

Sadia Dilshad<sup>1</sup>, Samina Rafique<sup>2</sup>

# Adult Literacy and use of Technology: A case study of Pakistan

DOI 10.24917/27199045.181.3

**Keywords:** long life, technology, adult literacy, old citizens, older people

## **Abstract**

The contemporary era of Pakistan can be characterized by the expectations of reaching old age and therefore having long life mainly due to better standards of hygiene; condition of life and better medical care (Giesler & Krings, 2015). The voice regarding old age and technology is pen down by different authors and it is highlighted that use of technology is need of the day either young or old (Formosa, 2013). The main aim of this study to find out the gap between old age people and use of innovative technology in 3<sup>rd</sup> world country like Pakistan. For this purpose the current survey study intends to explore the effect of adult literacy with the use of technology. The retirement age in Pakistan is 60 years. Furthermore, according to world population review 2020 people above this age are 2.73% of total population. These old citizens from Islamabad will be taken for the current study who mostly have basic education. Generally speaking mostly old citizens lives at their home with their children/grandchildren. Moreover, for the study data were collected through personal visit of the researcher to with the help of structured interview (which served as questionnaire at times) developed through intense review of literature. Pakistani government do not officially provide any sort of activity for such people but usually they organize the home gatherings of their age. Analysis done on the basis of quantitative data. On the basis of findings conclusions were made. It is concluded that most of the elderly female know to use smart mobile phones in their daily life. They have better knowledge to use digital home appliances and also made their life easy.

---

1 PhD., International Islamic University Islamabad, Pakistan, saadia.amjad@gmail.com

2 PhD., International Islamic University Islamabad, Pakistan, samina.rafiq@yahoo.com

## Introduction

Today, innovation has become need of individuals that they can't escape from. Or maybe, it is proper to state that it assumes a major function in most part of one's life. Envisioning a world without it is inconceivable. To state it in an unexpected way, innovation is answer to most issues of humanity. It has advanced over hundreds of years to be what it is today. The essential point of innovation is to improve solace of utilization in whatever structure it is. It is constantly intended to ease life of individuals. Innovation is fundamentally significant for each part of human life.

Now technology has likewise improved instruction. These days, present day hardware can be utilized for learning in schools. It is intended to facilitate the way toward learning and educating. Rather than writing boards, there has been a huge utilization of projectors in school.

Technology affects the way people communicate, learn and think. It helps the community and defines how people interact with each other in everyday life. Technology plays an important role in society today. It has a positive and negative impact on the world and affects daily life. We live in an era when technological progress is common. The internet and cell phones are a few examples. However, with the development of technology, all this has a downside.

One aspect of technology that has had a big impact on society is how it affects learning. This makes learning more interactive and collaborative, helping people to better interact with the material they are learning and having difficulty with. In addition, it gives you better access to resources. With the advent of the Internet, it gives us access to information 24 hours a day, and you have access to almost everything on the Internet. It also makes it easier for students to get the job done. Students can answer quizzes and exams more easily, and teachers who can teach online can be very effective. It also widens class boundaries by encouraging self-study. People can access the training through YouTube and social media. It helps students learn better than lecturing and reading textbooks. These technological advances have made learning more fun and more convenient.

Another way technology affects society is through communication, which is how we speak and communicate with each other around the world. Technology has brought many new methods of electronic communication. For example, there is email, social media, you can meet someone who lives on the other side of the world, but video conferencing, where you can conduct electronic conferences. Finally, technological advances in healthcare have helped keep people safe and healthy. There are many innovative apps on phones that, while people do track their weight, calories, heart rate, and other health parameters, at any time of the day. Increased accessibility of affordable treatments, changes in healthcare that benefit the elderly, and hospitals using cutting edge technology in their operating rooms.

However, research shows that mobile communication negatively affects people when it comes to communication and making personal contacts. Mobile technology can reduce communication and relationships between people. Less personal time when you find that you don't have enough time for yourself because you are still in touch with someone. It can also distract you from your schoolwork. There is also a loss of privacy as anyone can find you anywhere and anytime of the day. In conclusion, all of this affects the way people operate today. Without technological advances, our way of life would not be so complex. Technological influences are shaping the way people operate today (Allen, 2019).

For this purpose the current survey study intends to explore the effect of adult literacy with the use of technology. The retirement age in Pakistan is 60 years. Furthermore, according to world population review 2020 people above this age are 2.73% of total population.

