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[Technology](#), [Internet](#)



How Elderly Persons can be influenced to become Active Users of Smartphones to Communicate with Peers and Younger Aged Groups via the Use of Web 2. 0 Technologies

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ABSTRACT

The generational gap between younger age groups and senior persons who use mobile technology has been well documented. It is the purpose of this paper to document the challenges that senior persons face as it relates to the use of mobile technology. In addition, this research paper will reveal how mobile devices, such as smartphones and tablets, can be used to improve or enhance their social interactions amongst persons apart of their peer group as well as younger individuals. Therefore, it will be very important to outline what are the steps necessary to enhance the usability of mobile devices by older individuals while interacting with various forms of Web 2. 0 technology.

KEYWORDS

1. INTRODUCTION

“ Since I started on the computer a few weeks ago, I am getting more invitations to social occasions from my friends.” - An elderly participant involved in an exercise using smartphones and tablets

The above quote made by a senior person who participated in an exercise which allowed elderly persons to use smartphones and tablets. The positive response from this senior person reveals the impact that the use of mobile devices, such as smartphones and tablets, could do to improve the social life of persons who are sixty years and older. The use of mobile devices for this

demographic within the population could potentially prove very beneficial as the use of mobile devices will allow senior persons to cope well with feelings of loneliness, unhappiness, and boredom. Therefore, it will be significant do studies which will analyze the effects that smartphones will have on a senior person's life as they communicate with persons within their peer group and younger peer groups. Consequently, this research paper will seek to answer and address the following question: How mobile phones can be used to influence an elderly person from being a passive to an active smartphone user who uses the phone to communicate with peers and younger aged groups via e-mail, text messaging, and social media networks. Hence, the aim of this research paper will be to discover the impact of the use of smartphones can have on an elderly person's social relationships and contribute to their social well-being via the use of Web 2. 0 technology.

2. 0 Background

There have been numerous studies which have been conducted in the past which analyze the use of technology by elderly persons. Notably, a study conducted by Shapira, Brak and Gal [7], indicates that senior persons who began to use the Internet were less likely to be depressed, " were more satisfied with life," and " more pleased" with their current " quality of life" compared to other persons who were engaged in activities which did not expose them to the Internet. Furthermore, the authors of the research study conclude that senior persons who use the Internet had a positive impact on their " well being" [7]. Their studies confirm that the use of the Internet will benefit elderly persons who are in a state of " psychological distress" [7]. Moreover, the study done by Shapira, Brak, and Gal confirm that the

continued use of the Internet and computers prevented age-related deterioration in older persons and even “ enhanced psychological factors” significant to the quality of life of senior persons [7]. The researchers explain further that these results are linked to the psychological processes associated with “ experiences of personal empowerment,” improved interpersonal communication, “ learning and overcoming physical difficulties related to mobility” [7].

However, although there are benefits which can be derived from using technologies, there are some obstacles which need to be overcome so that older persons can become active users of mobile technologies rather than occasional users. For instance, Sri Kurniawan noted in her research study that older persons have difficulties using mobile phones for the following reasons: the smallness and placement of the buttons; elderly persons had problems with text, such as correlating a number with three letters linked to it; senior persons had problems remembering their phone numbers; older people had problems with tasks related to customization and the short battery lives of mobile phones on the market is considered a problematic situation for seniors who have the tendency to forget to recharge their phones [4]. Of particular significance to this research is the difficulty that seniors have using text messages, as documented by Kurniawan’s study [4]. This is because the ability to text is an important ability in interacting with various forms of Web 2. 0 technology, such as emailing, chatting, and using social media networks, such as Facebook, Twitter, and Instagram.

Kurniawan’s study shows that even the retrieval of a message is problematic for seniors as they are unable to immediately reply, and many consider it to

be discourteous not to do so [4]. The researcher addresses the economic significance of mobile phone companies designing ““ ageing -friendly,”” as highlighted by the editorial, “ Mobile human-computer interaction” [5]. However, Kurniawan’s article fails to address how using mobile devices, in particular smartphones and tablets, can be used to improve social interactions amongst seniors within and outside of their peer group. Furthermore, it fails to address how Web 2. 0 technologies via mobile devices can be used to decrease the incidence of loneliness, depression, and boredom amongst seniors. Hence, this study will examine the impact that the use of mobile devices can have amongst the older persons as they relate with persons who are within and outside of their peer group as they interact with them via Web 2. 0 technologies.

3. 0 Methodology

The research methods which will be used to gather the necessary data for analysis or evaluation will be the following:

- Expert interviews with two individuals. One individual will answer technical questions related to suitable features and design characteristics for an ageing friendly phone with Web 2. 0 capabilities; and the other individual over 60 years of age who using mobile phone (with web 2. 0 capabilities) to communicate with persons within his or her age group as well as younger individuals. This section of the research methodology is intended to focus on solutions, opportunities, predictions and problems. Therefore, the persons participating in the expert interviews should have the necessary competencies and communication skills to participate in the interview.

- Focus group discussions with persons with experience using mobile phones with Web 2.0 capabilities who are over sixty years of age. It would be preferable that these persons come from the following locations: golden age/ nursing homes, bridge clubs, churches, and community centers where elderly persons congregate. The focus group discussions should take place in multiple sessions within a two week period with the entire group. It would be preferable that both genders be represented within the group. Focus group discussions are effective ways in evaluating the respondents' beliefs, attitudes, reactions and experiences in a manner that other methods would not enable a researcher to do. One-on-one interviews are not as effective because participants might be reluctant in honestly sharing their views in such a context.

