User Experience Engineering
2021

User Research Plan

Bank Of Ceylon Mobile Banking Application

Submitted by:

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User Research Videos Folder Link:
https://drive.google.com/drive/folders/1JZjnwr_J9CtLiuUB-VF8B5e0fBm0-
vpw?usp=sharing

Introduction

This project is based on redesigning an existing mobile application to enhance the user interfaces and user experience of the application. The mobile application we have chosen is Bank of Ceylon Mobile Banking application which is named as "B App". The app enables the users to do the fund transactions, bill payments, credit card payments, view their account details and many more. In this pandemic situation all most all the customers of the banks are encouraged to use the mobile banking or online banking applications.

In order to improve the user interfaces and the user experience of the existing application we must wear the customer's hat. To conduct a user centric development, we need to test the existing application with the involvement of the user. In this user research we will test the application on its functionalities, the user understandability of the functionality flows, user understandability of the performance of the interfaces, usage of the existing functionalities, falling points of the functionality flows and identify the functionalities which are already working well with users.

Through testing the application with the users, we hope to understand how user thinks and looks at each of the functions provided by the application and whether they reach the bankers goals, how far the functions have been useful to users, what are the bad experiences they face while using the application and what will be the improvements or changes that user feels to see in the application.

The user research will be conducted using three methodologies: user interviews, video recordings and questioners. All the data will be gathered and analyzed well in the aim of making our decisions on the changes needed to be done to application in functional wise as well as design wise.

Test Objectives

Usability testing let our design and development team to identify the problems of the existing mobile application and redesign with the changes needed. Some of the main objectives of our testing are as follows,

- Learn if participants can complete specified tasks successfully and identify how long it takes to complete specified tasks.

- Identify the difficulties users are facing while they perform a task.

- Understand what the thinking patters of the users are when they perform the tasks.

- Find out how satisfied participants are with existing application.

- Identify changes required to improve user performance and satisfaction.

- Analyze the gathered data and apply new designs and do needed implementation.

Methodology

We are using 3 methodologies for the user research. Namely, Interviewing, video recording and questionnaires.

For the interviews we are expecting to do with the participation of two users. We will be conducting an online interview through teams. Users will be asked to perform some tasks using the mobile app. Structured interviews will be conducted on them.

Video recordings will be the screen recordings of the mobile phones while the users performing tasks. We will be analyzing the video recordings to identify the paths used by the users, where they will be getting lack of understanding about the interfaces.

The questionnaire will be distributed among more than 10 participants. Google form will be used to gather data.

Once all the data has gathered, we will be analyzing them separately and understand the falling points and the succeeded points. After all we will be come up with are design decisions.

Interviewing

The interview will be conducted with the participation of two registered users of the Bank of Ceylon Mobile application. Structured interview will be conducted via teams. The tasks are created in a way that all the functionalities of the application will be covered along with the general questions regarding the application. All our members in the group will be participating in the interview. Two members will be asking the questions and assigning the tasks while other two users will be taking the note of the user answers and examine the facial expressions of the users while they perform the tasks.

Following is the interview script:

SLIIT
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BSc (Hons) in Information Technology
Software Engineering – Year 3
SE3050 – User Experience Engineering

BOC Mobile Banking Application   **User Research – Interview Script**

Interview Questions Script
(BOC Mobile Banking Application)

- **Introduction**

Hello, I am Jananjali Wickramasinghe. I'll be leading our interview today. I would like to warmly welcome you and thank you for making time to speak with us today. Your feedback is really valuable and will be used to make our team's future design decisions.

As you know we are conducting the interview on assessing the user experience and user friendliness of the Bank of Ceylon Mobile Banking Application. I would like to ensure you that there are no wrong answers, you are the expert here.

With your permission, I have start recording the interview and the recording will not be shared with anyone else other than our team and marking panel. May I confirm it from you again?

We're doing this to improve the mobile application, so we need to hear your honest reactions. During this interview, I'll ask you a few questions around registration, login, third party account transfers and viewing account. After that my colleague Ravindu will continue own account transactions and bill payment experience of the application. While other two members will take down notes on your answers and will examine your facial expressions.

Can you please talk aloud to us what you are thinking in your mind while you perform the tasks, and also can you please switch on screen recording of the mobile while you do the tasks?

Do you have any question for me or are we good to go?

Thank you!

- **Warm up**

    1. We would like to hear little bit about yourself.

       Thank you for the context.

- **Topic- Specific**

    2. How long are you using the application?
    3. What have you felt while using the application? – what do you think or feel about it?
    4. Assume that you are a new user can you find the path to register yourself?
    5. Can you please instruct how you are going to do further in registration?
    6. Since you are already a registered user can you remember the experience, you got when you are registering to the app. Can you please share your ideas?
    7. Please can you log in to the application.

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8. Have you ever viewed the profile and changed your password? Can you show us how you will view the profile and change the password?
9. What do you like about the app?
10. Assume a user need to view their accounts in the bank. Can you show us how to use the application to do it?
11. Are you satisfied with the given details?
12. Assume a person needs to see their fixed deposits separately. How would you do it using the application?
13. Assume that you need to transfer semester fee to SLIIT BOC account. How would you perform it?
14. Assume you need to view your checks how would you perform it?
15. Assume you need to view your transaction details is there way to do it using the application?
16. Assume you need to add a beneficiary to the list. How would you do it? Can you instruct us?
17. Have you used the favorites functionality? Why do you use it? Can you show how you use it?
18. Have you used Budget calculator? Was it useful?
19. Do the given contact details were useful to you?
20. Were there any incident the messages had helped you. How frequently you check upon them.

Thank you very much. Ravindu will continue some more tasks.

21. Assume that you need to transfer some amount from your savings account to your current account which is in BOC. How would you perform it?
22. Assume that you have to do an electricity bill payment. Can you show us how you would perform it?
23. Assume that you need to add billers to the list. How would you perform it?
24. How do you felt when using the application?
25. What are the things you would remove from the app if you can do?
26. What is the thing you would like to see in the improved app?

That's all from me. Thank you and you can take up the session Jananjali.

Thank you Ravindu. Isuri and Mihisuru do you all have anything to be clarified?