## Research Design

Quantitative approach was used to obtain the required data. Survey method was applied. Sample was selected through convenient sampling technique from Islamabad territory only. Questionnaire was used to gather the responses of the participants. The start of the research was taken to record and do the structured interviews and the researcher conducted almost 30 interviews by paying the personal visits to the respondents but after that many respondents felt easy on self-responding in the absence of the researcher so researcher distributed the structured interviews in the form of a questionnaire to them. Although 350 women were approached for this research but only 200 responded comprehensively so 200 responses were analysed for the sake of findings and discussion. The age of the responded was 60 to 80 and all are women because they are facing challenges in keeping themselves updated in modern forms of communication especially during the pandemic. Women are less familiar with latest technology that's why we ensure that how much technology affects their daily routine and how much awareness they are needed to make their life easy and useful for the family. It was an observation that the latest means of communication like internet was having a deep impact on the lives of senior citizens in Pakistan but mostly the women were not feeling easy to use this and still prefer to have a one on one communication or a group discussion at their friends or the family members. While studying the issue it was noted that not only the communication but all the innovative technology based gadgets were not welcomed by these women despite their usefulness. Men are mostly not having a big issue with modes of communication here in Pakistan. Even the less educated male are aware of innovations in this field and do not face difficulty to use at all, so the target population was women only.

The female senior citizens from Islamabad were taken for the current study, which at least has basic education. Islamabad being the capital of Pakistan has the highest

literacy rate so no problem was faced for the collection of data but still the sample was taken by convenient sampling technique. Generally speaking in Pakistan maximum number of old citizens lives at their home with their children/grandchildren. So they have a good support at home to learn about new technology and its daily life usage. After collecting data, it was analysed and analysis was done through percentage and mean scores.

## Review of Literature

In the quickly maturing population, the old are called upon to adjust to new innovation and the requests of present day society. It is broadly acknowledged that senior people show low acclimation to the appearance of new advancements contrasted with more youthful ages, either on the grounds, that they don't have the innovative experience or in view of their present wellbeing status.

Pakistan at the verge of developing country has a big issue of literacy and technology approach in the lifestyle of the people in general and in older people on specific basis. The new technology although making a rapid way into the lives of Pakistani youth specially in big cities like Islamabad, Karachi and Lahore but the people above the age 50 still feel comfortable with their traditional gadgets for different tasks in the daily life. Islamabad is the capital city of Pakistan, and is governmentally regulated as a component of the Islamabad Capital Territory. Islamabad is the ninth biggest city in Pakistan, with the number of inhabitants in 3.1 million people. Built as an arranged city during the 1960s to as Pakistan's capital, Islamabad is noted for its exclusive expectations of living, safety, and bountiful greenery.

The city's ground breaking strategy, planned by Greek designer Constantinos Apostolou Doxiadis, separates the city into eight zones, including managerial, discretionary enclave, local locations, instructive parts, mechanical segments, business regions, and country and green regions which are controlled by the Islamabad Metropolitan Corporation, upheld by the Capital Development Authority.

Most of the populace lies in the age gathering of 15–64 years, around 59.38%. Just 2.73% of the populace is over 65 years old; 37.90% is beneath the time of 15. Islamabad has the most elevated education rate in Pakistan, at 88%.10.26% have a single guy or equal degree while 5.2% have an ace or comparable degree.

The 65% population works in offices either in public or private sector but the female working ladies are still in a small number only 28% are sharing the economy workload of the family and they are mostly working in education and health sector. Most of the female population serves as homemakers but with good knowhow about the new challenges and ever changing everyday technology. Moreover, at their push to utilize innovations, they generally face numerous challenges getting from segment attributes, for example, salary, training, geological area, potential incapacities, just as troubles identified with the unpredictability of innovation. Other contributing elements

for this low change in accordance with new advances are the absence of motivating forces, conservative hindrances, computerized aptitudes and proper preparing. A regularly held view is that the market isn't presently contributing enough on advancements for the senior clients, for example, thorough and user friendly benefits for more advantageous day to day environments. Moreover, numerous items and administrations regularly are not suitable to the requirements of senior clients, compounding the feeling of disappointment and prompting reliance on others.

The primary source of data for the older is the Internet, TV stations and magazines. In their push to assume more prominent liability for their own wellbeing, physical status and autonomous day to day environments, the older clients should be more educated using Internet, topical TV slots, magazines and different wellsprings of data.

