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The New Educational Review

An Experience of the Evergreen Elder University in Taiwan: Perspectives on The Mobile Users

Abstract

Population aging has become an increasingly severe problem in recent years. Based on the diversity of the mobile functions, and the advanced mobile technology, the elders might use the modern mobile to get the conveniences of the elder's living.

In our study, 34 senior citizens in the UK, and 56 persons in Taiwan, students of the Evergreen Elder University, answered the questions. The compared results showed that the factor of personal or family dependence and technology dependence are dominant in the UK, but the factors of personal or family dependence and social dependence are dominant in Taiwan. Elders' education will be a hot topic of education because of the increasing population of elders. The key variables, i.e. demographic, social, psychological, and technological ones, are satisfied to be the growth of elders' education in many developed and developing countries. Based on the duties and resources of the religions and universities, a diversity of elders' education can be expected.

Keywords: *elders' education, mobile, technology acceptance*

Introduction

Population aging has become an increasingly severe problem in recent years. In view of this, the United Nations designated 1982 the International Year of Older Persons and held the World Assembly on Aging in Vienna, Austria over 2 weeks

beginning on July 26, 1982. The purpose of this assembly was to promote the recognition of the problem of aging in developing countries and to facilitate coping strategies. The assembly also warned that population aging would result in severe social problems on a global scale.

Mobile communication is very popular in modern countries. Because of the real-time mobile communication, people can connect with others any time, and anywhere. Based on the diversity of the mobile functions and the advanced mobile technology, elders might use the modern mobile to get the conveniences of the elder's living. Therefore, the technology acceptance of new mobile functions is a valuable topic for the educators of elders, mobile venders and industries to meet the increasing population of world elders.

Davis (1989) studied the perceived usefulness, perceived ease of use, and user acceptance of information technology. Kwon & Chidambaram (2000) began to study the cellular phone adoption to test the technology acceptance model. Sarker & Wells (2003) investigated the understanding of mobile handheld device use and adoption. Venkatesh et al (2003) proposed a unified view to user acceptance of information technology. Van Biljon (2007) presented *A model for representing the motivational and cultural factors that influence mobile phone usage variety.* Judy and Karen (2008) presented their investigation into mobile phone adoption by older users. They reported factors that could influence mobile phone acceptance of senior citizens. Factor analysis and questionnaire aided to build the adoption matrix of technology acceptance through fine reviewing the factors which have been shown in the research of Davis (1989), Kwon & Chidambaram (2000), Sarker & Wells (2003) Venkatesh et al (2003) and Van Biljon (2007).

An interesting aspect of the original motivation of this study was the comparison of the perspectives of the modern mobile functions of the senior citizens in the UK and Taiwan. Therefore, we used the same questionnaires in the study of Judy and Karen (2008) to scale the acceptance of mobile technology by the senior users in Taiwan.

Method

The sampled senior users were the students of the Evergreen Elder University (EEU) in Taipei, Taiwan. The name of the EEU is "Pine-Aging", which means a person who can live as long as pine, i.e. an "evergreen" or "forever young" person in Chinese. A precise introduction of the "Pine-Aging" EEU was described as follows:

Churches inherently offer favorable conditions for ameliorating the problems of elderly people. These include spacious sites in which activities can be held, outstanding pastors, Sunday school, church councils, and the Evergreen Fellowship system. These favorable temporal, geographical, and human elements can promote the welfare of the elderly. Therefore, a systematic investigation should be performed as soon as possible to facilitate the future promotion of the social welfare of elderly people. In particular, the establishment of universities for the elderly in churches should be given precedence. On April 28, 1990, Bang Kah Presbyterian Church proposed the establishment of a Bang Kah branch of Evergreen University to the Evergreen Society and received consent in principle (Website of Bang Kah Presbyterian Church). On May 12, 1990, the church held its first preparatory meeting for the establishment of the school and invited Pastor Li-Li Guo from the main branch of Evergreen University at Hsinchu Presbyterian Bible College to offer guidance. The second and third preparatory meetings were held on June 15, 1990, and June 22, 1990. Subsequently, a detailed proposal for the school plan was developed and accepted at a church council meeting on July 14, 1990. The documents required of enrolling students were prepared at this time. In addition to public announcements and news releases, the church also invited pastors from a number of churches, the chairman of the Evergreen Fellowship, and members of the Taipei Presbytery. The Evergreen Department of the Taipei Presbytery gathered to celebrate Father's Day on August 8, 1990. The Leaders Fellowship of the Women's Department of the Taipei Presbytery called for full support on August 20, 1990. By August 20, 1990, 36 students had registered. On September 10, 1991, a ceremony was held to celebrate the opening of the school and classes officially began in Taipei, Taiwan, ROC.

