%). Can be seen from the age of the respondents is between the ages of 15 s.d. 20 years as many as 11 people (12.1%), 21 to with 25 years are 18 people (19.8%), age 26 to d. 30 years or as many as 9 people (9.9%) aged 31 to 35 years as many as 18 people (19.8%), age 36 s.d. 40 years as many as 7 people (7.7%) aged 41 to d. 45 years old, as many as 9 people (9.9%) aged 46 to d. 50 years as many as 9 people (9.9%), age 51 s.d. 55 years is 4 people (4.4%) and 56 years and over are 6 people (6.6%). With education respondents S1 as many as 42 people (46.2%), D3 there are 7 people (7.7%), then S2 as many as 4 people (4.4%), SMA as many as 34 people (37.4%), and SMP as many as 4 people (4.4%). While the respondent's work as laborers and lecturers is 1 person (1.1%), homemakers are 3 people (3.3%), the private sector is 13 people (14.3%), students as many as 15 people (16.5%), civil servants as many as 48 people (52.7%) and entrepreneurs as many as 9 people (9.9%). Thus, most respondents in the pospay service who come to the post office are male. Most of the respondents are between the ages of 21-25 years and 31-35 years. Meanwhile, the majority of respondents' education is S1. And many respondents work as civil servants.

3.3 The Use of Pospay Application

Respondents' income regarding the pospay application in terms of application services said that 82 people (90.1%) already knew, and those who did not know only 9 people (9.9%) as shown in Table 1 below.

TABLE 1
SCORING ASPECT VALUES

Number	Description	Frequency	Percentage
1	Respondents who know the use of the pospay application	82	90,1%
2	Respondents who do not know the use of the pospay application	9	9,9%
Amount		91	100%

3.4 Pospay Access Frequency

Frequency of Pospay Access Respondents using the Pospay service said they often access the Pospay application as many as 31 people (31%). As many as 34 (34%) people say they rarely access the Pospay application, and the least are respondents who say very rarely. People (3.3%) as shown in the following Figure 3 below:

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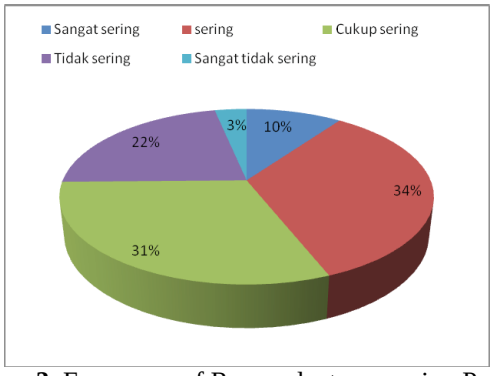

Figure 3. Frequency of Respondents accessing Pospay

3.5 Satisfaction

In the aspect of satisfaction, the payment features that respondents have used in the Pospay application are explained. The type of payment used by most pospay users is to make PDAM payments for as many as 50 people (64%), and the smallest type of payment is tax payments for 1 person (1.28%). For details, in the following Table 2:

TABLE 2
SATISFACTION ASPECT VALUES

Number	Description	Frequency	Percentage
1	PDAM	50	39%
2	Electricity Payment	32	25%
3	BPJS	34	27%
4	Tax	4	3%
5	Savings	4	3%
6	Phone	3	2%
7	Credit and Data	1	1%
Amount		128	100%

3.6 Learnability Aspect

On the aspect of learnability, it can be explained why respondents use the Pospay application. Respondents as many as 35 people (38.5%) reasoned that pospay was available at all post offices, while the lowest was 14 people (15.4%) reasoned that the rates were cheap. For details, in the following Table 4:

TABLE 3
LEARNABILITY ASPECT VALUES

Number	Description	Frequency	Percentage
1	Cheap rates	14	15.4%
2	Fast Service	25	28%
3	Available at all post offices	35	38.5%
4	Safe Transaction	17	18.7%
Amount		91	100%

3.7 Memorability Aspect

Opinions About the Use of pospay on the Postal Service. Respondents' opinions about the use of information technology in Pospay as many as 43 people (44%) said that information technology was useful, and the smallest 18 people (19.8%) of respondents said it was quite useful and very easy to remember, as shown in the following Table 4:

TABLE 4
MEMORABILITY ASPECT

Number	Description	Frequency	Percentage
1	Beneficial	43	47.3%
2	Quite Useful	18	19.8%
3	Very helpful	30	33%
Amount		91	100%

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3.8 Efficiency Aspect

In the efficiency aspect, respondents' opinions about the speed of the Pospay service were explained by 44 people (48.4%) it was fast, and the smallest 1 person (1.1%) said it was very slow, as shown in the following Table 5:

TABLE 5
EFFICIENCY ASPECT

Number	Description	Frequency	Percentage
1	Fast	44	48.4%
2	Fast enough	36	39.6%
3	Slow	2	2.2%
4	Very fast	8	8.8%
5	Very slow	1	1.1%
Amount		91	100%

3.9 Errors Aspect

In the aspect of the error, the problems or errors that are often faced when creating a pospay application account are described in Table 6 below:

TABLE 6
ERRORS ASPECT

Number	Causes	Hint Solution
1	IMEI device not read	• App Updates • Make sure all the requested permissions are allowed
2	The update failed from Lite to LitePlus because the customer identity data based on the NIK does not match the dukcapil data.	• Inform/ensure customer NIK data (name, address, date of birth, biological mother) following the dukcapil version of the data.
3	SMS OTP was not sent	• Make sure the cellphone number entered during registration is correct. • Resend • If it still fails, the Pospay helpdesk hub.
4	Filling in the date of birth during the PIN change process (Customer Forgot Pin) does not match the data during the initial registration	• Make sure the customer fills in the appropriate data. • Escalation of checking can be done through the CGS application. • If you still have problems, contact the Pospay helpdesk.
5	The mobile number used by the customer has been registered in the Pospay Application or Giropos Account	• Check through the CGS Application. If you already have an account, please connect the account. • If there is no data in CGS, contact the Pospay helpdesk.
6	Incorrect user and password entered for login.	• Confirm the user data again with the customer. • If you forget the user, contact the Pospay helpdesk. • If you forget your password, change your password through the application. Required data: cellphone number, date of birth, biological mother's name, and OTP SMS will be sent to the registered cellphone number.
7	Insufficient balance for customer transactions	• Check balance adequacy. Inform the minimum balance of Rp. 10,000.00 (cannot be used for transactions/held by the system). • If the balance is not enough, inform to top up.
8	Location access has not been allowed (allowed by) the customer on his cellphone	• Perform permission (allow) location accessible through the permission settings on the customer's cellphone. • The location feature is needed for transaction security. Pospay uses the application in the background while reading the device id used.
9	Blocking due to wrong password entry error three times, and the login activity system was detected on several devices, so it was blocked as a risk mitigation	• Contact the Pospay helpdesk for recovery, inform the customer's identity according to the NIK, take a photo of yourself, and take a selfie with the NIK.

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10	Error when linking the Giropos account that has been registered with CGS because of the product type The Giropos account is not yet.	The type of account product that cannot be connected to the Pospay Application is a Giropos account with a prefix: • 03xx (B2B account) • 04xx (Service Account) • It can be connected with the Pospay Application. • 05xx (Merchant type account) • 08xx (Digiroin)
11	The Pospay app is not connected to Core Giro	• Make sure the network/internet connection is good. • Restart/Force closed • If it still fails, contact the Pospay helpdesk to confirm whether there is a national disturbance or not.
12	Failed to access the dashboard http://fintech-dashboard.posindonesia.co.id	• Make sure the network/intranet connection is good. • Make sure the address is typed http://fintech-dashboard.posindonesia.co.id • If it still fails, contact the network administrator.
13	Referral data acquisition is not entered in the dashboard.	• Make sure the Referral Code follows the provisions. • Each Marketing Officer has a referral code. • Make sure each installs inputting a registered referral code.

4. Conclusion

Based on the results of the research that has been done, it can be concluded that the indicators that can be used to analyze the extent to which the concept of Human-Computer Interaction (HCI) has been applied in a system include learnability, effectivity, memorability, errors, and satisfaction. Analysis of the application of the concept of human-computer interaction (HCI) on the Pospay application, especially the user side based on the opinions of user respondents, shows that the Pospay application has implemented aspects of learnability, effectivity, memorability, and satisfaction well, but has several shortcomings in the aspect of the error. It can be a concern of application developers to be able to improve services for users.

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