

Role of ICT in Social Network Usage among Physically Disabled Individuals in the KSA

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Abstract: There is a wealth of research highlighting the belief that ICT (Information and Communication Technology), including mobile phones and the Internet, assists individuals in overcoming various limitations in relation to the broadening of their range of skills and experiences. The advantage is more pronounced among individuals plagued with issues of mobility. Nonetheless, limited attention has been directed toward the physically disabled in the Kingdom of Saudi Arabia (KSA), with the available research about the effects of ICT on the general population's social network usage also showing controversial results. This research sought to examine ICT implementation and daily use by taking into account the findings of ethnographic interviews and the observations with respect to a population of disabled individuals with mobility problems in the KSA. The endeavor laid special emphasis on how different media are used by such people in an effort to interact with others. The effect of assorted media on social networks was also investigated. The results highlighted the fact that various ICT media were used by the participants, in accordance with their specific requirements and living conditions. Mobile phones and computers were found to play a key role in the lives of these individuals, and were used to carry out a number of activities, among which, socializing with others was found to be one of the most prevalent. Despite the fact that online friendships were not likely to induce key changes in the real lives of the subjects, the participants valued their online friendships, recognizing them as a means of venting emotions and escaping the unhappiness in their lives.

[Abed MG. **Role of ICT in Social Network Usage among Physically Disabled Individuals in the KSA.** *NY Sci J* 2017;10(5):39-45]. ISSN 1554-0200 (print); ISSN 2375-723X (online). <http://www.sciencepub.net/newyork>. 8. doi:[10.7537/marsnys100517.08](https://doi.org/10.7537/marsnys100517.08).

Keywords: ICT Roles, Social Networks, Physically Disabled Individuals, ICT media, ICT-facilitated communication

1. Introduction

The benefits ICT has to offer to disabled individuals has been recognized and acknowledged by numerous academics, and is highlighted in literature as well (Moser, 2006). For a number of years, as a result of obstacles in the form of physical restrictions, including limited mobility, fatigue, and pain, in hospitable environments, and discrimination, the disabled population has experienced exclusion from social activities. The advent of ICT has, however, ensured that physical presence is no longer a requirement. Disabled individuals overcome some of the key hurdles they face with the help of ICT, thereby expanding their physical and social world (Gergen, 2000). This in turn facilitates their ability to manage their bodily disabilities, and participate in social interaction in a safe and comfortable setting (Seymour, 2004). Social presence theory (Spears, 1992) can be defined as "the awareness of others in an interaction combined with an appreciation of the interpersonal aspects of that interaction". According to Walther (1992) social involvement through ICT could help create a more balanced interaction environment. This is due to the fact that visual and social cues are hidden or otherwise limited in such interactions. Keeping this in mind, disabled people could experience fairer treatment in ICT-facilitated

communication. This could lead to them being judged according to their merits, such expressive ability and communication skills, rather than their impairments (Bowker, 2002).

Thus far, to the researcher's knowledge, no study has carried out a systematic investigation into ICT implementation among disabled individuals in the KSA. It is important to point out that various reports have shown that ICT is adopted among this population in relation to identifying employment opportunities and providing support. In spite of that, there is a shortage of online groups and websites centered on disabled individuals that is written in Arabic.

The present research seeks to investigate the way in which the disabled population in the KSA uses ICT in their daily lives, and how it affects their social networking and living habits. The paper will probe these issues with the help of the responses of a sample consisting of 11 disabled individuals, who were interviewed in Jeddah, KSA.

ICT Implementation: As stated by Bakardjieva (2006), the rationale behind implementing ICT covers concerns such as more efficient work or study, improved awareness of the development and trends of society, curiosity, and making use of a computer gifted by a friend or a relative. The rationale behind domesticating the Internet was also examined by

Bakardjieva (2006). The study revealed that it is used by people because of organizational pressure, curiosity and personal needs; the latter includes the need to be connected with others.