Innovation may include the utilization of most basic ordinary electrical apparatuses (TV, kitchen, vacuum cleaner, dishwasher, and so forth.) or other more unpredictable machines (Automated teller machine (ATMs), PCs, cell phones and so on.) starting the capacity to appropriately utilize them.

## Results of the study

The main purpose of the research of this study to explore the gap between old age people (who have basic education) and use of technology in their daily life. Explore to what extend technology help them in their daily chores and to what extend they know to operate new gadgets to make their life easy. For this purpose sample was selected through convenient sampling technique and selected all old age women from Islamabad territory only. 200 responded from 350 participants were given their response through structured interview which severed as a questionnaire with 15 statements. Information were gathered by the fulfillment of a survey, comprised of 15 statements. These included short and close-ended questions, and was finished by close to home meeting of the specialist, in the wake of having given the fundamental data, unmistakably clarified the goals of the review and guaranteed namelessness of the respondents. After receiving the responses from target sample data were analyzed through percentage. Results of the study shown as under:

## Use of Electric Gadgets

Table 1. Use of mobile phone

	Frequency	Percent	Mean
Always	114	57.0	1.79
Sometimes	44	22.0	
Frequently	21	10.5	
Never	21	10.5	
Total	200	100.0	

In regards to use of mobile phone (of the 200 participants) 57% reported that they always used mobile phone and 10.5% never used mobile phones. The reason was not the poverty because in Islamabad the literacy rate is high and most of the people living here are office workers with a above average income. The respondents were house wives but still belong to a middle class family, they just hesitate to use smart phones (many responded that if they started using these phones their kids will make fun of them or treat them as ignorant) and also few of them faced issues e.g. hearing and visual issues More in detail  $M=1.79$  shows that mostly participants always used mobile phone.

Table 2. Use of Television

	Frequency	Percent	Mean
Always	120	60.0	1.55
Sometimes	60	30.0	
Frequently	11	5.5	
Never	9	4.5	
Total	200	100.0	

In regards to use of television (of the 200 participants) 60% reported that they always used television and 4.5% never used television because they are not interesting to watch. The reason is again not poverty but lack of interest in using android TV or the Television using cable network More in details  $M=1.55$  shows that mostly participants always used television gadget in our daily life.

Table 3. Use of ATM card

	Frequency	Percent	Mean
Always	93	46.5	2.19
Sometimes	39	19.5	
Frequently	6	3.0	
Never	62	31.0	
Total	200	100.0	

In regards to use of ATM (of the 200 participants) 46% reported that they always used ATM and 3% frequently used ATM. More in details  $M=2.19$  shows that mostly participants always used ATM gadget in our daily life.

Table 4. Can turn on &amp; off mobile/ laptop / computer

	Frequency	Percent	Mean
Always	96	48.0	2.06
Sometimes	47	23.5	
Frequently	6	3.0	
Never	51	25.5	
Total	200	100.0	

In regards to turn on & off mobile/ laptop / computer (of the 200 participants) 48% reported that they can always turn on & off mobile/ laptop / computer and 3% can frequently turn on & off mobile/ laptop / computer. More in detail  $M=2.06$  shows that mostly participants can always turn on & off mobile/ laptop / computer.

Table 5. Can open Mobile App on mobile

	Frequency	Percent	Mean
Always	90	45.0	2.23
Sometimes	36	18.0	
Frequently	12	6.0	
Never	62	31.0	
Total	200	100.0	

In regards open Mobile App on mobile (of the 200 participants) 45% reported that they always open Mobile App on mobile and 6% frequently open Mobile App on mobile. More in detail  $M=2.23$  shows that mostly participants always can open Mobile App on mobile.

Table 6. Dial or Receive Video call/ Use IMO App for Dial or Receive call

	Frequency	Percent	Mean
Always	117	58.5	1.82
Sometimes	35	17.5	
Frequently	15	7.5	
Never	33	16.5	
Total	200	100.0	

In regards to dial or Receive Video call/ Use IMO App for Dial or Receive call (of the 200 participants) 58.5% reported that they always dial or Receive Video call/ Use IMO App for Dial or Receive call and 7.5% frequently dial or Receive Video call/ Use IMO App for Dial or Receive call. More in detail  $M=1.82$  shows that mostly participants always dial or Receive Video call/ Use IMO App for Dial or Receive call.

