

CHAPTER 6

Conclusion

In this work, we investigated the current usability issues with WeChat and how Chinese elders are using it on a daily basis using human-computer interaction research methods.

thesis?

We will review the research goals and its research questions from the beginning of this chapter, and later the study's restrictions faced during the research period, limitations, contributions, and potential future work directions respectively.

6.1 Research Goal

Better to refer the reader to chapter 1 – that is more precise and doesn't need to ask them to recall things

~~Recall that~~ the project aims to gain an understanding of the ways that elderly Chinese people use WeChat to keep in touch with the very small circle of their family members.

As the thesis statement requires panorama-style research into the current situation, we have **Refined** **divided** the thesis statement into the following specific research questions. The research questions of this thesis are listed below:

RQ1. What are the “keep-in-touch” methods that are frequently used by Chinese elders?

RQ2. What are the design issues with WeChat for elders to keep in touch?

RQ3. How could we better design WeChat so that WeChat could better help elders keep in touch with their family members?

If you change this here, you need to change it elsewhere, including Chapter 1. I don't see why this is related only to commercial products

RQ4. What are the **commercial** products' effective design heuristics especially for the elders to easily keep in touch?

The thesis has successfully answered these research questions. For RQ1, the preliminary questionnaire has already validated the popularity of WeChat as the “Number One” communication

application among surveys in the Chinese elderly population, with 91.7% elderly smartphone users also using WeChat.

To fully answer RQ2, I conducted extensive user and expert studies via cognitive walkthroughs and think-aloud sessions *in situ*. Detailed design issues of WeChat are illustrated in Chapter 4 and recommendations to answer RQ3 are given in Chapter 5.

To address the effective design heuristics asked by RQ4, I argued that novel design heuristics might not be better than the classical Nielsen's heuristics, as Nielsen's heuristics cover most aspects of later and longer versions of new heuristics raised by other academics under different backgrounds. According to **inductions**, we conclude that it is not necessary to use novel, detailed heuristics, as the original set of heuristics could discover as many problems as the longer ones. Instead, I developed a concise set of guidelines for upcoming designers to follow when creating applications specifically for seniors.

At this point, you should mention that the set of heuristics was broad. There are detailed guidelines and heuristics for design to account for the needs of people with disabilities such as low vision and these may be useful for the detailed screen design. The UX book Chapter 22 has more in this.

6.2 Contribution

According to the thesis statement, the purpose of this study is to investigate WeChat's usability concerns and find ways to make it easier for elderly people to stay in touch with their family members during lockdowns or self-isolation periods due to the Covid-19 pandemic. This thesis makes various contributions to the subject to accomplish this goal. The major contributions consist of newly created user tasks intended for elderly people to keep in touch, HCI in situ evaluations via think-aloud and cognitive walkthrough, theoretical reasoning and validation by heuristic evaluation, etc. In order to test our four research questions, this thesis provided preliminary surveys with 33 participants, think-aloud and cognitive walkthroughs with 8 interviewers, and usability questionnaires with 79 valid answers over four months.

The detailed contributions of the thesis through each chapter are listed below.

- **Chapter 2:** Align with the major usage of literature reviews, I reviewed relevant past academic projects from the 2000s and analysed their functionality link with WeChat so that we could highlight the merits of design elements in each product and inspire readers' potential future design pathways for WeChat;

- **Chapter 3:** As the methodology chapter, I designed a brand new set of user goals and task which specifically tests WeChat's ability to help elders to communicate with family members, and written a novel WeChat usability questionnaire specifically for WeChat's keep-in-touch-related functionalities;
- **Chapter 4:** In the results chapter, I applied novel questionnaires to test the hypotheses on whether WeChat is a popular communication tool among Chinese seniors, and I also performed HCI evaluations using think-aloud and cognitive walkthroughs and presented my findings on various elements on WeChat interface;
- **Chapter 5:** Drawing insights from the user and expert studies in Chapter 4, I put up with recommendations and lighten up potential pathways WeChat could potentially improve its interface usability and raised ideas for WeChat's redesign. The redesign could benefit elderly people and make them easily keep in touch with family members under forced situations like lockdowns or self-isolation periods so that they are somehow prepared for the next potential pandemic.

6.3 Limitation

This reads oddly

By adhering to the minimalist design idea and removing pointless functionalities in those elderly versions of WeChat, a separate version of WeChat that is specifically designed for elders may be a better way to improve usability and user experience among elders, as I indicated in the brief guideline for future designers.

Starting from scratch and designing a brand new device solely for elders might be a better way to improve on the current commercial products: as a new product for elders means the extermination of some functionalities, the conflict is that the younger generation might use them extensively. Take the example of "Location Sharing": young people might use this function extensively but I proposed the cancellation of this function in elderly products. Therefore, we need to build a new product or make a separate interface solely for elders.

Due to time and hardware constraints, no novel device for elders to keep in touch with their family members has been developed, although this is the preferred way according to my argument. However, the downside of doing so is apparent: it's not realistic for the mass market to commercialise and such a device might not be applicable any time soon in real-life settings.

As surveying is part of the study, selection bias is unavoidable. For instance, the data acquired are mostly from Guangzhou's population. **Being a metropolitan**, Guangzhou might be typical for the city but unsuitable to indicate the countryside situation. As the survey data revealed, 75.8% of the participants are from the city instead of the countryside ¹. Guangzhou is situated in southern China, which may be unusual given **the representation of the population in the north** of China.

Additionally, the choice of volunteers is biased towards family members of the research group. The findings of the study could be indirectly impacted by unstated ethnographic elements.

The Hawthorne effect may also affect the study's findings because once participants are made aware of the purpose of the HCI user studies, they may alter their behaviour. I decided to conduct this research in situ in order to lessen the Hawthorne effect because participants may feel more comfortable in their home surroundings and act in their normal behaviour.

6.4 Future Work

Driven by elements from limitations, we must address those issues and improve in future studies. In order to do this, we must first constantly strive to improve our research methods, data quantity and accuracy. Once more data are gathered, we may utilise statistical inferences to conduct A/B testing and identify the best version that WeChat should employ to make elders easily stay in touch.

Developing novel devices that are not based on current smartphone models is also expected and welcomed, as new hardware design could jump out of the constraints of contemporary smartphones and has the potential to drastically improve the user experience among elders.

Last but not least, it is unfortunate that owing to pandemic constraints, we were unable to interview seniors in palliative care settings such as hospitals and nursing homes. Since older people in such environments are the ones who need improved communication ways to stay in touch with their family members the most, conducting tests in such environments is essential and something that must be done in the future. Future research must also include a longer evaluation period, ideally during a PhD research cycle of at least 3 to 4 years.

¹In China, IDs are divided into two types: city and countryside.

6.5 Summary

This thesis has presented the motivation and user evaluation of WeChat, a trending communication application that could help elderly people keep in touch with their family members and friends. According to the HCI user research, WeChat may further enhance its user interface and make it even easier for seniors to use, which would also increase usability for all users. The WeChat interface proved easy to use in general during the in situ field trial but could improve its interface on elements in video & video calls, text messages and location sharing. We look forward to more studies on the usability of WeChat since it's one of the most popular applications and many elders depend on WeChat to keep in touch with others.