The experiences of the senior students can be communicated in the EEU, and they can acquire more knowledge introduced by the invited instructors in class. In our study, 56 persons who were the students of the EEU answered the questions in the Appendix. They all lived in the Big Taipei Area, located in the north of Taiwan. In Judy & Karen's study, there were 34 sampled senior persons who answered the questions.

Results

The mother tongue of the 34 sampled senior persons in the UK was English, but in Taiwan there were 18 traditional Mandarin, 1 Hakka, 37 Taiwanese, and 9 both traditional Mandarin and Taiwanese among the 56 sampled senior persons. The

compared results of questions 2 to 5 are presented in Figure 1. The compared percentages of the samples (UK and Taiwan) were male (29.41%, 10.71%), female (70.59%, 83.93%), and null (0%, 5.36%). The distribution of age was 60 to 69 (38.24%, 26.79%), 70 to 79 (47.06%, 42.86%), and 80 or elder (14.71%, 30.36%). The mobiles of the samples were used by contract (55.88%, 71.43%), pay as you go (44.12%, 7.14%), and null (0%, 21.43%). The mobiles of the sampled persons were bought themselves (47.06%, 55.36%), others bought them for them (44.12%, 30.36%), passed on by someone else (8.82%, 7.14%), and null (0%, 7.14%). Generally speaking, the distribution of the answers to the 4 questions was closed. A large difference occurred in the 4th question. Fortunately, the answers of "by contract" in the UK and Taiwan were over 50%. Questions 1 to 5 explored the personal information and the users' mobile information. The sampled senior persons in the UK and in Taiwan were randomly picked. Therefore, the similarity is not occasional. Some of the population distribution of age and social structure is similar in both the UK and Taiwan. However, our study focused on the use of mobile