Table 7. Use Messenger App

	Frequency	Percent	Mean
Always	81	40.5	2.35
Sometimes	36	18.0	
Frequently	15	7.5	
Never	68	34.0	
Total	200	100.0	

In regards to use of Messenger App (of the 200 participants) 40.5% reported that they always use of Messenger App and 7.5% frequently used use of Messenger App. 34% reported that they never use of Messenger App because they have not much familiar

about this App (the reason is not the availability of internet but they respondents don't prefer to use the smart cell phone). More in detail  $M=2.35$  shows that mostly participants always use of Messenger App.

Table 8. Send or Received text message

	Frequency	Percent	Mean
Always	111	55.5	2.05
Sometimes	21	10.5	
Frequently	15	7.5	
Never	53	26.5	
Total	200	100.0	

In regards to Send or Received text message (of the 200 participants) 55.5% reported that they always send or received text message and 7.5% frequently send or received text message. More in detail  $M=2.05$  shows that mostly participants always send or received text message.

Table 9. Can use searching engine on mobile (on Google & Chrome)

	Frequency	Percent	Mean
Always	72	36.0	2.47
Sometimes	39	19.5	
Frequently	12	6.0	
Never	77	38.5	
Total	200	100.0	

In regards to can use searching engine on mobile e.g Google & Chrome (of the 200 participants) 38.5% reported that they never use searching engine on mobile (on Google & Chrome) and 6% can frequently use searching engine on mobile (on Google & Chrome). More in detail  $M=2.47$  shows that mostly participants can never use searching engine on mobile (on Google & Chrome).

Table 10. Use YouTube for watching videos on mobile

	Frequency	Percent	Mean
Always	75	37.5	2.25
Sometimes	48	24.0	
Frequently	29	14.5	
Never	48	24.0	
Total	200	100.0	

In regards to use of YouTube for watching videos on mobile (of the 200 participants) 37.5% reported that they always use YouTube for watching videos on mobile and 24% never use YouTube for watching videos on mobile. More in detail  $M=2.25$  shows that mostly participants always use YouTube for watching videos on mobile.



Table 11. Use Digital Camera or mobile camera

	Frequency	Percent	Mean
Always	78	39.0	2.29
Sometimes	42	21.0	
Frequently	24	12.0	
Never	56	28.0	
Total	200	100.0	

In regards to use Digital Camera or mobile camera (of the 200 participants) 39% reported that they always use Digital Camera or mobile camera and 12% frequently use Digital Camera or mobile camera. More in detail  $M=2.29$  shows that mostly participants always use Digital Camera or mobile camera.

Table 12. Know how to connect the internet

	Frequency	Percent	Mean
Always	81	40.5	2.33
Sometimes	32	16.0	
Frequently	27	13.5	
Never	60	30.0	
Total	200	100.0	

In regards to know how to connect the internet (of the 200 participants) 40.5% reported that they always know how to connect the internet and 13.5% frequently know how to connect the internet. More in details  $M=2.33$  shows that mostly participants always know how to connect the internet.

Table 13. Used e-mail account

	Frequency	Percent	Mean
Always	89	44.5	2.29
Sometimes	39	19.5	
Frequently	18	9.0	
Never	54	27.0	
Total	200	100.0	

In regards to used e-mail account (of the 200 participants) 44.5% reported that they always use and 9% frequently used e-mail account. More in detail  $M=2.29$  shows that mostly participants always used e-mail account.

Table 14. Familiar with social networking tools (FB, Instagram, LinkedIn)

	Frequency	Percent	Mean
Always	75	37.5	2.39
Sometimes	32	16.0	
Frequently	33	16.5	
Never	60	30.0	
Total	200	100.0	

In regards to familiar with social networking tools e.g. FB, Instagram, LinkedIn (of the 200 participants) 37.5% reported that they always familiar with social networking tools (FB, Instagram, LinkedIn) and 16% sometimes familiar with social networking tools (FB, Instagram, LinkedIn). More in detail  $M=2.39$  shows that mostly participants always familiar with social networking tools (FB, Instagram, LinkedIn).

Table 15. Can you used digital home appliance

	Frequency	Percent	Mean
Always	108	54.0	2.08
Sometimes	29	14.5	
Frequently	3	1.5	
Never	60	30.0	
Total	200	100.0	

In regards to used digital home appliance (of the 200 participants) 54% reported that they always used digital home appliance and 1.5% frequently used digital home appliance. More in detail  $M=2.08$  shows that mostly participants always used digital home appliance.