- Online surveys. An online survey service Survey Monkey can be used to collect data from persons who are sixty years and over who have experience using mobile phone with Web 2.0 capabilities with persons within their peer group and younger individuals. This online questionnaire would be based on the data gathered from the expert interviews and focus group discussions. This method is effective because it enables the researcher to gather a significant amount of data within a short space of time, but there is a limitation which this method poses which is the requirement that only persons who have access to the Internet be able to participate in the survey. However, it should be noted that elderly persons who have access to the Internet would be more aware of the issues involved in operating a mobile phone with Web 2.0 capabilities and using it to communicate within and outside of their peer group.

4. 0 Details of the Proposed Solution

There are two experts who were interviewed: one was a technician at a mobile phone company who is familiar with designing smartphones and tablets, and have observed older relatives using the smartphone; and the other expert is a retired computer engineer who owns an iPhone 5c. The focus group meetings were held at a golden age home and discussion were framed within an answer and question session involving the participation of ten persons—5 men and 5 women. Online questionnaires were done by the help of surveys created by the online service, Survey Monkey.

The various data collection methods revealed the following:

Learning to use the interfaces of the smartphones and tablets can be difficult. Seniors complain about having difficulty using the touch screens to write various text messages. The buttons on the screen were often too small and they often entered the wrong thing. In addition, elderly persons had difficulty viewing content while using flicking gestures when scrolling web pages. Seniors also had problem panning their fingers across the screen when viewing two- and three-dimensional images. The experts recommend that technicians design mobile devices which will accommodate easy to use interfaces for seniors who have issues with their joints. For instance, mobile phone designers could enable interfaces which will allow the combination of flicking and panning scrolling techniques. This will enable older users to do quick exploration or careful browsing of pages.

Elderly persons found that the background lighting on smartphones and tablets made them difficult to read what was on them. Older persons

complained that the backlighting on the smartphones and tablets caused their eyes to be strained, and many already had difficulties with their eyesight. The experts suggest that “aging-friendly” phones should have a screen guard or implement a phone application where seniors can be able to read blog posts, articles, and pages easily.

Most seniors require that someone help them to use Web 2.0 technologies, such as social media, emailing, texting, chatting, uploading videos and pictures. Many older persons report that they need the assistance of usually a younger person to teach them how to use websites such as Facebook and Twitter, for instance. As a result, due to the intimidation caused by using smartphones for Web 2.0 activities, only 12% of seniors felt comfortable using their smartphones for such purposes. Therefore, it is suggested that ‘ageing-friendly’ smartphones and tablets be created with apps which would instruct seniors how to use Web 2.0 technologies, such as email, social networking sites and uploading photos or videos. Better yet, a feature should be placed on ‘ageing-friendly’ touch screen mobile devices which would allow elderly persons to contact a technician or customer service representative who will be able to teach them in a step-by-step manner to use Web 2.0 technologies.

It was discovered that once older persons tend to feel more comfortable owning a tablet than a smartphone. Older persons felt more comfortable owning a tablet rather than a smartphone because these were simpler to use and had less features which would intimidate them. Therefore, it is recommended that ‘ageing-friendly’ smartphones be designed to have basic features such as an address or contact book, alarms, and an application

which can allow them to see the screen clearly, as indicated previously.

Senior persons who use social networking sites have the tendency to be more sociable in person or over the telephone. Older persons who use social networking sites regularly are sociable outside of the online space. Those who are not very sociable outside of the virtual world have a difficulty seeing the benefits of using social networking sites. However, these persons can be educated as to the value of interacting with other persons using Web 2. 0 technologies through marketing campaigns of ' ageing-friendly' smartphones and tablets. Marketing campaigns could show the benefit of elderly persons communicating with friends and loved ones and especially persons who are within the adolescent and young adult age groups. These age groups in particular have been shown to have a preference for communicating with other persons using Web 2. 0 technologies. Studies which verify this are the one conducted by Jeffrey Boase and Tetsuro Koboyashi [1], and the other by Shari Walsh, Katherine White, and Moss Young [10].

5. 0 Evaluation

The evaluation framework used to conduct the research study as it pertains to the respondents who participated in the study was based on the following variables as it relates to the role of mobile devices, such as smartphones and tablets in seniors' lives: safety, independence, ability to communicate with friends and family, fun, access to information and usability.

Consequently, the online survey, interviews, and focus group sessions were structured to analyze the role which mobile devices and Web 2. 0 technologies play in senior individuals' lives.

The research showed that elderly persons placed more significance on

gaining a sense of independence and safety when using mobile devices. The third most important variable was the opportunity to socially interact with other individuals (within and outside of their peer group) so as to cope with loneliness, boredom, and depression. This was followed by usability as it relates to the 'ageing-friendliness' of a mobile device and whether or not they will be able to easily learn how to use Web 2.0 technologies using such a device.

6.0 Related Work

As indicated previously, there have been numerous studies conducted on older people and the use of technology. For instance, Shima Sum, R. Mark Matthews, Mohsen Pourghasem and Ian Hughes in their article, "Internet use as a predictor of sense of community in older people" discusses how the internet can be potentially used to foster a greater sense of community amongst the elderly [8]. This research is similar to this one because it shows how technology can be used to create social bonds amongst the elderly so as to have a feeling of inclusion and reduce the feeling of alienation.

7.0 Conclusion

In summary, the study conducted indicate that in order for elderly persons to benefit from Web 2.0 technologies then resources should be made available to inform them as to the benefits of using these technologies on mobile devices, such as smartphones and tablets. This can be done through marketing campaigns targeted to seniors and the use of customer service which could be easily accessed on their devices. The interfaces on mobile devices which have touch screens should also be easy to be used by seniors who may have problems with their joints. Furthermore, certain features

should be used to ensure that seniors are able to see clearly when reading information on touch screen mobile devices.

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