With specific consideration to the use of mobile phones, the study conducted by Ling and Yttri (2002) suggested that three different elements needed to be taken into account, namely, accessibility, coordination and security. The point being made was that these elements could have varying degrees of value depending on the user group. For instance, it is more likely that security will be the main justification for mobile phone use among the elderly, while coordination could be cited as the main reason for working parents. The research completed by Campbell (2008) also highlights the fact that mobile phone use is predominantly due to three reasons: security and safety, maintaining contact with friends and relatives, and general convenience. Generally, it seems that the need to communicate serves as a wide-ranging influence for mobile phone adoption, as highlighted by Campbell (2008), irrespective of age groups and activities.

The digital gap, however, remains within the disabled community, even though it is emphasized that disabled individuals who make use of the Internet were more likely to possess higher educational qualifications and live in cities (Guo, 2005). With regard to mobile phones, the divide is lessening between disabled and non-disabled individuals, with a significant surge in mobile phone use in developing regions. But this is only in relation to mobile phone adoption, with much work still being required (Hideo, 2006).

ICT Use: The disabled population uses the Internet for the same reasons as the general population: to seek out data and information, and to partake in banking, gaming, shopping and social networking (Mann, 2005; Kang, 2008). In addition to these shared patterns, disabled individuals also demonstrate their own unique patterns of Internet use. For example, despite the fact that the non-disabled and disabled groups both use the Internet to garner information, the latter group is more likely to search for information relating to health and government services (Bradley, 2003). The Internet is also considered by disabled individuals as an invaluable medium for maintaining and establishing relationships (Seymour, 2004). Furthermore, they are regularly involved with support groups and visit disability-related websites, sharing information, drawing support, talking to others in similar situations, and providing and receiving compassion (Ritchie, 2003). Through the application of the Internet, again, disabled individuals are able to receive services from medical staff, even when they are at home. These online services can help to

accumulate savings in terms of effort, time and money, while also enhancing the self-esteem and sense of well-being among the disabled (Magnusson, 2004).

Although, in the present time the mobile phone has wide-ranging and common everyday use in our lives it is recognized as being crucial to our day-to-day living (Srivastava, 2005). Disabled individuals have not been subject to in-depth investigation with regard to mobile phone use. Such studies have only been carried out for the deaf (Power, 2007) and among individuals with disabilities associated with language issues such as autism (Srivastava, 2008). For physically disabled individuals, mobile phones provide a way of communicating through text messages including Teletype (TTY) and Short Messaging Service (SMS).

The current work focuses on the use of ICT by physically disabled persons in the KSA, and could also facilitate better understanding of the effect of ICT on the under studied population's social networking. By directing the focus to the disabled population with mobility issues, and differentiating them from other types of disability, it becomes more reasonable and practical to draw a contrast between them and non-disabled individuals.

2. Material and Methods

Due to the fact that ICT adoption by disabled groups has not been examined in an in-depth manner in the Saudi context, this research has implemented a qualitative approach. In order to do so, it has used observations and ethnographic interviews. Ethnographic interviews are discovery-centered, and seek to investigate and gain insight of a group of people from their point of view. It is common for these to take place in the real-world context of the interviewees, with a general topic and an open question as the starting point, and the rest of the conversation directed by the interviewee's responses (Robinson-Stuart, 1996). In order to ensure that the conversation does not deviate from the topic in question, semi-structured interviews were carried out, with the questions centered on issues such as adoption obstacles, use trends, contacts with others through ICT use, ICT perceptions and disability issues. Study observations centered on the disabilities of the sample population, their living environment and ICT use.

Following the ethical approval, the researcher carried out the fieldwork, with Jeddah city chosen as the area of fieldwork as it is the researcher's hometown, thus facilitating better access to the sample population.

Subject recruitment was conducted with the help of local disabled persons' centers. Invitation letters were sent to the local disabled persons' centers,

describing the research purpose and seeking assistance in the recruitment of subjects. These centers provided lists of potential participants, but did not make direct contact with them as they did not want to make the individuals feel obliged to participate. The researcher then made direct contact with the concerned individuals. The chosen participants were any individuals who met the following criteria:

1. Subjects who were physically disabled and experienced mobility issues.
2. Subjects who make use of mobile phones and the Internet.

Exclusion criteria were also implemented:

1. Subjects with other disabilities, including cognitive, hearing and visual.
2. Subjects suffering from clinical depression or any other form of mental problem.