## Discussion and Conclusion

This study explore the adult literacy and use of technology in daily life. Instruction of the basic educated elderly is the most basic step so as to get comfortable with new advancement of technology. More in detail, this can be cultivated through explicitly planned instruction programs that show older the manner in which

According to the results of the research, majority women always used their mobile phone and watching television in their daily life time. Similar study conducted by Uchida, Hata, Maturura, Aoyama (2001) only 10% women between the age of 70–89 were using mobile phone and 60% wants to learn how mobile is working and want to show their interest in using mobile phone. Shizuka conducted research on Japanese and showed that only 37% of women aged 60–70 years and some of (19%) women used smart phone in their life. Another similar study by Roupa, at al (2016) revealed that majority (78.3%) of the aged people used mobile phones.

This research showed that some of the women does not used ATM card in their daily life. It may be because they have no enough knowledge about the new technology

(Smart cards, Debit cards) and they may also feel difficult to handle the keyboard of ATM machine or may be it is hard to pay attention to learn to use ATM card in daily life. Similar study conducted by Arsenon et al (2009) who indicated that 57.8% of the senior members living in Athens had not ever utilized the ATMs and thusly they overlooked the administrations and openings gave by the machines of this sort. Unexpectedly, 5.9% of members detailed that they knew about all the administrations and abilities of ATMs. The motivations to abstain from utilizing ATMs were the trouble of taking care of the console, the absence of information about their tasks and the dread of being looted during the exchange.

Additionally, in Netherlands, Mollenkopf et al (2014), demonstrated that lone a little level of the older utilized the ATMs since the wide range of various thought that it was hard to acclimate to new innovation and for the most part to the utilization of new gadgets. In any case, the individuals who utilized them, announced very fulfilled and discovered that innovation encouraged their lives.

This study showed that always women can turn on & off mobile, laptop and computer. Also they are aware to open and use of mobile app. Majority women can dial or received calls and also used different app like IMO, Messenger, Whatsapp for communication (verbal and through video). Some of the women experienced to used search engine on mobile. And also not so interested to see videos on YouTube, the reason is that they are liked to watch TV daily.

Concurring the contrast among genders and the utilization of cell phones, there is an investigation led by Sri Kurniawan (2006), the United Kingdom, indicated that ladies were the individuals who make more and regularly aimless utilization of cell phones, particularly those old enough 65 to 74 years, at a level of 60%, while those matured 75 years and more seasoned, 36%. An exploration completed in Malaysia, among 176 senior residents, by Mohr Hairum Nizam et al, (2008) inferred that older individuals can utilize cell phones, particularly men use them at a rate 60 %.

The study also revealed that some of the women know or like to use digital camera or mobile camera and they also not so much aware to use social network (Facebook, Instagram, LinkedIn). Whereas most of the women used internet and used different home appliances like oven. Washing machine, vacuum, iron, refrigerators and AC. An extra review that was led in New Zealand by Alison Robins (1996), demonstrated that most of the senior residents delighted in at a high rate practically all homegrown offices, given by electrical gadgets. More in detail, 93% of the members had the option to deal with TV, 87% clothes washer and dryer, 99% high innovation fridges and 94% to utilize remote telephones. Like the current discoveries, the aftereffects of the by the Statistical Office of Finland (2003) indicated that 30% of the old ladies utilized clothes washers, though 7% of men utilized these electrical gadgets.

From all the above mentioned, is effortlessly observed that in nations where innovation is exceptionally grown, for example, Asian nations, the old are more acquainted

with the utilization of cutting edge telephones, contrasted with older individuals living in nations where innovation is in beginning phases and is being worked on.