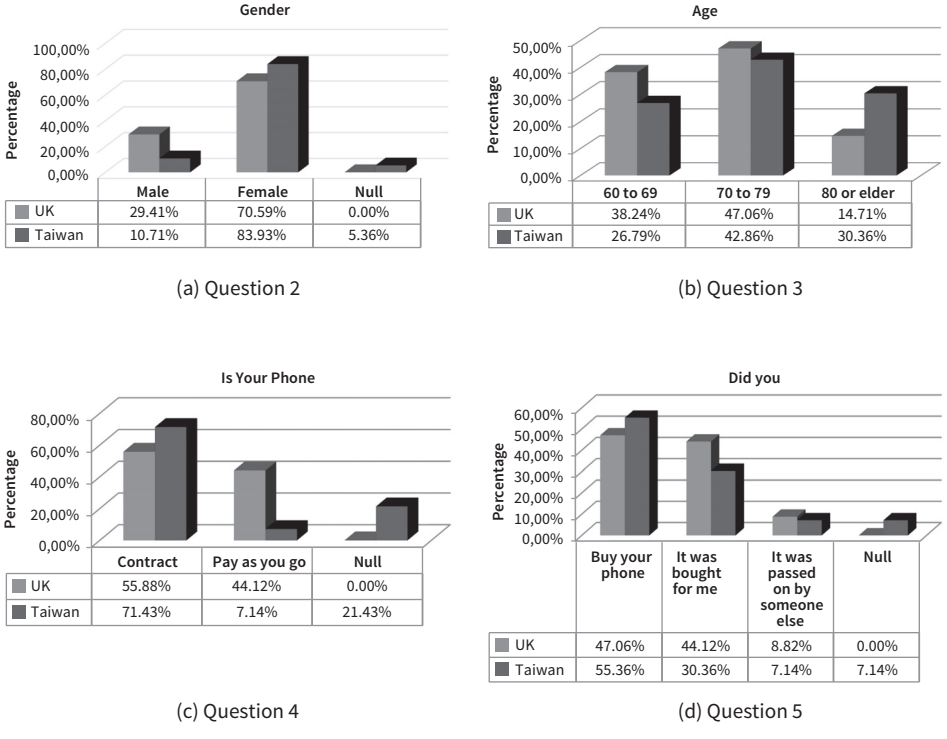


Figure 1. The compared results of the 2nd to 5th questions

technology. Therefore, the small differences in these questions improve the value of the following comparisons.

The 6th question included 5 scenarios of situations frequently encountered in their everyday life. The responses of the senior persons are as follows:

Scenario 1

Jim lives alone. One of his children has emigrated. He is 75 years old and needs to keep in touch. He has decided to get a mobile phone so he can receive pictures and messages. Who should he get advice from before he goes to buy a phone?

A. people would ask their children (26.47%, 41.07%)
B. they should ask people of their own age (not their children) (5.88%, 14.29%)
C. people would go to mobile phone vendors for information (67.65%, 21.43%)
D. null (0%, 23.21%)

Scenario 2

Leslie is 75 years old with a mobile phone, which was given to him by his daughter, and he has been using it for 2 years. He now feels confident using it. She has now renewed her contract and wants to give him her old mobile phone. Do you think he will take it?

A. You can sell the old one (32.35%, 48.21%)
B. Memory loss and difficulty in learning (50%, 10.71%)
C. It depends on the person and the circumstances (17.65%, 23.21%)
D. null (0%, 17.86%)

Scenario 3

Pam has had a stroke. She is worried that it will happen again. Do you think she could use her mobile phone in some way to make her feel less vulnerable?

A. mobile phone could be useful in emergencies (61.76%, 69.64%)
B. scared or confused or unable to find spectacles (35.29%, 0%)
C. it was a good idea, but not particularly, since older people find phones difficult to use, even more so when stressed (2.94%, 3.57%)
D. null (0%, 26.79%)

Scenario 4

Peter, aged 85, needs to take his medication every day at noon and he keeps forgetting. Can his mobile phone help him?

A. yes (82.35%, 75.00%)
B. no (14.71%, 5.36%)

C. not sure (2.94%, 10.71%)
D. null (0%, 8.93%)

Scenario 5

Tim likes to travel alone now that he has retired. His family is concerned about him. He says they should not worry because he has his mobile phone with him. Is he right?

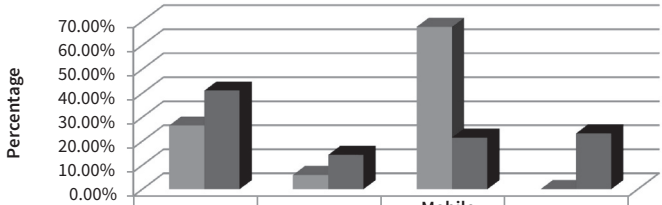
A. yes (79.41%, 73.21%)
B. no (20.59%, 5.36%)
C. not sure (0%, 16.07%)
D. null (0%, 5.36%)

The 8th question investigated the most frequently used functions, every participant could select the top 3 most frequently used functions from 21 items. The results are presented in Figure 3. The frequently used functions (over 10%) were alarm (26%, 33%), camera (11%, 42%), check missed calls (11%, 42%), text messages (41%, 41%), phone with phone book (70%, 23%), and phone typing in number (32%, 5.3%).