- **Wrap up**

Thank you very much for rendering your valuable time on be half of us. Your feed backs are important for us. Once again Thank you very much and have a nice day.
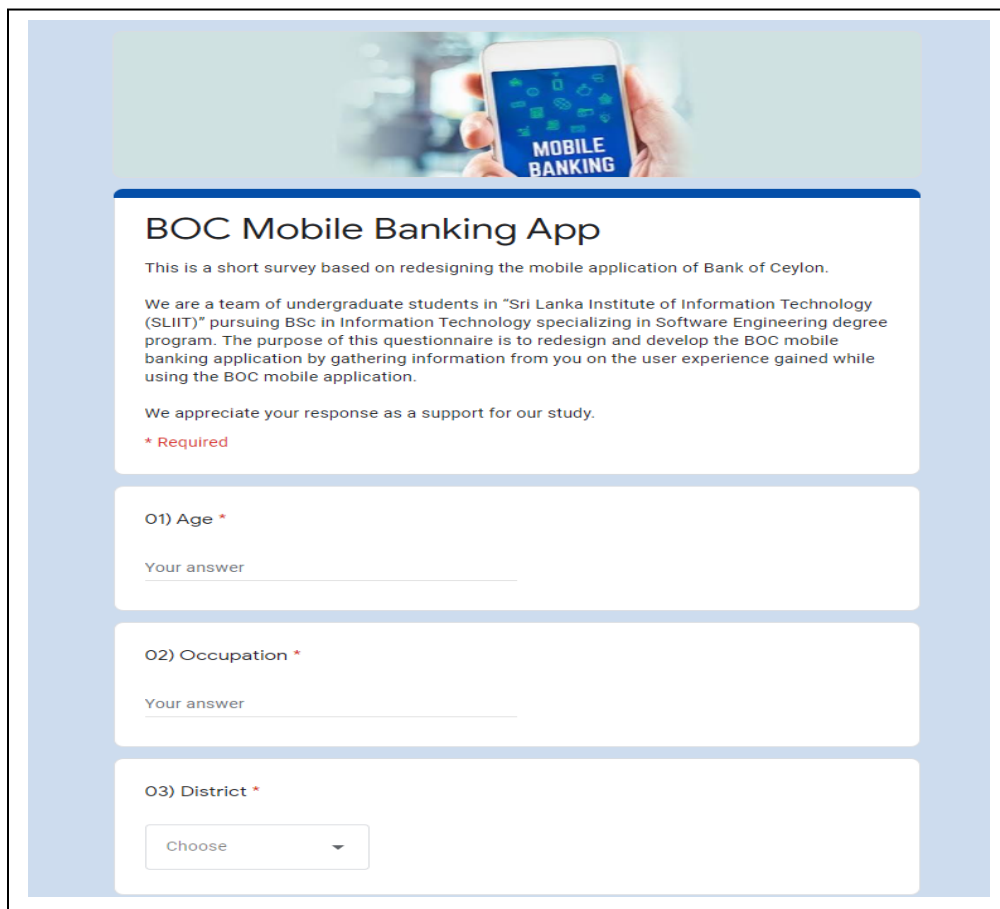
video recording

This screen record is obtained with the participation of two users who have registered with the BOC bank's online banking app while they perform the stated tasks in the interview. The tasks were designed to cover all the functionalities of the application. Our goal is to check the time it takes for the user to do something through the app, Identify pain points and the pleasure points.

Questionnaire

The survey questions were designed to cover the following factors.

- Simple user demography.
- User behavior with the app.
- User impression about the app.
- Cover all the functionalities in the app.

This survey was distributed among the users who use the BOC mobile app specifically. We got 12 responses totally. the respondents age category was 22-27 years and were from many districts in Sri Lanka. As we used a google form to collect data, we were able to get an auto generated summary report. Based on the summary report it was easy for us to further analyze the qualitative and quantitative data.

04) How frequently you are using the below functionalities of the app? *

- ☐ View Accounts
- ☐ Check Balance
- ☐ 3rd Party Transfers
- ☐ Pay Bills
- ☐ Own Account Transfers

05) How long are you using the app? *

- ○ 0-3 months
- ○ 3-6 months
- ○ 6-9 months
- ○ 9-12 months
- ○ More than 1 year

06) How often do you use the app? *

- ○ Always
- ○ Very Often
- ○ Sometimes
- ○ Rarely
- ○ Never

07) What do you like the most about the app? *

- ○ Colours used
- ○ Interfaces
- ○ Used fonts
- ○ Navigation
- ○ Flow of activities
- ○ Simplicity
- ○ Nothing in specific
- ○ Other:

08) What do you dislike the most about the app? *

○ Colors used

○ Interfaces

○ Used fonts

○ Navigation

○ Flow of activities

○ All

○ bit Complex

○ Other: _____

09) How is your experience on the registration process of the app? *

☐ Easy registration

☐ More documentation

☐ Too many steps to complete

☐ Unnecessary details required

☐ Consume more time

10 a) Do you face any issues when log in to the app? *

○ No

○ Yes

10 b) If yes please state your issue.

Your answer

11) How is your experience on third party transaction process of the app? *

☐ Easy to use

☐ Difficult to understand the flow

☐ Adding frequently used beneficiary details to the list is very help full

☐ Adding all the beneficiaries who are not frequently used leads to complex lists

11) How is your experience on third party transaction process of the app? *

☐ Easy to use

☐ Difficult to understand the flow

☐ Adding frequently used beneficiary details to the list is very help full

☐ Adding all the beneficiaries who are not frequently used leads to complex lists

12) How is your experience on bill payment process of the app? *

☐ I prefer the way it proceeds

☐ Too many steps to complete

☐ Difficult to understand the flow

☐ Adding frequently used biller details to the list is very help full

☐ Adding all the billers who are not frequently used leads to complex lists

13) How frequently you do own account transactions? *

○ Always

○ Very often

○ Sometimes

○ Rarely

○ Never

14) Are you satisfied with the flow of the own account transactions? *

○ Very satisfied

○ Satisfied

○ Neutral

○ Not satisfied

○ Very dissatisfied

15) How do you prefer to view the account details? *

- ☐ View all type of account in the bank
- ☐ View only the registered account details
- ☐ View transaction details along with the account

16) On a scale of 1 to 5 rate the usefulness of below features *

	1	2	3	4	5
Budget Tracker	○	○	○	○	○
Alerts	○	○	○	○	○
Messages	○	○	○	○	○
favorites	○	○	○	○	○

17) How satisfied are you with the following? *

	Very Satisfied	Satisfied	Neutral	Not Satisfied	Very Dissatisfied
Quality of product/service	○	○	○	○	○
Responsiveness to your inputs	○	○	○	○	○
Customer support availability	○	○	○	○	○
Features of the product/service	○	○	○	○	○
Security of the transactions	○	○	○	○	○

18) How easy are the following operations? *

	Very Difficult	Somewhat Difficult	Neither Difficult Nor Easy	Somewhat Easy	Very Easy
Learning to operate the system	○	○	○	○	○
Exploring new features by trial and error	○	○	○	○	○

19) Please state your level of agreement for the following. *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
System always informs about the progress of the task	○	○	○	○	○
Error messages are helpful	○	○	○	○	○
Prompts for inputs are clear	○	○	○	○	○

20) Mention the features you would like to be added to the mobile app.

Your answer

21) Mention the features you would like to be removed from the mobile app.

Your answer

22) Mention the issues faced while using the app.

Your answer

23) Would you recommend this app to another person? *

○ Yes

○ No

Submit

Participant Profiles

The table below provides a breakdown of the participants selected for testing:

Name	Demography	Location, Date and Time
Sumudu Edirisinghe	Entrepreneur Upper-middle level income.	Online Interview via teams
Vimukthi Munasinghe	Bio Medical Student at KDU Tech savvy.	Online Interview via teams
	Accountant at 'Hemas Holdings' Upper-middle level income.	Online questionnaire
	Business Analyst at 'MicroTech' company Middle level income. Business oriented technical capability.	Online questionnaire
	22 years old, 3rd year IT Undergraduate at SLIIT Tech savvy.	Online questionnaire
	23 years old, 2nd year medical student at University of Peradeniya.	Online questionnaire
	27 years old, Civil Engineer at RDA Matara. Upper-middle level income	Online questionnaire

User Research – Tasks/Scenarios

- Task were design to cover all the functionalities in the mobile application.

