

Data Collection Instruments

This document presents the data collection instruments used in this project. The questionnaire is referred in the paper as (I) for Usability Tests and Interviews with former inmates. It was made available online for a period of 9 months, from August 2021 to February 2022.

(I) For Usability Tests and Interviews with former inmates:

At least one pilot usability test was performed to verify if the planning was adequate and if adjustments were necessary. Both the pilot test and the tests themselves followed the guidelines presented below:

- Make connection with the participant via videoconference tool.
- Ask the participant to check if their cell phone is charged, to avoid interruptions.
- Share the researcher's screen to present the objectives of the tests and the Informed Consent Form (ICF), which explains what will be done and how the information collected will be used.
- Ask the participant for permission to record the meeting and interactions with the application. Explain that the user's image will not appear, only their screen. Explain that the recordings will not be used outside of the research and that the names of the participants will not be revealed.
- Record consent.
- Inform the user that he must take a picture of the screen with the consent he has informed to keep a copy of the document.
- Collect demographic and profile data such as:
 1. Age?
 2. Region (not address)?
 3. Race/ethnicity: (according to Brazilian statistics): white, black, brown, yellow indigenous, Other?
 4. Gender Identity: Male, Woman, Non-binary/non-conforming?
 5. Are you part of the LGBTQIA+ population? If yes, which group?
 6. Do you have a disability? If yes, which one?
 7. Are you a foreigner? If yes, from which country?
 8. Time of deprivation of liberty?
 9. Do you have children? (if yes, if you live with them)?
 10. Education Level?
 11. Time of use of mobile applications?
 12. Ease of use of mobile applications?
 13. Cell phone brand and, if possible, model?
- Explain that the participant is not being evaluated, but the application. If any error occurs, then it is because the application is not working well, and the error needs to be fixed. Affirm that identifying errors is very useful for the improvement of the application.
- Ask the participant to share their screen and launch the app.

- Record the participant's screen.
- Explain the “Think Aloud” technique in accessible language and its importance.
- Respond to requests for clarification without providing answers to the application's activities but suggesting reflections to the participant so that he/she finds the solution to the task on his/her own.
- Before starting the tasks, ask the participant to observe the application's initial screen and not “click” on anything, just say what he/she thinks about it. This activity should last between 2 to 3 minutes.
- Follow the tasks without interruption.
- Present each scenario/task separately, as described below. Read it aloud after placing it in the “chat” space of the video conferencing tool in case the user wants to review them.

The scenarios/tasks performed are ordered by degree of difficulty. The first three are easy. Then three are of medium difficulty and the last one is hard. Each task was presented as a running text, without the scenario/task separation, to facilitate. The seven tasks are:

#	Scenario	Task
1	You do not yet have a voter registration card and would like to issue this document.	What documents will be needed?
2	You want to take a course on HTML Concepts and Techniques to create websites for the Internet.	Find in the app a feature that can offer you this information.
3	You want to know how your criminal process is going.	Consult the status of your criminal process using the ESvirtual application.
4	You need to get a vaccine.	Find the nearest location that can provide you with this service.
5	You are interested in choosing and developing a new professional career.	Find in the app a feature that helps you in this process.
6	You are interested in obtaining Social Benefits and are seeking to know if you are entitled to this benefit.	Find information about social benefits in the app.
7	You are traveling to Goiânia and would like to know community restaurant options there.	Find the community restaurants in the city of Goiânia.

At the end of each task, we asked the following questions:

1. How would you rate this task from 1 to 7 (1 for very difficult and 7 for very easy)?
2. Did you manage to complete the task?

3. If there were difficulties in carrying out the task, do you remember if there were few or many? And what were they?
4. Do you think the task was clear?
5. Was it quick to perform?

At the end of the entire test, we asked other questions:

1. Which app services do you consider most important?
2. Did you feel welcomed by the features that the application provides?
3. What did you like most about the app?
4. What did you find most difficult about the app?
5. What did you think of the visual aspect of the app?
6. Are you interested in going to a service informed by the app?
7. Have you ever gained access to any services or rights after obtaining information in the app? If yes, could you tell us which one?
8. Would you recommend the app to friends and family?
9. Have you already recommended the app to someone? If yes, to how many people?
10. Do you have any service suggestions for the app?
11. Would you like to add any comments? Criticisms and suggestions are very welcome.

Then post-test questions were asked, following the SUS (Scale Usability Score) method. The SUS method has a numerical usability scale and the calculation of an index. We used it to measure effectiveness (Can users complete their goals?), efficiency (How much effort and resources are needed for users to complete their goals?), and satisfaction (Was the user experience satisfactory?).

The SUS questionnaire has ten questions, that the user can answer on a Likert scale, from 1 to 5, (1 means "I completely disagree" and 5 means "I completely agree"). The questions are the following:

1. I think I would use the ESvirtual app often.
2. I found the ESvirtual application unnecessarily complex.
3. I found the ESvirtual application easy to use.
4. I think I would need technical support to be able to use the ESvirtual application.
5. I found that the various functions of the ESvirtual application were very well integrated.
6. I thought there was a lot of inconsistency in the ESvirtual application.
7. I imagine most people would learn to use the ESvirtual application very quickly.
8. I found the ESvirtual application quite uncomfortable to use.
9. I felt very safe using the ESvirtual application.
10. I needed to learn many things before I could use the ESvirtual application.

At the end of the session, the participants were thanked, the recording was stopped, and the researchers met to discuss the observed points.