The above analysis revealed that it is very necessary to make familiar elderly women with new innovations which makes life easier. Although the Pakistan is a male dominating society but the female are very influential on the family matters. 98% population is Muslim by religion and Islam has put the female especially the mothers on a very high pedestal. So most of the families are paying much attention to their elderly people but do not motivate them to keep themselves updated especially as far as technology and its uses in daily life are concerned. In societies like Pakistan the old age people are expected to pay more attention to their lives hereafter after a certain age especially when their children get married and they have their own children the role of the parents change and they are supposed to act less modern more orthodox. Although this is not the demand of the society but many female think that by keeping in pace with the technological world they will overlook their role as role model for their grandchildren. So they try to keep their focus on making their younger generation more family and relationship bounded then to keep themselves busy with the modern gadgets. They have a deep fear that this technology will break the family bonding and make them alone so they are reluctant for this way of life. More in detail, this can be cultivated through explicitly planned instruction programs that show older women the way new advances work. Besides, these projects ought to be likewise routed to people who have a place to the steady climate of the old for example, the younger individuals from the family. It would be useful if the more youthful made a difference them to acquaint with each item, eliminating fears of utilizing high innovation gadgets. It is a high demand of the time that the older people are helped by the younger to transform the orthodox relationship into the modern and more interactive relationship. Youth have to be careful and try to be more attached and respondent to their grandparents just to make them confident for the use of technology.

As the results show that there is a good size population who has never or least used some new ways of communications or to get information. The reason was not the poverty or the unavailability of the resources but the fear of elderly people to lose the affection of their children or grandchildren which they found on the situation when they are not using the modern ways of communication with them. In some cases and to some extent it is true also that when the younger generation know that their parents or grandparents cant accesses the technology they pay personal visits and make sure that they don't face difficulty in any matter but otherwise they would just suggest the way out and pay least attention. But still the importance of technology needs to be focused by all and the way out has to be looked for if we want to keep the pace with the modern world.

## References

- Aalto Kr. (2003). *Who washes the laundry in Finland?* National Consumer Research Center, Finland.
- Arsenos P., Sapountzi-Krepia D., Roupa Z., Zafiri V., Nikas M., Darivakis S., et al. (2009). Aspects of money management in elderly populations. *Health Science Journal*, Vol 1, Issue 1.
- Christodoulou G.N., Ed. Beta, McKenzie B., Cambell J. Race, (1987). Socioeconomic and the subjective wellbeing of older Americans. *Int J Aging Hum Dev.*, 25(1): 43–61.
- Cutler D.M., Meara E. (2001). Changes in the age distribution of mortality over the 20th Century. *NBER Working Paper* No 8556.
- Emke-Poulopoulou I. (1999). *Greek elderly citizens. Past, Present and Future.* Ed Ellin, Athens.
- Kontaxakis B.P. (2000). *Third Age People.* Athens.
- Kouroupetroglou G., Mitsopoulos E. (2000). *Speech-enabled e-Commerce for Disabled and Elderly Persons.* Proceedings of the COST219 Seminar Speech and Hearing Technology, Cottbus, Germany.
- Kouroupetroglou G., Nemeth G. (1995). *Speech Technology for Disabled and Elderly People, chapter in the book "Telecommunications for All".* Ed. Patrick Roe, Published by the European Commission – Directorate General XIII, Catalogue number: CD-90-95-712-EN-C, pp.186–195.
- Kurniawan Sri. (2006). *An explanatory study of how old women use mobile phones.* Lecture Notes in Computer Science, UK.; 4206: 105–122.
- Margarinou M., Goulia E. (1997). *The nurse close the elderly.* Ed. Tavitha, 4th edition, Athens.
- MohdHairulNizam MD Nasir, HazrimaHarsan, NazeanJomhavi. (2008). The use of mobile phones by elderly: A study in Malaysian Perspectives. *Journal of Social Sciences*, 4(2): 123–127.
- Mollenkopf H., Marcellini F., Ruoppila I., Szeman Z., Tacken M., Oswald F., et al. (2014). The MOBILATE project – enhancing Outdoor Mobility in Later Life. *European Journal of Aging*, Vol 1, Issue 1.
- Roupa, Z., Nikas, M., Gerasimou, E, Zafeiri, V., Giasyrani, L., Kazitori, E., & Sotiropoulou, P. (2016). The use of technology by the elderly. *HEALTH SCIENCE JOURNAL*, 4(2): 118–126. doi:1791-809X
- Shizuka A. (2006). *Social benefits of communication Technologies for aging Population-A case study of Japan.* Asia Culture Forum, Japan, session 8.
- Uchida H., Hata Y., Maturura S., Aoyama H. (2001). An evaluation of use of information technology equipment among Japanese elderly women? Relation between health status and the preferred input device for the Internet. Department of Health Education, Himeji Institute of Technology, Shinzaikehoncho. *Asia Pac J Public Health*, Vol 13.