No.	Task Instruction	Target	Probes
1	Assume that you are a new user can you find the path to register yourself?	Identify whether the user can understand the design of the interfaces.	Was it easily visible?
2	Can you please instruct how you are going to do further in registration?	Identify whether registration flow is clear to the user. Find pain points of the path.	What do you feel about the process?
3	Please can you log in to the application.	Find succession of login	Are you okay with the time it takes to log in.
4	Can you show us how you will view the profile and change the password?	See if it is possible to change the password in an emergency.	Are you satisfied with the profile details?
5	Assume a user need to view their accounts in the bank. Can you show us how to use the application to do it?	To clarify whether the user understands the user interface elements usage.	Can you find another way to do it?
6	Assume a person needs to see their fixed deposits separately. How would you do it using the application?	This is a hidden option in the application. So, we use this do clarify whether user can find those out and what would they think about the process	Was it use full to you? Was it difficult to find out?
7	Assume that you need to transfer semester fee to SLIIT BOC account. How would you perform it?	Identify whether user have good knowledge of selecting the correct option for their need.	How do you feel about the flow?

9	Assume you need to view your checks how would you perform it?	This is a hidden option in the application. So, we use this do clarify whether user can find those out and what would they think about the process.	How frequently you use it? Was it useful to you?
10	Assume you need to view your transaction details is there way to do it using the application?	Find out whether the user have found out the important hidden transaction details viewing option. To know how they feel about it.	How frequently you use it?
11	Assume you need to add a beneficiary to the list. How would you do it? Can you instruct us?	Find out the pain points the user would go through while adding each beneficiary to the list.	What do you think about the option? What do you feel?
12	Assume that you need to transfer some amount from your savings account to your current account which is in BOC. How would you perform it?	Find out how familiar the user is with the option. Identify any falling point while performing the task. Identify Whether there is a good connection between the accounts.	How did that make you feel? What do you feel?
13	Assume that you have to do an electricity bill payment. Can you show us how you would perform it?	How they perform selecting the biller category and giving other details to add a biller to the system correctly.	How did that make you feel?
14	Assume that you need to add billers to the list. How would you perform it?	Find out the pain points the user would go through while adding each and every biller to the list.	Why did you do that? What do you feel?

Plan for Data analysis

Interviews

Recordings

First interview recording link:

https://drive.google.com/drive/folders/1glcDQ_GmqyoQON4CC6ihZrVdtj_xwX-t?usp=sharing

Second interview recording link:

https://drive.google.com/drive/folders/1wnWelGduDouovoPc67rGrANDX7upP0q_?usp=sharing

Qualitative or quantitative collected data

Interview Questions & Given Answers
First Interviewee
(BOC Mobile Banking Application)

- **Introduction**

Hello, I am Jananjali Wickramasinghe. I'll be leading our interview today. I would like to warmly welcome you and thank you for making time to speak with us today. Your feedback is really valuable and will be used to make our team's future design decisions.

As you know we are conducting the interview on assessing the user experience and user friendliness of the Bank of Ceylon Mobile Banking Application. I would like to ensure you that there are no wrong answers, you are the expert here.

With your permission, I have start recording the interview and the recording will not be shared with anyone else other than our team and marking panel. May I confirm it from you again?

Yes of course.

We're doing this to improve the mobile application, so we need to hear your honest reactions. During this interview, I'll ask you a few questions around registration, login, third party account transfers and viewing account. After that my colleague Ravindu will continue own account transactions and bill payment experience of the application. While other two members will take down notes on your answers and will examine your facial expressions.

Can you please talk aloud to us what you are thinking in your mind while you perform the tasks, and also can you please switch on screen recording of the mobile while you do the tasks?

Okay I will do it.

Do you have any question for me or are we good to go?

You can continue this.

Thank you!

- **Warm up**

    1. We would like to hear little bit about yourself.
       I am Sumudu Edirisinghe. I am from Dikkwalla. I am a self-employed person. I got graduated from Eastern University Sri Lanka. I followed computer science, physics, applied mathematics as my main subjects.

       Thank you for the context.

- **Topic- Specific**

BOC Mobile Banking Application   **User Research – Interview Script**

2. How long are you using the application?

   Now it is almost 3 years.

3. What have you felt while using the application? – what do you think or feel about it?

   Sometimes it easy my works. Because I am leading a busy life sometimes, I could not go to bank At that time could not go to bank at that time I can do my transactions. So, it easy my works.

4. Assume that you are a new user can you find the path to register yourself?

   Yes I can.

5. Can you please instruct how you are going to do further in registration?

   First of all have to take app from mobile. Here it gives this interface. It ask about your username, password and sign in or register now. Now I am going to register as a new user. So I selected this register now button. Then I can get a option here. That is a drop down option. It asks about debit card customer.

   Are there more options available to register as?

   No there is only debit card customer.

   I will continue this. I enter debit card number, then I should select my country here,Then I should enter my phone number, Then should give my email address here, after that I should type security code.

   Is it provide by the banker?

   No here they have sked to enter the given security code.

   I will continue registration. Since I am a registered customer, I cannot go forward. But if you are not a registered customer after this they will ask to answer five security questions. After that you will get a username to your email and a password to your mobile. You can log in using them.

6. Since you are already a registered user can you remember the experience, you got when you are registering to the app. Can you please share your ideas?

   Complex and have long steps.

7. Please can you log in to the application.

   Yes. The bank have provided me a log username with 10 digits which is difficult to memories. So I changed my username using the web application using a computer device.

   Are you given the option to change username using mobile application?

   No we cannot change it using mobile.

   Do you prefer having it in the mobile app?

   Yes, because we usually don't use mobile app.

8. Have you ever viewed the profile and changed your password? Can you show us how you will view the profile and change the password?

   Yes, I changed the password. In the dashboard I cannot view my profile. Through experience I know how to change the password. Here I have to provide existing password, new password, confirm password and submit.

9. What do you like about the app?

   I like to do transactions, bill payments, and settle my credit card using the application.

10. Assume a user need to view their accounts in the bank. Can you show us how to use the application to do it?

In the interface you can see my assets and liabilities. I am clicking assets; it takes time to load. It shows current and savings and fix deposits. Now I choose currents and savings. It shows my accounts in here and will view my one of the accounts. It shows only account number and the branch and 10 or few transactions here.

11. Are you satisfied with the given details?

I am not satisfied with the given details. It is better if provide view transactions from dashboard.

12. Assume a person needs to see their fixed deposits separately. How would you do it using the application? Answered above.

13. Assume that you need to transfer semester fee to SLIIT BOC account. How would you perform it?

From more options select transfers. Then we should add this beneficiary. Then I should select that. Then you can press on plus mark on the interface. I will select that. I will add beneficiary name nick name and account here.

What do you feel about adding beneficiaries?

It is difficult because not using always.

14. Assume you need to view your transaction details is there way to do it using the application?

Answered above

15. Assume you need to add a beneficiary to the list. How would you do it? Can you instruct us?

Answered above

16. Have you used the favorites functionality? Why do you use it? Can you show how you use it?

No actually I am not using that.

That is not useful for me.

17. Have you used Budget calculator? Was it useful?

No I am not using that also.

That is not useful for me.

18. Do the given contact details were useful to you?

That is useful. When app is not working I call them and they prepare it.

19. Were there any incident the messages had helped you. How frequently you check upon them.

No I am not using that. I don't frequently check on messages.

Thank you very much. Ravindu will continue some more tasks.

20. Assume that you have to do an electricity bill payment. Can you show us how you would perform it?

From more options I click pay bills. First, I will add the utility biller. Previously I added from add option. I select pay utility bill option. Then I have to select customer, then payee, then I select next here. Now I will select the account and amount should be transferred. Here also they give three options. Pay now, pay on, Pay periodically.

21. Assume that you need to add billers to the list. How would you perform it?

Answered above.