Subjects with physical disabilities were selected due to certain factors: they had fewer issues in relation to ICT in comparison with those use with other disabilities, and ICT offers them the opportunity to overcome those barriers.

Eleven subjects were recruited: nine males and two females, all of whom were aged between 22-38 years. The observations and interviews were carried out at the residences of the subjects or in the centers they were recruited from, with each session lasting 1-2 hours. The interviews were audio recorded; and transcripts were created and translated into English. Common themes were grouped and highlighted together. With regard to observations, notes pertaining to the participants and photographs of the subjects' residences were taken in order to garner a better understanding of ICT use on a daily basis. Table 1 shows the demographic information of the participants.

Table 1. Demographic information of participants (N = 11)

Variable		Frequency
Gender	Male	9
	Female	2
Age	(22-27)	2
	(28-32)	3
	(33-38)	6
Qualifications	Secondary	2
	Bachelor	8
	Master	0
	PhD	1

3. Results and Discussion

Adoption and Usage: The mode used by the disabled individuals to avail of ICT differed over the sample. The results imply that the amount of ICT and the

mode of ICT regularly employed were connected to the living circumstances of the participants.

The recruitment criteria of the research could impact its findings, as a major requirement was that the participants' had to be users of mobile phones and the Internet, which meant that they needed to possess prior experience of using mobile phones and the Internet. Thus, previously documented findings may not be viewed as representative of tendencies of ICT use across Jeddah city's disabled community, but function to provide background information to assist in better comprehending ICT use among disabled individuals. Even though recruitment criteria cannot ensure a precise landscape of ICT use, what could be deduced is that the participants were certain that mobile phones and computers formed part of the most significant function within their everyday lives. The findings illustrate that computers and mobile phones comprise two of the most important modes of availing of ICT. With regard to computers, all the participants had computers at their homes when they took part in the survey. In terms of mobile phones, all the subjects owned mobile phones and several even possessed multiple mobile phones for various uses.

The participants viewed their mobile phones and computers as prized items they were most unwilling to lose. All participants considered mobile phones as the most important ICT device in their lives. Seventy percent of subjects said computers were the most valuable and, thus, the most essential equipment. *"Life without mobile phones and computers is inconceivable to me"* P3.

The significance of mobile phones and computers is evident from its substitutive influence among ICT devices. The most apparent example was the replacement of televisions by computers and alternative television-based ICT equipment, including DVD and VCD. Prior to owning computers, the majority of participants had spent a great deal of their free time watching television. Later on, they spent the majority of their time using the computer and only watched television when the computer was not working or unavailable. A cause for this predicament is that *"television watching involves passive conduct"* P1. This aspect may have rendered the television less appealing compared to computers. Another substitution process occurred among mobile phones and fixed-line telephones. Following the massive distribution of mobile phones, several participants did not apply for fixed-line connection at their homes. While those already owning fixed telephone lines, opted for mobile phones as it did not necessitate them to go to a particular place to receive calls.

The subjects employed computers in their everyday lives for various uses. In general, they used computers to satisfy their curiosity, which was a direct

result of the impact of social inclinations. Thus, the main incentive for the majority of computer users during the primary phase was curiosity. Several participants acquired computers due to *“the apparent advantages of particular computer functions”* P11. As noted by Bakardjieva [7], the computer’s rising effectiveness in study- and work-related matters was one of the compelling reasons for adopting the device. Experts and students within the current study also believed that computers were very useful for them.

Furthermore, the increasing use of computers was driven by *“the wish to accumulate more revenue”* P5. Finally, the entertainment aspect of computers, especially games, was very appealing and was one of the chief reasons for the younger subjects of the study taking to the device. It is important to note that no difference was made between the use of computers and that of the Internet in this research due to their inter-reliant association. *“in the absence of the internet, the uses of a computer are restricted, while in the absence of computers, the internet loses the most widespread platform on which it may be employed”* P1. Thus, the subjects viewed them as a whole and rarely differentiated between the two.

