
A Study of the Use of Mobile Phones by Older Persons

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Abstract

This paper reports on issues related to the use of mobile phones by older people. This study uses triangulation, a mixed method of qualitative (focus group discussions) and quantitative (online questionnaire) approaches. Usage patterns, problems, perceived benefits and desired and unwanted features were covered in this study.

Keywords

Elderly, mobile phone, older adults, focus group, questionnaire.

ACM Classification Keywords

H5.2. Information interfaces and presentation: User Interfaces (Evaluation/methodology; Style guides).

Introduction

Mobile phones are becoming common personal items for people of all ages. According to the Office for National Statistics, nearly 90% of people living in the UK between the ages of 15 and 34 owned or used a mobile phone in February 2003. The ownership percentages of people in higher age brackets are slightly lower. Seventy percent of people aged 55-64 years old and 53% people aged 65-74 owned a mobile phone. The ownership drops drastically to 24% for

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people 75 years old and above [6]. Studies suggests that people over the age of 60 use mobile phones for very limited purposes, such as for calling or texting in emergency situations [2]. They avoid using more complex functions. The major causes are displays that are too small and difficult to see, buttons and characters that are too small causing them to push wrong numbers frequently, too many functions, non-user-friendly menu arrangement, unclear instruction on how to find and use a certain function and services that are too expensive [7].

If the problems related to the use of mobile phones can be solved, mobile phones can potentially play an important role in helping older people in many ways, especially with the increasing range of telephone-based services (e.g., telephone banking and shopping). They provide a sense of security for older people as they can be reached practically anytime and anywhere [7]. It is unfortunate that there were not many studies that involved older persons in the development phase of mobile phones (an exception is universal design activities reported by Fujitsu – although the oldest participant was ‘only’ 60 years old of age [4]).

This study uses triangulation, a mixed method of quantitative and qualitative approaches, to answer one particular research question: how can current mobile phone designs be improved to help older persons? Qualitatively, we use focus group discussions. Quantitatively, we explore findings from the online questionnaire designed in collaboration with the focus group. By combining the analysis of the survey and the focus group discussions, the study aims to arrive at a more nuanced understanding of the nature of the use of mobile phone among older people.

Related Work

Space limitation makes it difficult to list all of related work in the area of mobile phone usage pattern by older persons. The following two studies, however, provide a good introduction on the issues that had been investigated in this area.

To be useful for older persons, mobile communication technology must support personal communication, provide a sense of security, act as a means for social integration (especially in remote areas that are unreachable by landline telephones), and enhance their autonomy. However, this technology can also trigger social isolation (mobile communication encourages less face-to-face interaction), lost of privacy (users may feel that they can no longer have ‘quiet’ time for themselves because they can be contacted anywhere and anytime), and economical problem (mobile phones and services are still costly, especially for those who rely only on small pension) [1].

Melenhorst et al. [5] used focus group discussions to investigate perceived context-related benefits of mobile phones for older persons. The focus group stated that the main benefits of mobile phones are to keep in touch with someone emotionally close who lives more than half an hour apart, to set time for a leisure activity with a friend, and to immediately share exciting good news.

Participants

The participants of the focus group were recruited through flyers placed in supermarkets and organisations for older persons such as the College of Third Age and Age Concern. In addition to their age, the inclusion criteria require the participants to have some experience with mobile phone operation. This

recruitment approach, unfortunately, has led to a gender-biased sample of women only group. Two HCI researchers and one moderated/noted the discussions.

Focus group discussions were used in this study because they have a long history in market and medical research and had been shown to be very effective in drawing upon respondents' attitudes, feelings, beliefs, experiences and reaction in a way that would not have been feasible using other methods [3].

Seven older women participated in the focus group discussions (median age = 67.5 years old), four are diploma holders, three graduated from grammar schools. Six have been using mobile phones for several years, one started using it in the last 12 months. Six did not use their mobile phones very often and therefore chose the pay-as-you-go scheme, topping up once or twice a month in mobile phone shops or at supermarket tills. They or their partner paid the bills.

The discussions normally started with open-ended questions such as "What problems do you have with your current phone?" The results of the discussions are summarised below.