22. How do you felt when using the application?
Sometimes I felt difficulties. Sometimes it is helpful to do transactions from home.
23. What are the things you would remove from the app if you can do?
Favorite option and message option.
24. What is the thing you would like to see in the improved app?
Favorite option and message option.
Also budget option.
The steps are also too long.

That's all from me. Thank you and you can take up the session Jananjali.

Thank you Ravindu. Isuri and Mihisuru do you all have anything to be clarified?

- **Wrap up**

Thank you very much for rendering your valuable time on be half of us. Your feed backs are important for us. Once again Thank you very much and have a nice day.

Interview Questions & Given Answers
Second Interviewee
(BOC Mobile Banking Application)

- ### Introduction

Hello, I am Jananjali Wickramasinghe. I'll be leading our interview today. I would like to warmly welcome you and thank you for making time to speak with us today. Your feedback is really valuable and will be used to make our team's future design decisions.

As you know we are conducting the interview on assessing the user experience and user friendliness of the Bank of Ceylon Mobile Banking Application. I would like to ensure you that there are no wrong answers, you are the expert here.

With your permission, I have start recording the interview and the recording will not be shared with anyone else other than our team and marking panel. May I confirm it from you again?

Yes, I will.

We're doing this to improve the mobile application, so we need to hear your honest reactions. During this interview, I'll ask you a few questions around registration, login, third party account transfers and viewing account. After that my colleague Ravindu will continue own account transactions and bill payment experience of the application. While other two members will take down notes on your answers and examine your expressions.

Can you please talk aloud to us what you are thinking in your mind while you perform the tasks and also can you please switch on screen recording while you do the tasks?

Okay I will do it for you.

Do you have any question for me or are we good to go? Hmm...

No we are good to go.

Thank you!

- ### Warm up

  1. I would like to hear little bit about yourself.
     I am a Biomedical Science undergraduate student.
     Thank you for the context.

- ### Topic- Specific

  2. How long are you using the application?
     I am using it about a year now.

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BOC Mobile Banking Application   User Research – Interview Script

3. What have you felt while using the application? – what do you think or feel about it?
It is somewhat difficult to handle. But it helps a lot doing transactions in this pandemic situation. Many options are there but they cannot be identified straightly.

4. Can you find the path to register a new user?
Yes, I can find

5. Can you please instruct how you are going to do further in registration?
Yes, I will... now I am going to click on BOC app icon on my mobile. Then I am getting this screen with sign in button. I am now clicking it. In this interface there is a tab called register now. I am now going to click it. Then they ask for my debit card number. I will enter some value for you just to demonstrate. Then must enter the country, mobile number, and email. Then must enter a security code. Now I am going to click on continue. It says that my mail is incorrect. Seems they haven't validated my card number. I thought that will be the error I will get first.

6. Since you are already a registered user can you remember the experience, you got when you are registering to the app. Can you please share your ideas?
After this process they send us a mail with the username and the password to the mobile. Then we must enter them in the next interface. After that they ask to agree to the terms and conditions. Again, after that they let you to choose a new password. After continuing it I will have to answer 5 security questions selecting from 20 questions. Then when I submit it I will be given to re login.

I feel like it is a lengthy process with unnecessarily added steps. Selecting 5 questions from 20 questions is a time waste. The user ID is difficult to remember and cannot change using the application.

7. Please can you log in to the application.
Yes, I will.

8. Have you ever viewed the profile and changed your password?
I did not recognize a profile with details. But I have changed the password.

9. Can you show us how you will view the profile and change the password?
Yes. I have to click on more options. Then I get a drop down. Then I selected my profile. I get only change password tab there are no profile details. Now I am clicking on it. It asks me existing password, new password and confirm password. I can enter them and submit. Then I get a otp to enter as I have experienced. Once done I will be directed to re login.

10. What do you like about the app?
I mostly use third party transactions and pay bills, so I like that feature.

11. Assume a user need to view their accounts in the bank. Can you show us how to use the application to do it?
Yes. I will click on accounts. Then It shows current and savings tab, now I am clicking on it. It shows the account numbers of branches and available balances. Again, I must click on account tab then I can view details.

12. Are you satisfied with the given details? Yes, details are okay. But I would like if they can reduce the number of steps to be selected.

13. Assume a person needs to see their fixed deposits separately. How would you do it using the application?

    I have not tried. Let me try for you. Hmm it is not in accounts. Let me see in more option. I shall try accounts option since it is an account type. Ah here it is... I cannot view since I do not have any.

14. Assume that you need to transfer semester fee to slit Boc account how would you perform it.

    Hmm... Since it is a third-party account, I will choose third party accounts, I will get an option to add account. Now I am clicking on add button. Then I am asked to enter beneficiary name, nick name, account number and email. Then now I am filling them...Now I am going to click on OK. Here they send me a otp. Now I am entering it. Now it is added to the beneficiary list.

    Now I am clicking on third party transfers BOC option. Now I selected SLIIT as pay account then I selected Source account. That is one of my accounts. Now I am typing 175 000 as amount, then select LKR as Currency. Now I am typing fees as description. Now I can choose Pay now to do the transaction now. There are options like pay on or pay periodically too.

15. Have you used the favorites functionality? Why do you use it?

    No, I have not used it. I do not know about it.

16. Have you used Budget calculator? Was it useful?

    I have not used it either. I do not think so. Because I never wanted to use it.

17. Do the given contact details were useful to you?

    Yes. But the location button is there which does not show any nearest location.

18. Were there any incident the messages had helped you. How frequently you check upon them.

    I have seen it always empty. I have not received any.

    Thank you very much. Ravindu will continue some more tasks.

19. Assume that you need to transfer some amount from your savings account to your current account which is in BOC. How would you perform it?

    Okay.... Hmmm I am selecting Own account Transfers. Then now I select pay account, source account, amount, and description as little fee. Then I can choose a pay option. Once done By experience I know that a OTP will be asked and the transaction will be done. Since this is not needed, I will cancel this.

20. Assume that you must do an electricity bill payment. Can you show us how you would perform it?

    Yes. I selected bill payments. Then I got to select customer and payee... Hmm there is only dialog and mobile bill payment... Shall I just select that? Then It asks me phone number. I cannot proceed since they do not accept my number.

    Hmm... I shall try to add electricity biller. For that let me check more options and then I will now click pay bills. There I can see view/add utility biller. Then now I will press on plus mark, then I will now select customer and bill category as electricity then I can select biller and biller type. Then I am clicking on next it shows details to me and I click confirm. They sent me a OTP I will type it.

Now I got a confirmation. Now I will be able to continue... Then I will now select more option and go to pay bills and select pay utility bill. I am entering the customer and payee here they ask the account no. I will try entering something... It says account no is invalid but if it is correct, I think Next, they send me OTP so I can enter it and do the transaction.

21. How do you felt when using the application?
It takes time to find the options in the application. It consumes time to learn and understand the flow. Some simple things are done in a complex manner. How ever I can manage with it in this covid pandemic.

22. What are the things you would remove from the app if you can do?
I will remove favorite option.

23. What is the thing you would like to see in a improved app.
I will reduce the unnecessary steps in registering.
I will enable to proceed bill payments and transactions without adding all the accounts to lists.
I will reduce number of options in paying I feel it a unnecessary burden.
I cannot find what is clickable and not. So I would like to use much improved and understandable interface.

That's all from me. Thank you and you can take up the session Jananjali.

Thank you Ravindu. Isuri and Mihisuru do you all have anything to be clarified?