Discussion

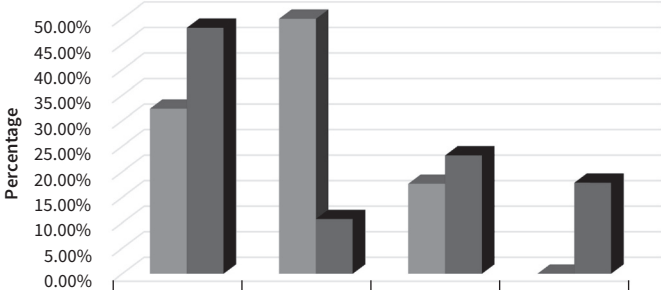
The perspective on the language for the education of EEU, language union is a crucial advantage of elders' learning, because it is impossible to ask a senior person to learn a new language. English is the official language not only in the UK, but also in many other countries worldwide. Therefore, it is good for the UK for its EEU education. In Taiwan, all people speak traditional Mandarin as the main official language. Elders' mother tongues are different, which was caused by the history of Taiwan and China. Briefly, language is not a communication problem in Taiwan. However, traditional Mandarin in Taiwan, and simplified Chinese in China are a little different, and will be a barrier of EEU development from Taiwan to China.

In the 2nd question, females are the majority of the sampled elder persons. We think it is not occasional in the UK and Taiwan. The reasons are the average life and the social activities of gender differences (Williamson, 2000). This points out the possibility of the future student of EEU. The distributions of age make no difference. The main age range is 70 to 79, which might be a hint of the necessity of elders' education. In question 4, the majority of answers is mobile communication



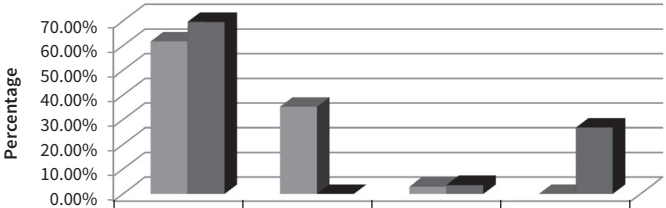
	Ask their children	Their own age persons	Mobile phone vendors	Null
UK	26.47%	5.88%	67.65%	0.00%
Taiwan	41.07%	14.29%	21.43%	23.21%

(fig. 2a) Scenario 1



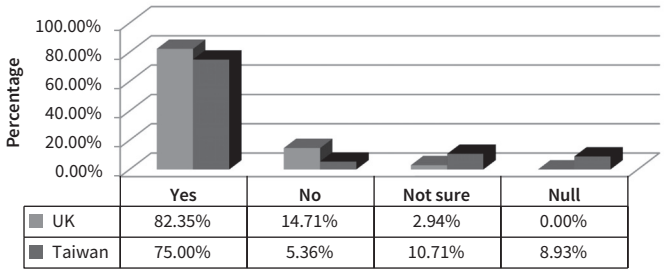
	Sell the old one	Memory loss…	Person and the circumstances	Null
UK	32.35%	50.00%	17.65%	0.00%
Taiwan	48.21%	10.71%	23.21%	17.86%

(fig. 2b) Scenario 2



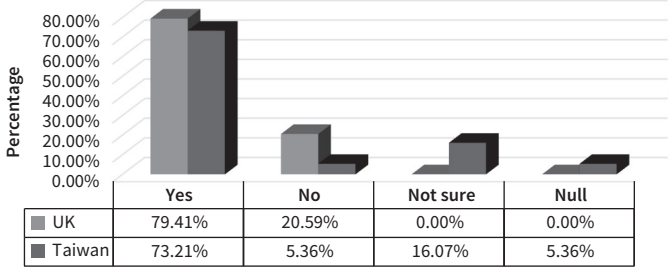
	Useful in emergencies	Scared or confuse	Good idea, but not particle…	Null
UK	61.76%	35.29%	2.94%	0.00%
Taiwan	69.64%	0.00%	3.57%	26.79%