Usage patterns

Older persons most likely would only use mobile phones in emergencies; they did not use their mobile phones for casual conversations, except when the persons they needed to call only own mobile phones as the cheapest way to contact them is by using a mobile phone.

The participants mostly called their family members, and very rarely their friends. They rarely used SMS, as they believed that SMS ruined people's literacy.

However, they understood most of the jargons in the SMS their grandchildren sent them (e.g., gr8 = great).

Problems

The following were the problems the participants found when using their current phones:

- Buttons that are too small and rubbery. They preferred metallic buttons, which clicked when pressed.
- Menus with too many options that are often unnecessary
- Functions that are difficult to understand, complicated and thus impossible to recall
- Devices and screens that are too small to hold and read comfortably.

Perceived benefits

All participants found that carrying mobile phones increased their feelings of safety and security but could not think of any other benefits.

Desired features

The group stated the following desired design features:

- Shape: a flip phone with an antenna as the antenna is good for picking up the phone from a crowded handbag.
- Display: large screen and text. However, they do not want a large screen if it cannot display large text.
- Colour: although colour was not as important as other features, bold or silver coloured phone would be easier to spot in a crowded handbag.
- Size: not too small, something a user can grab and hold comfortably.

- Buttons: square, raised, metallic/silver buttons arranged similar to landline buttons' arrangement. A similar finding was reported in a study on mobile phone design for older persons performed by Fujitsu [4].
- Voice call: a means to easily answer a phone call. They suggested placing the answer button at one side of the phone, and placing all other buttons somewhere else to avoid confusion. One of the reasons the group preferred a flip phone was the ease of answering a phone call (i.e., flipping open) and ending it (i.e., flipping close).

The features that they believed did not exist in their current phones but they would like to have are:

- A one button locking function to prevent accidental dialling (rather than the standard MENU and *).
- An easily accessible 'panic button' for emergencies
- A caller identification complemented with a picture of the caller to remind users who the caller is.
- A screen with only four menus: voice call, text, alarm and calendar
- A button to place a caller/number into a blacklist.

Unwanted features

Some participants quickly pointed that camera and video phones must be removed. Most participants thought that camera phones were the 'most dangerous invention of the 21st century' as it encouraged people to do "evil" things such as bullying.

The Online Questionnaire

To balance the view of this women only focus group and to gather quantitative data on similar issues, an

online questionnaire was designed in collaboration with the group. The questionnaire was placed in a website dedicated for surveys, hosted by our university. Invitations were mailed to organisations for older persons, mailing lists and personal email addresses (with the owners' permission). To encourage participation, two phones were given away at the end of the survey through a lucky draw.

Exactly 100 respondents replied to the survey. Unfortunately, again, the survey was dominated by women respondents (67%). The majority were 60-65 years old (72%), had used mobile phones for more than 2 years (64%) and most often called their partners (41%) or children (24%). Half used their phones daily. They were split almost equally on the pay scheme (pay-as-you-go vs. pay monthly). On an average month, 37% paid more than £20, 27% paid £10-20 and 36% paid less than £10.

The most responded reason of using mobile phones was for emergency (84%). The most used function other than voice call was SMS (63%) and the least used was video call (4%).

To understand older persons' opinions on the roles of mobile phones on their lives, the respondents were asked to rate, in 5-Point Likert-like scales, from 'strongly disagree' to 'strongly agree', the statements that the focus group suggested. These are:

1. It is cheaper to use mobile phone than to use landline phone.
2. I have more friends after having a mobile phone.

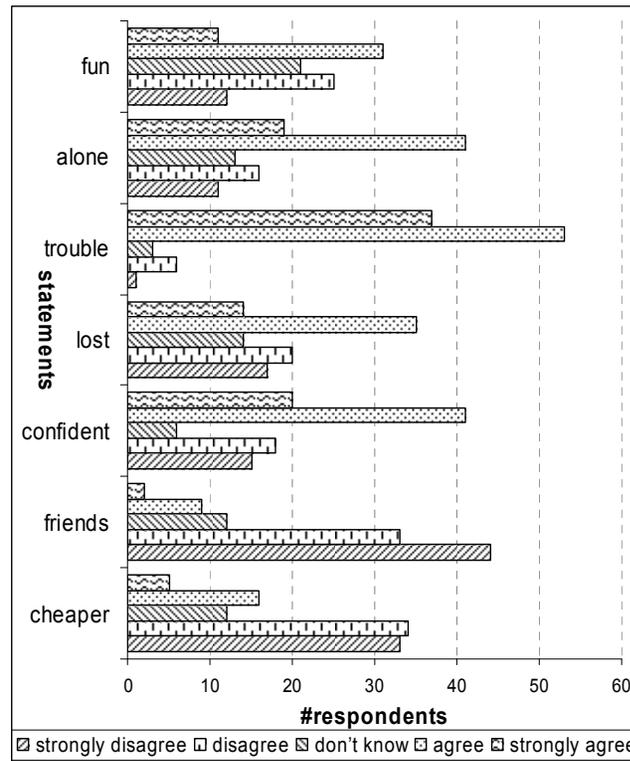


figure 1. Respondents' opinions on mobile phone use.

3. I feel more confident to go out by myself after having a mobile phone.
4. I am not afraid of getting lost after having a mobile phone.
5. I know I can always call somebody on my mobile phone when I am in trouble.
6. I feel safer to be alone because of my mobile phone

7. It is fun to use mobile phone

Figure 1 illustrates the distribution of ratings. The most positively respondent statement was the fifth statement (90% respondents agreed or strongly agreed to this statement). The most negatively respondent statement was the first statement.

To understand mobile phone users' opinions on less common functions, a list proposed by the focus group was created for the respondents to rate as 'must be removed', 'good if removed', 'can live without', 'good to have' and 'must have'. The respondents tended not to choose the 'must be removed' option. The majority checked 'can live without' or 'good to have'. The top three good to have or must have functions were address book, SMS and alarm clock.

Discussion and Conclusions

People often underestimate the interest of older persons on mobile technology. It is undeniable that ageing-related functional decline has some impact on their use of mobile phones. In addition, the lack of exposure to more advanced features, even if it is merely due to their decision not to purchase the latest phones, means that they are less up-to-date with the ever changing mobile technology. However, this study shows that older persons used and had strong opinions on some advanced features of mobile phones.

This study is an exploratory study of the use of mobile phone by older persons. However, it presents rich data as a result of combining qualitative and quantitative approaches. As a research method, focus group discussions have been proven in this research to be quite successful in gaining an understanding of how

some older persons used mobile phones. Although focus group in HCI is less commonly used than other inquiry methods (e.g., contextual inquiry and interview), the discussions were able to capture basic requirements of a mobile phone preferred by older persons, prior to design.

The focus group discussions highlighted several issues that were important for older users. While most of these issues are not unexpected, it is interesting to note, for example, that each of the preferred physical design elements was actually chosen for their practicality rather than for their aesthetic aspects (e.g., bold colour for ease in spotting in a crowded bag, flip phone for ease in picking up and ending calls, etc).

The biggest drawback of this study was the fact that the focus group consists only of women. The follow up survey was designed to balance the sample, with some degree of success. The survey data confirm the view of the focus group that mobile phones are for emergency, for instance. The survey also indicated that the most important role of mobile phones was to provide assurance to older persons that they could always call somebody when they were in trouble.

There are some other limitations of the current study. The focus group participants are quite homogeneous: highly educated, middle to upper class, and able-bodied. The questionnaire respondents are also mostly frequent users, had used mobile phones for an extended period of time, and were familiar with some advanced functions. Undoubtedly, this was partly due to the fact that the survey was online only. Although the use of mobile phones, to a certain extent, requires a certain economic and cognitive status, it would be

interesting to conduct focus group discussions of older persons from other socio-economic background, even if they are only exposed to mobile phones as the 'victims' of other people's inconsiderate use of mobile phones, supported with paper questionnaire, which hopefully would capture audience with different characteristics. And finally, more extensive statistical analysis is needed to unwrap more interesting findings.

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