On the other hand, the participants’ main reason for using mobile phones was to keep in touch with other individuals in an efficient manner. Even though other ICT devices, such as fixed land telephones and computers, may serve the same function, the special “mobile” character and the option of maintaining contact at any time and place render a far more appealing character to mobile phones. As concluded by Campbell (2008), the “possibility of contact” is what greatly influences the adoption of mobile phones. Thus, the mobile phone allows participants to organize activities in the absence of actual physical availability, thereby saving them considerable time and effort. Reinforcing the main incentive for mobile phone use, the subjects of the present study delineated the causes as to why disabled individuals find the mobile phone practical for maintaining contact with others. These causes encompassed organization, preservation of associations and a feeling of security. The results demonstrate that the capability to organize activities was the most important cause for acquiring mobile phones. In addition to organization, mobile phones were used by the participants as *“an instrument to sustain relationships and strengthen a feeling of belonging”* P8.

With regard to the patterns of use associated with disability, as mentioned in the literature review, the available research discloses that disabled individuals are more inclined to look for information regarding government facilities and health (Burnett, 2006) in addition to frequently visiting disability-associated sites and support groups to find friends (Bakardjieva,

2003). Comparable patterns appeared in the current research as well. Looking out for health-related information was fairly widespread among the participants. They sought treatment for their disabilities and searched for information concerning assistive instruments like artificial limbs and wheelchairs. Other participants scanned information about government policies or rules for disabled individuals. Even though the subjects did not experience circumstances in which they were required to employ these rules or policies in order to safeguard themselves, they considered it *“preferable to have such awareness beforehand”* P6. The majority of participants, however, stated that they acquired such information from alternative mediums including television, disabled peoples’ institutions as well as individual communication.

The Effects of ICT on the Disabled Individuals’ Social Networks: The individuals involved in this research perceived ICT devices as allowing them to contact other individuals in a more convenient fashion to administer their work, and family and friend connections. In the case of experts, mobile phones and the Internet assisted them in reaching their clients, colleagues and commercial partners swiftly in order to exchange information. Even though this use is not limited to disabled individuals, it has helped them more in comparison with the past when such ICT devices were not accessible. At that time, the exchange of information was nearly entirely dependent on physical movement which disabled individuals experienced challenges in. Now, the use of ICT devices does not necessitate physical motion, and disabled individuals draw benefit from conveniences available to nondisabled individuals and face no such issues in information exchange.

Previous research has censured the Internet for contending with other activities in terms of time, in a manner similar to television, with the result that people have less time for socializing with friends and family (Nie, 2001). Nonetheless, other academics assert that the substitution influences of the Internet are subject to the character of Internet use. For instance, online chat or email can result in more social connections, while individual activities like surfing the web do not actually enhance social connections (Zhao, 2006). The results of this research illustrate that the negative influence of the Internet toward social networks was not apparent, although particular kinds of Internet activities such as computer games could negatively impact such networks.

When questioned on whether they thought that the use of the Internet negatively impacted their associations with other individuals, the majority of participants said there was no effect on their associations, even though the Internet did *“take up*

some time which could be allocated to other activities” P9. For instance, several subjects stated that they normally left their homes prior to owning computers. Nonetheless, such activities did not actually benefit social connections, thus the alteration did not have an apparent negative effect on their relationships. It was worth observing, however, that “particular Internet activities like computer games could impose a negative effect on interpersonal associations, particularly family associations” P1.

An exciting dimension of the Internet is that it can provide a virtual community (Rheingold, 2000) in which it is easier to talk to strangers and make new friends by addressing the limitations of geographical positions (Seymour, 2005). Furthermore, the fact that social and visual cues are not as important in online interaction allows users the liberty to manage their personal data and construct their desired online images. These aspects of the Internet could have important significance for disabled individuals. *“For disabled individuals it is both a desire and challenge to make friends” P10. Also, as a result of their physical restrictions and limited range, they are less inclined to go out and socialize. Besides, “even though society has progressed considerably, there is still discrimination against disability, thus not all people are willing to have disabled friends” P10. To safeguard their self-esteem, several disabled individuals are unwilling to be friends with non-disabled individuals. With the help of ICT, the spheres of disabled individuals can be extended to socialize with more people, thereby surmounting locational barriers.*