- **Wrap up**

Thank you very much for rendering your valuable time on behalf of us. Your feed backs are important for us. Once again Thank you very much and have a nice day.

Detail analysis plan

When we analyze the data gathered by the interviewee answers and the performance of the tasks that they have gone through we can come up with the below facts.

- The users are facing difficulties in the registration process due to its unnecessary numbers of steps required.

- The users get confused when they find unnecessary drop-down selections in the application.
  Ex: user type drop-down in registration.

- Users cannot identify the clickable interfaces and the non-clickable interfaces in the application.
  Ex: Account details are shown on a card and have to click on it to view transaction details, but the interface seems non-clickable.

- Many options are available, but they are almost hidden. User has to work on a long time to find the way to do those hidden activities.
  Ex: view credit card details, view checks, view accounts, view profile, change password, add beneficiaries, add billers.

- Unnecessary options which are rarely used by the customers are in the dashboard where the important functions are hidden.
  Ex: Favorite option is not used by either of the users.
       Budget calculator is not used by either of the users.
       Messages are not used by either of the users.
       Transaction details are hidden.
       Profile details are hidden.

- Users dislike the option to add every beneficiary or the biller to their lists before to perform each transaction.

- They prefer having the option to continue transactions without adding the beneficiary or biller to the lists.

- Users like having the frequently used beneficiaries and billers in their lists.

- Users prefer changing the username they got as a 10-digit number to a easily memoizable word via mobile application.

- Users appreciates the 3 paying options having in the transactions.

- Users commonly use the app for third-party transactions, bill payments and credit card payments.

- Users rarely do own account transactions.

- Most users love to have a way to access their transaction details via dashboard.

- The Pay Bills button on the dashboard will leads only to pay bills form and there is no way to navigate backwards or to add the billers. Users do the process by their previous learnings.

- Users are happy about having an mobile application to do their transactions without going to the bank specially in the pandemic situation.

Video recordings

First video recording link:

https://drive.google.com/drive/folders/1J3cTV4n6ignLeiPQIglKzfg6VJ6tD90y?usp=sharing

Second video recording link:

https://drive.google.com/drive/folders/1DarEdijZafyTkRtbKmjYqpPYXl4RHpIJ?usp=sharing

Qualitative or quantitative collected data

Video 1 – (00:12 - 00:37) - Although there is a drop down box when filling the form, there is only one option to select.
          (03:56 - 06:10) - Difficulty changing profile details.
          (08:05 - 12:26) - Transaction details are difficult to find.
          (12:26 - 13:26) -. The app is   slow.

Video 2 – (02:00 – 02:10) - user takes time to identify how to do backward navigation
          (02:30 – 03:06) - The last part of the name is not typed while typing the beneficiary name.
          (03:50 - 3:55) - Unable to get OTP code.

Detail analysis plan

- The app may have an unwanted interface due to the use of incompatible UI elements.

- Some user interfaces are not user friendly.

- Some UI elements are difficult for the user to identify.

- Critically limited number of characters that can be typed in some text boxes.

- No back buttons to switch between interfaces.

- Some steps are unnecessary when filling out the form and are not clear to the user.

- Unnecessary time-consuming tasks.

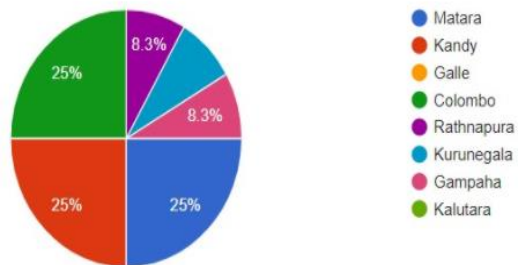- Third party service sometimes does not work.

Questionnaires

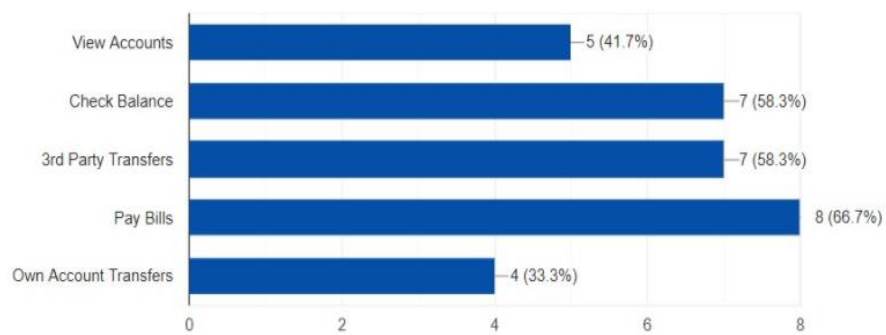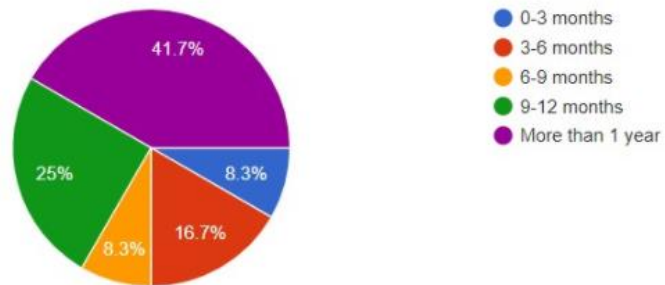## Qualitative or quantitative collected data

01) Age
12 responses

02) Occupation
12 responses
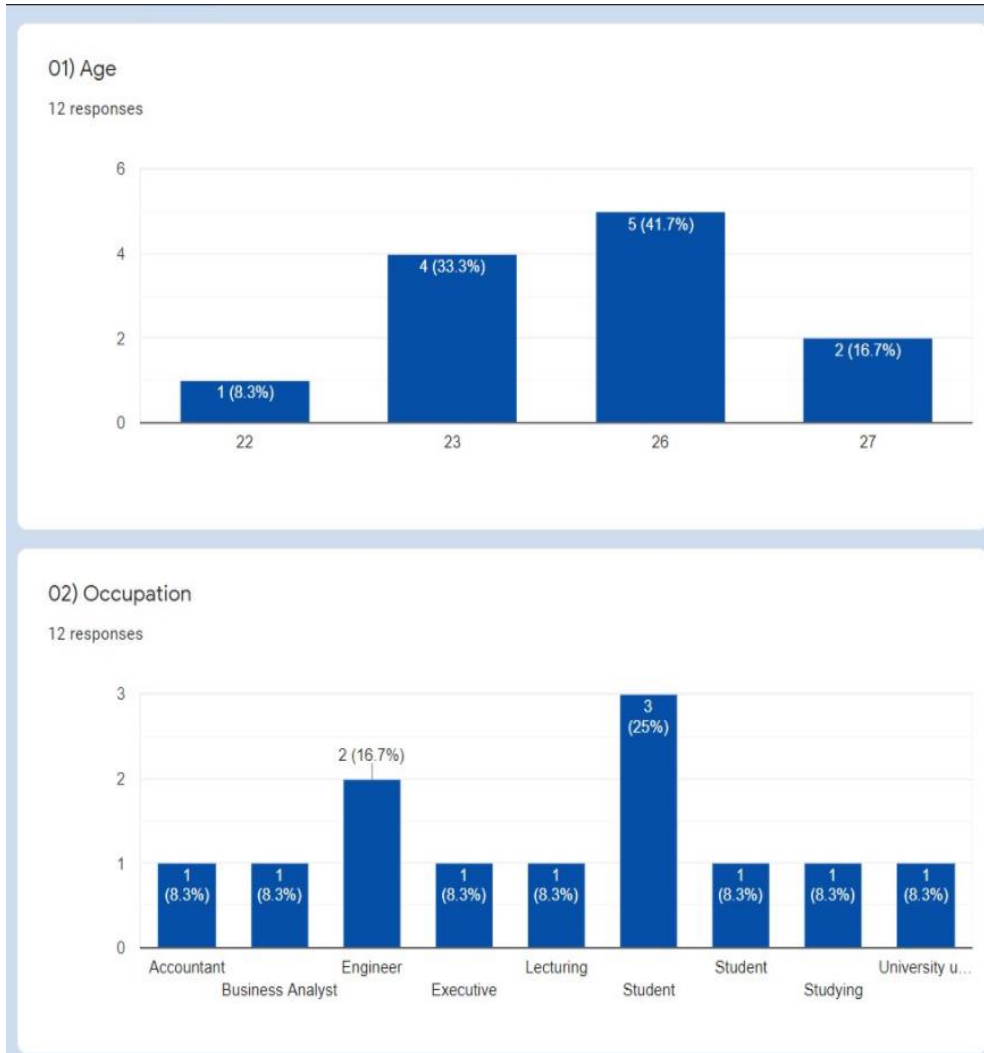
03) District