(fig. 2c) Scenario 3



	Yes	No	Not sure	Null
UK	82.35%	14.71%	2.94%	0.00%
Taiwan	75.00%	5.36%	10.71%	8.93%

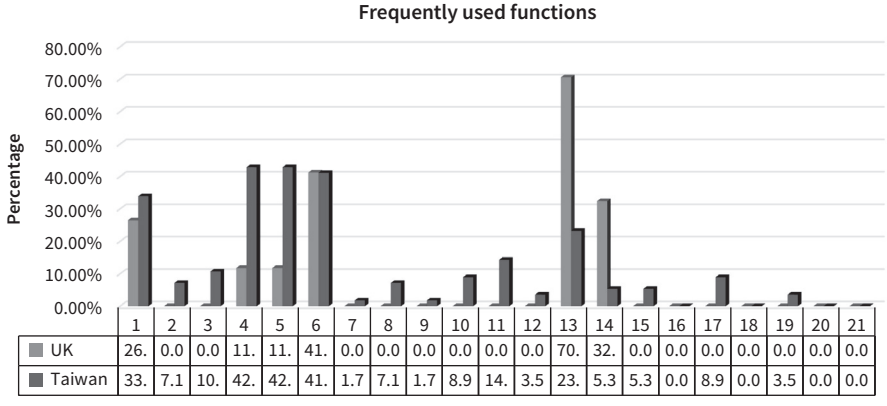
(fig. 2d) Scenario 4



	Yes	No	Not sure	Null
UK	79.41%	20.59%	0.00%	0.00%
Taiwan	73.21%	5.36%	16.07%	5.36%

(fig. 2e) Scenario 5

Figure 2(a–e). The compared answers to of the 6th question which includes 5 scenarios



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
UK	26.	0.0	0.0	11.	11.	41.	0.0	0.0	0.0	0.0	0.0	0.0	70.	32.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Taiwan	33.	7.1	10.	42.	42.	41.	1.7	7.1	1.7	8.9	14.	3.5	23.	5.3	5.3	0.0	8.9	0.0	3.5	0.0	0.0

Figure 3. The most frequently used functions. Every participant could select the top 3 most frequently used functions from 21 items.

Table 1. Factor analysis of scenarios 1 to 3.

Scenario	Technology	Social	Personal or family
1	people would go to mobile phone vendors for information	they should ask people of their own age (not their children)	people would ask their children / null
2	Memory loss and difficulty in learning	You can sell the old one	It depends on the person and the circumstances / null
3	it was a good idea, but not particularly since older people find phones difficult to use, even more so when stressed	mobile phone could be useful in emergencies	scared or confused or unable to find spectacles / null