A number of participants were selected to inform people about their incapacitation at the start of the conversation, as they did not wish to waste time and wanted to talk to people who were not concerned about their physical state. It was, however, more common for the subjects to reveal their disabled identity when they became closer to their online friends and wished to advance their associations, or when talking about particular subjects. Several participants did not disclose their disabled state on the Internet, stating that *“their topics of discussion were not pertinent to disability and thus it was not talked about” P8 and P11*, while others did not disclose it deliberately. The latter group felt that their disability limits them from making associations on the Internet as well. With a view to the response of these internet friends on when the members revealed their conditions, some online friends reacted negatively. *“The majority was taken aback and did not believe it; some online friends actually terminated the friendships following the disclosure of my condition” P2.*

Regardless of the above situation, there were several online friends who maintained contact with the participants despite being aware that the person on the other side of the screen had a disability.

Final Overview: This exploratory research directed its efforts towards developing an understanding of ICT implementation and use among individuals with disabilities, with specific reference to the effects of such use on their social networks. It was found that the subjects adopted a number of different ICTs in line with their perceived needs and living conditions. In much the same way as the general population, the subjects used computers to increase study or work efficiency, improve their earning power and also avail of a device that had recreational value. On the other hand, mobile phones were utilized with the aim of mainly contacting other people to carry out activities or maintain relationships. As demonstrated throughout the course of the research, both mobile phones and computers played a key role in the lives of the participants. Social networking with the help of ICT led to strengthened family bonds, and improved relationships with business partners and friendships. Some online activities, including gaming, however, were found to have a negative impact on social networks.

The research also recognized that it is possible for subjects to expand their social networks not only in geographical scope but also in number through the Internet, and that such individuals were not necessarily inclined to reach out to and interact with other disabled persons, but keen to do so with non-disabled persons. Various factors led to a decline in the level of enthusiasm in relation to establishing online friendships. The main factor in this regard was the difficulty informing friendships. Nevertheless, some subjects still maintain regular contact with their online friends, and feel more satisfied with their online friendships than their offline ones. For these subjects, online friendship was a way of venting and communicating their most personal emotions, and an escape from real world unhappiness, although it was not likely to bring about significant changes in their real lives.

The study has established that no significant difference exists between non-disabled and disabled persons with respect to the majority of the issues surrounding ICT adoption and use. It should be noted, however, that ICT-related activities are more beneficial for disabled individuals. Furthermore, ICT could prove useful for both disabled and non-disabled people with mobility problems, indicating the requirement of an in-depth examination in this field in future works. Previous studies on the disabled population (Dobransky, 2006) imply that some of the study subjects used the Internet to seek information in

line with their disabilities, with a specific focus on assistive devices and treatments.

This research also provides insights into a number of other aspects. To begin with, it has been argued by various academics (Hu, 2004) that the Internet proves ineffective for the development and maintenance of interpersonal relationships. Some subjects voiced their concerns about encountering unpleasantness while developing online friendships, whereas others were successful in making online friendships and also recognized as experiencing satisfaction in them. Accordingly, subsequent studies could be carried out with a view toward examining the various complexities of fostering online friendships, and making improvements centred on maximizing the potential of the Internet in the expansion of social networks. Second, this research provides support for the view that computer activities have varied effects on different social networks (Greenfield, 2006; Katz, 2006). The majority of the subjects did not believe that the Internet had caused any negativity in their interactions with others, whereas other participants, who were very much into computer games, did feel that their relationships with their family members had suffered.

4. Conclusion

ICT can be used to overcome the various obstacles in the physical world, such as allowing them to manage their daily lives, keeping in touch with others and seeking out information. Accordingly, such relationships create a sense of belonging, which is beneficial to the well being of a person, and also forms resources and social capital that have an effect on the day-to-day lives of people. As a result of the obstacles faced by disabled people, particularly those with mobility issues, there are difficulties in connecting with others. With the help of ICT, disabled persons' domains can be expanded, allowing greater opportunity for socializing.

Acknowledgements:

This Project was funded by the Deanship of Scientific Research (DSR), King Abdulaziz University, Jeddah, under grant No. (142-324-1437). The author, therefore, acknowledged with thanks the DSR technical and financial support.

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4/15/2017