12 responses

- Matara
- Kandy
- Galle
- Colombo
- Rathnapura
- Kurunegala
- Gampaha
- Kalutara

04) How frequently you are using the below functionalities of the app?

12 responses

Functionality	Responses
View Accounts	5 (41.7%)
Check Balance	7 (58.3%)
3rd Party Transfers	7 (58.3%)
Pay Bills	8 (66.7%)
Own Account Transfers	4 (33.3%)

05) How long are you using the app?

12 responses

- 0-3 months
- 3-6 months
- 6-9 months
- 9-12 months
- More than 1 year

41.7%
8.3%
16.7%
8.3%
25%

06) How often do you use the app?

12 responses
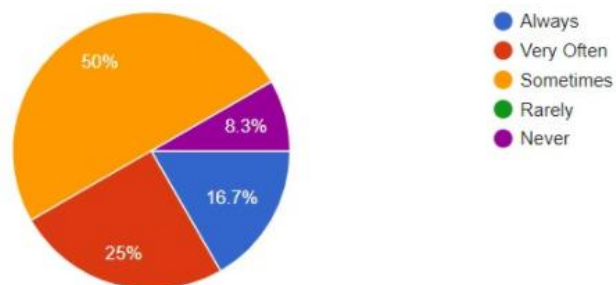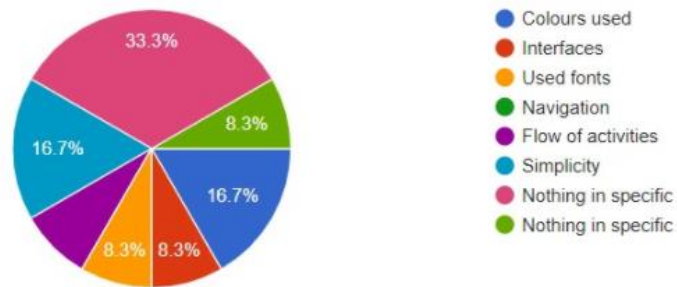
- Always
- Very Often
- Sometimes
- Rarely
- Never

50%
8.3%
16.7%
25%

07) What do you like the most about the app?

12 responses

- Colours used
- Interfaces
- Used fonts
- Navigation
- Flow of activities
- Simplicity
- Nothing in specific
- Nothing in specific

33.3%
8.3%
16.7%
16.7%
8.3% 8.3%

08) What do you dislike the most about the app?

12 responses

- Colors used
- Interfaces
- Used fonts
- Navigation
- Flow of activities
- All
- bit Complex

33.3%
16.7%
16.7%
8.3%
25%

09) How is your experience on the registration process of the app?

12 responses

Response	Count
Easy registration	4 (33.3%)
More documentation	2 (16.7%)
Too many steps to complete	7 (58.3%)
Unnecessary details required	5 (41.7%)
Consume more time	5 (41.7%)
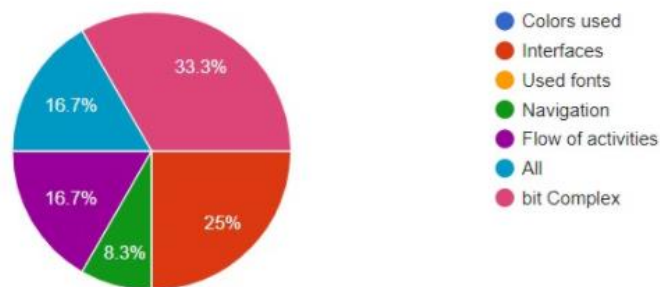
10 a) Do you face any issues when log in to the app?

12 responses

- No — 58.3%
- Yes — 41.7%
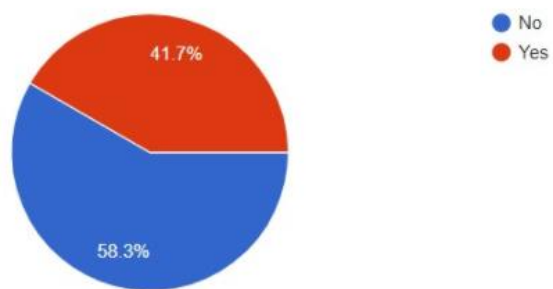
10 b) If yes please state your issue.

5 responses

I have to log in multiple times.

have to login multiple times and it takes too many times. in some situations app doesn't respond.
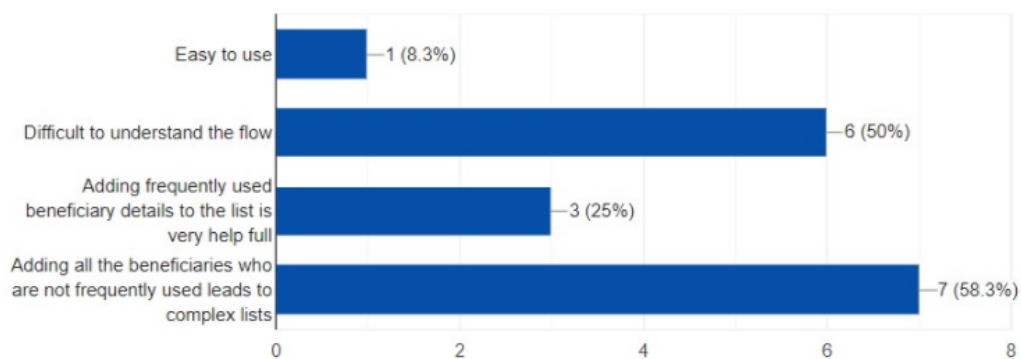
User experience is 0

Always have to enter the username and the password.. very time consuming when in hurry

