Usability Evaluation of Mobile Apps in Color and Grayscale Modes

1. Introduction

In this part of the assignment, we conducted a usability evaluation of mobile apps in both normal (color) and black and white (grayscale) modes. The evaluation focused on the LinkedIn, Instagram, and Swiggy/Zomato mobile apps. The study involved two participants, one expert, and one novice, who performed specific tasks on each app in both color and grayscale modes.

2. Experimental Protocol

2.1   Participants

Expert User: Animesh Adithya
Novice User: Amit Ghosh

2.2   Tasks

Participants were instructed to perform the following tasks in both color and grayscale modes:

- Search for and apply to any job that suits your skills using the LinkedIn mobile app
- Post the most recently taken picture on the device's camera roll on the Instagram mobile app
- Order two main-course food items using Swiggy/Zomato mobile apps

2.3 Randomization

The order of tasks and modes was randomized to ensure a balanced distribution. Participants were assigned tasks and modes in a counterbalanced manner.

System Usability Scale (SUS) Evaluation

Participants were asked to fill out the basic SUS form after completing the tasks. The SUS form can be found at
https://www.researchgate.net/publication/228593520_SUS_A_quick_and_dirty_usability_scale.

4. SUS Score Calculation

The SUS scores were calculated for each participant based on their responses to the SUS form.

5. Results and Conclusions

5.1 LinkedIn Mobile App

Novice:

       Color Mode SUS Score: 77.5
       Grayscale Mode SUS Score: 70.5
       Remarks: The grayscale UI is not a hindrance at all while using the app. The UI uses only blue, black and white colors and the absence of blue hardly makes a difference. Since the grayscale mode was tested before, the participant did not have to spend time locating the resume on the device to upload on the portal.

Expert:

       Color Mode SUS Score: 90
       Grayscale Mode SUS Score:82.5
       Remarks: Grayscale and colored mode were equally good in case of applying for jobs. But it's hard to go through the feeds in grayscale as it is quite uninteresting.

5.2 Instagram Mobile App

Novice:

       Color Mode SUS Score: 50
       Grayscale Mode SUS Score: 42.5
       Remarks: The color did not made a big difference for a novice user specifically for the task of posting as the button used in this task were more or less black and white. But for stuff like time-passing on feed becomes less interesting in grayscale mode.

Expert:

       Color Mode SUS Score: 82.5
       Grayscale Mode SUS Score: 80
       Remarks: Again, the grayscale does not make any difference other than making the interface unattractive to look at, especially in the case of uploading a photo since very few steps are required to do so.

5.3 Swiggy/Zomato Mobile Apps

Novice:

       Color Mode SUS Score: 90
       Grayscale Mode SUS Score: 40
       Remarks: The grayscale is more or less impossible to use, as its hard to identify the dish itself and if it's veg or non-veg. Furthermore the UI feels so dumb as compared to the bright red colored UI.

Expert:

       Color Mode SUS Score: 77.5
       Grayscale Mode SUS Score: 65.5
       Remarks: The absence of colors was a major problem while using the map feature. Moreover, the name of the dish was the only hint at identifying the food and whether it was vegetarian or not. Other than these factors, the experience was fairly similar.

6. Recommendations

Based on the evaluation, the following recommendations are provided for improving the usability of the mobile apps in both color and grayscale modes:

Linkedin: Grayscale didn't make a big change to the user experience , given the task was applying for a job. Certainly grayscale would make it less user friendly to scroll through the feeds and go through posted images and videos.

Instagram: While grayscale mode didn't affect functionality, consider improving the aesthetic appeal of the interface in grayscale to make the user experience more pleasant.

Swiggy: Identify and address any features heavily reliant on color cues, especially in the map interface, to ensure a seamless experience in grayscale mode. List in detail all the disc components that make up the dish and explicitly specify whether the dish is vegetarian or non-vegetarian. Due to the absence of color it becomes difficult to identify what dish it is.