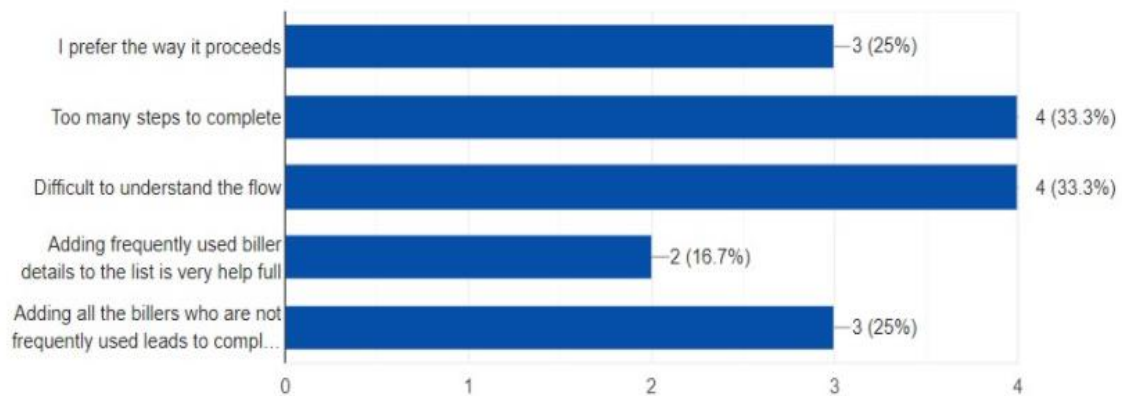Better of it supports face recognition

11) How is your experience on third party transaction process of the app?
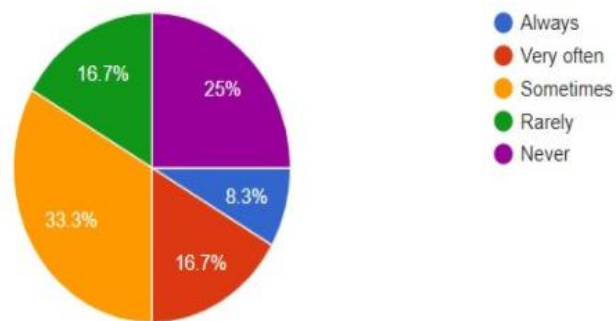
12 responses

12) How is your experience on bill payment process of the app?

12 responses

Option	Count
I prefer the way it proceeds	3 (25%)
Too many steps to complete	4 (33.3%)
Difficult to understand the flow	4 (33.3%)
Adding frequently used biller details to the list is very help full	2 (16.7%)
Adding all the billers who are not frequently used leads to compl...	3 (25%)

13) How frequently you do own account transactions?

12 responses

- Always — 8.3%
- Very often — 16.7%
- Sometimes — 33.3%
- Rarely — 16.7%
- Never — 25%

16) On a scale of 1 to 5 rate the usefulness of below features

Legend: 1 (blue), 2 (red), 3 (orange), 4 (green), 5 (purple)

Categories: Budget Tracker, Alerts, Messages, favorites

17) How satisfied are you with the following?

Legend: Very Satisfied, Satisfied, Neutral, Not Satisfied, Very Dissatisfied

Categories: Quality of product/service, Responsiveness to your inputs, Customer support availability, Features of the app, Security of the transactions

18) How easy are the following operations?

Legend: Very Difficult (blue), Somewhat Difficult (red), Neither Difficult Nor Easy (orange), Somewhat Easy (green), Very Easy (purple)

Learning to operate the system: Very Difficult 3, Somewhat Difficult 4, Neither Difficult Nor Easy 3, Somewhat Easy 1, Very Easy 1

Exploring new features by trial and error: Very Difficult 3, Somewhat Difficult 3, Neither Difficult Nor Easy 4, Somewhat Easy 1, Very Easy 1

19) Please state your level of agreement for the following.

Legend: Strongly Disagree (blue), Disagree (red), Neutral (orange), Agree (green), Strongly Agree (purple)

System always informs about the progress of the task: Disagree 1, Neutral 4, Agree 7

Error messages are helpful: Disagree 5, Neutral 5, Agree 2

Prompts for inputs are clear: Disagree 2, Neutral 6, Agree 4

20) Mention the features you would like to be added to the mobile app.

5 responses

Visible profile details.

User interface or more simplicity

Just type the 3rd party account details and transfer the amount rather than first adding it to the beneficiary list

In Mac app need the feature to add other bank credit cards under add beneficiaries

Simplify the complex features and make it user friendly.

21) Mention the features you would like to be removed from the mobile app.

6 responses

Remove the favorite option.

remove the feature of adding beneficiary accounts to a pre-list. instead let us input beneficiaries at the transaction time.

Please make sure to display the username already in there. So we can type the password and log.. really a heasche to type all the things again and again.. other mobile banking apps are easy to use.

Opening too many tabs

Background image - not a big concern though

Simplify the app registration process and payment process. Better to provide E-vouchers to fill out and do the transaction quickly and easily. (few steps)

22) Mention the issues faced while using the app.

7 responses

App takes too much time to load.

overall the app takes too much time to load. updates doesn't work well. i had to check via the bank after some transactions because did not get the confirmation message from the app.

third party transactions is very difficult to understand and too many confusions while doing it. please use a better and simple way to do third party transactions.

No way to pay bills for hutch mobile payments.

1. Too many clicks for a process
2. Too many tabs are opened for a given feature
3. Not user friendly and features are hidden
4. Validating 3rd party account details will be beneficial

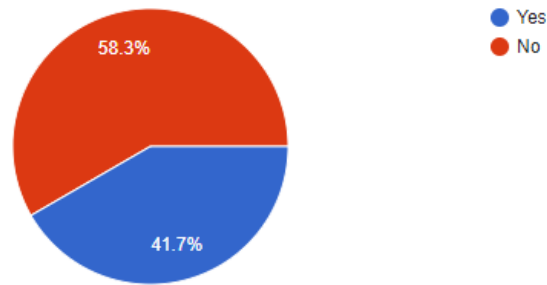When I change the keyboard from Sinhala to English, app crashed several times.

Can't add other bank credit cards under add beneficiaries.

App is slow...

Had to watch YouTube videos to understand the steps.
More time consuming.

23) Would you recommend this app to another person?

12 responses

- Yes
- No

58.3%

41.7%

Detail analysis plan

As a team we all had a discussed and analyzed the responses we got and came up with the below crucial findings.

- Most of the users use the app to pay utility bills, third party account transactions and check their account balance.

- Most of the users had a negative experience in the app registration process. Comparatively only 33% of users had an easy registration process.

- 58% of users had difficulty logging in. most of them had to login multiple times and complained about the frustration on taking too much time to login to the app.

- Over 50% of users finds it's hard to understand the flow of navigation in the third-party transactions.

- Over 50% of users doesn't prefer adding beneficiary details to a list before a transaction.

- The feedback for the bill payment experience has fairly equal shares for both positive and negative experience.

- 83% of users prefer to view the transaction details along with their accounts.

- Most of the participants did not see the importance of a budget tracker and favorites options.

- Most of the users finds it somewhat difficult to learn to operate the system.

- Most of the users disagree with error messages are helpful.

- Users request a proper view of a user profile.

- App should be more user friendly and interface design needs to be more professional.

- A better simplified user flow is recommended for most of the functionalities.

Appendices

We have attached our interview script and the questionnaire used in conducting above user research.

Interview Questions Script
(BOC Mobile Banking Application)

- **Introduction**

Hello, I am Jananjali Wickramasinghe. I'll be leading our interview today. I would like to warmly welcome you and thank you for making time to speak with us today. Your feedback is really valuable and will be used to make our team's future design decisions.

As you know we are conducting the interview on assessing the user experience and user friendliness of the Bank of Ceylon Mobile Banking Application. I would like to ensure you that there are no wrong answers, you are the expert here.

With your permission, I have start recording the interview and the recording will not be shared with anyone else other than our team and marking panel. May I confirm it from you again?

We're doing this to improve the mobile application, so we need to hear your honest reactions. During this interview, I'll ask you a few questions around registration, login, third party account transfers and viewing account. After that my colleague Ravindu will continue own account transactions and bill payment experience of the application. While other two members will take down notes on your answers and examine your expressions.

Can you please talk aloud to us what you are thinking in your mind while you perform the tasks and also can you please switch on screen recording while you do the tasks?

Do you have any question for me or are we good to go? Hmm…

Thank you!

- **Warm up**

  1. I would like to hear little bit about yourself.

     Thank you for the context.

- **Topic- Specific**

  2. How long are you using the application?
  3. What have you felt while using the application? – what do you think or feel about it?
  4. Can you find the path to register a new user?
  5. Can you please instruct how you are going to do further in registration?

  6. Since you are already a registered user can you remember the experience, you got when you are registering to the app. Can you please share your ideas?
  7. Please can you log in to the application.

BOC Mobile Banking Application   **User Research – Interview Script**

8. Have you ever viewed the profile and changed your password?
9. Can you show us how you will view the profile and change the password?
10. What do you like about the app?
11. Assume a user need to view their accounts in the bank. Can you show us how to use the application to do it?
12. Are you satisfied with the given details?
13. Assume a person needs to see their fixed deposits separately. How would you do it using the application?
14. Assume that you need to transfer semester fee to slit Boc account how would you perform it.
15. Have you used the favorites functionality? Why do you use it?
16. Have you used Budget calculator? Was it useful?
17. Do the given contact details were useful to you?
18. Were there any incident the messages had helped you. How frequently you check upon them.

    Thank you very much. Ravindu will continue some more tasks.

19. Assume that you need to transfer some amount from your savings account to your current account which is in BOC. How would you perform it?
20. Assume that you must do an electricity bill payment. Can you show us how you would perform it? Yes. I selected bill payments. Then I got to select customer and payee… Hmm there is only dialog and mobile bill payment… Shall I just select that? Then It asks me phone number. I cannot proceed since they do not accept my number.
21. How do you felt when using the application?
22. What are the things you would remove from the app if you can do?
23. What is the thing you would like to see in a improved app.

That's all from me. Thank you and you can take up the session Jananjali.

Thank you Ravindu. Isuri and Mihisuru do you all have anything to be clarified?

- **Wrap up**

Thank you very much for rendering your valuable time on behalf of us. Your feed backs are important for us. Once again Thank you very much and have a nice day.

BOC Mobile Banking App

This is a short survey based on redesigning the mobile application of Bank of Ceylon.

We are a team of undergraduate students in "Sri Lanka Institute of Information Technology (SLIIT)" pursuing BSc in Information Technology specializing in Software Engineering degree program. The purpose of this questionnaire is to redesign and develop the BOC mobile banking application by gathering information from you on the user experience gained while using the BOC mobile application.

We appreciate your response as a support for our study.

* Required

1. 01) Age *

   _____

2. 02) Occupation *

   _____

3. 03) District *

   Mark only one oval.

   ( ) Matara

   ( ) Kandy

   ( ) Galle

   ( ) Colombo

   ( ) Rathnapura

   ( ) Kurunegala

   ( ) Gampaha

   ( ) Kalutara

4. 04) How frequently you are using the below functionalities of the app? *

Check all that apply.

☐ View Accounts

☐ Check Balance

☐ 3rd Party Transfers

☐ Pay Bills

☐ Own Account Transfers

5. 05) How long are you using the app? *

Mark only one oval.

◯ 0-3 months

◯ 3-6 months

◯ 6-9 months

◯ 9-12 months

◯ More than 1 year

6. 06) How often do you use the app? *

Mark only one oval.

◯ Always

◯ Very Often

◯ Sometimes

◯ Rarely

◯ Never

7.   07) What do you like the most about the app? *

Mark only one oval.

( ) Colours used

( ) Interfaces

( ) Used fonts

( ) Navigation

( ) Flow of activities

( ) Simplicity

( ) Other: _____

8.   08) What do you dislike the most about the app? *

Mark only one oval.

( ) Colors used

( ) Interfaces

( ) Used fonts

( ) Navigation

( ) Flow of activities

( ) Other: _____

9.   09) How is your experience on the registration process of the app? *

Check all that apply.

[ ] Easy registration

[ ] More documentation

[ ] Too many steps to complete

[ ] Unnecessary details required

[ ] Consume more time

10.   10 a) Do you face any issues when log in to the app? *

Mark only one oval.

⬭ No

⬭ Yes

11.   10 b) If yes please state your issue.

_____

12.   11) How is your experience on third party transaction process of the app? *

Check all that apply.

☐ Easy to use

☐ Difficult to understand the flow

☐ Adding frequently used beneficiary details to the list is very help full

☐ Adding all the beneficiaries who are not frequently used leads to complex lists

13.   12) How is your experience on bill payment process of the app? *

Check all that apply.

☐ I prefer the way it proceeds

☐ Too many steps to complete

☐ Difficult to understand the flow

☐ Adding frequently used biller details to the list is very help full

☐ Adding all the billers who are not frequently used leads to complex lists

14.   13) How frequently you do own account transactions? *

Mark only one oval.

( ) Always

( ) Very often

( ) Sometimes

( ) Rarely

( ) Never

15.   14) Are you satisfied with the flow of the own account transactions? *

Mark only one oval.

( ) Very satisfied

( ) Satisfied

( ) Neutral

( ) Not satisfied

( ) Very dissatisfied

16.   15) How do you prefer to view the account details? *

Check all that apply.

[ ] View all type of account in the bank

[ ] View only the registered account details

[ ] View transaction details along with the account

17.   16) On a scale of 1 to 5 rate the usefulness of below features *

Mark only one oval per row.

	1	2	3	4	5
Budget Tracker	⬭	⬭	⬭	⬭	⬭
Alerts	⬭	⬭	⬭	⬭	⬭
Messages	⬭	⬭	⬭	⬭	⬭
favorites	⬭	⬭	⬭	⬭	⬭

18.   17) How satisfied are you with the following? *

Mark only one oval per row.

	Very Satisfied	Satisfied	Neutral	Not Satisfied	Very Dissatisfied
Quality of product/service	⬭	⬭	⬭	⬭	⬭
Responsiveness to your inputs	⬭	⬭	⬭	⬭	⬭
Customer support availability	⬭	⬭	⬭	⬭	⬭
Features of the product/service	⬭	⬭	⬭	⬭	⬭
Security of the transactions	⬭	⬭	⬭	⬭	⬭

19.   18) How easy are the following operations? *

Mark only one oval per row.

	Very Difficult	Somewhat Difficult	Neither Difficult Nor Easy	Somewhat Easy	Very Easy
Learning to operate the system	◯	◯	◯	◯	◯
Exploring new features by trial and error	◯	◯	◯	◯	◯

20.   19) Please state your level of agreement for the following. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
System always informs about the progress of the task	◯	◯	◯	◯	◯
Error messages are helpful	◯	◯	◯	◯	◯
Prompts for inputs are clear	◯	◯	◯	◯	◯

21.   20) Mention the features you would like to be added to the mobile app.

_____

_____

_____

_____

_____

22.   21) Mention the features you would like to be removed from the mobile app.

_____

_____

_____

_____

_____

23.   22) Mention the issues faced while using the app.

_____

_____

_____

_____

_____

24.   23) Would you recommend this app to another person? *

Mark only one oval.

( ) Yes

( ) No