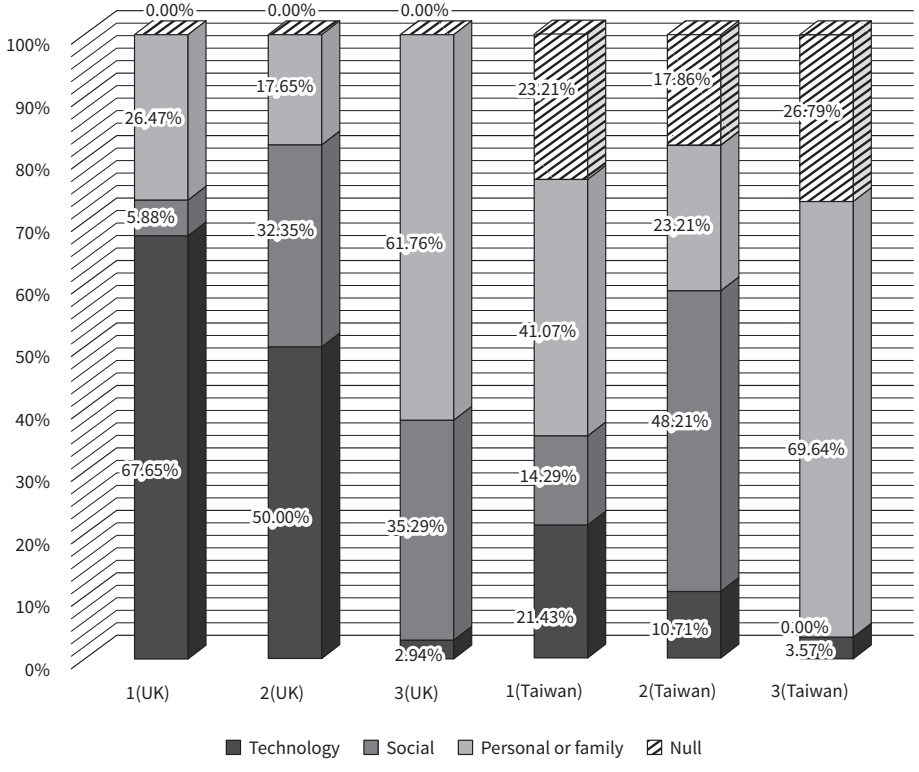


Figure 4. The results of factor analysis of scenarios 1 to 3.

by contract, which accounts for the success of wireless communication in both countries. This also explains the majorities of the 5th question.

Lu and Tung (2012) have proposed a 3-dimensional factor analysis method to show the relationship of interactive two factors with a quality scale. The question of scenarios responded to the fact analysis of mobile technology acceptance. We divided the answers to question 6 into 3 factors: technology dependence, social dependence, and personal or family dependence, and the answers to scenarios 1 to 3 are shown in Table 1. Based on the data in Figure 2, we computed the distributions and obtained Figure 4. In the UK, the factors of personal or family dependence and technology dependence are dominant, but in Taiwan, the factors of personal or family dependence and social dependence are dominant. Scenarios 4 and 5 use yes-no questions which show the acceptance of mobile functions in healthcare. Most of the participants answered yes in the UK and Taiwan, i.e. technology dependence is dominant in both countries. In summary, the technology dependence is the most dominant factor for senior citizens to use mobiles in the UK and Taiwan.

The frequently used functions (over 10%) were alarm (26%, 33%), camera (11%, 42%), checking missed calls (11%, 42%), text messages (41%, 41%), phone with phone book (70%, 23%), and phone typing in number (32%, 5.3%). The reasons for the differences, such as checking missed calls, camera, etc., are the fast development of the smart phone to make some complex functions easy. The other reason can be the fact that the sampled senior persons in Taiwan were students in EEU. The social activities help them use the mobile smoothly. Lamb and Brady (2005) pointed out that senior persons enriched their lives in a safe and nurturing community where teachers and students work together. It is also a community in which enough trust is established in a reasonably short period of time that people feel comfortable sharing deep and personal communications with each other. Tung et al. (2012) also indicated the importance of English in life-long learning (LLL). Martin (2003) emphasized that demographic, social, or psychological variables are key ones in LLL. However, the developing speed of modern technologies, which include mobile, robot, wireless communication (Shibata et al., 2003; Venkatesh et. al., 2003; Parlitz et al., 2007) and many other fields, is as fast as a flying arrow. Besides, adults nowadays work with the use of computers. Therefore, our study prosed that the technology will be a new key variable in LLL in Martin' study.

Conclusion

Elders' education will be a hot topic of education because of the increasing population of elders. The key variables, i.e. demographic, social, psychological, or technological ones, are satisfied to be the growth of elders' education in many developed and developing countries. Based on the duties and resources of religions and universities, a diversity of elders' education can be expected. The results of the questionnaire in the study pointed out that it is possible to use new mobile technology to aid elders' education. The scenario studies showed that the study in the UK presented the technological dependence, and the one in Taiwan showed social dependence. However, it might be changed by the nature of modern technology. Moreover, the population density is very high in Taiwan, so the social dependence and person and family dependence are more obvious.

Acknowledgements
The authors thank for the valuable comments from Judy van Biljon (University of South Africa, South Africa) and Karen Renaud (University of Glasgow, UK) and the support from the project numbers of NSC101-2221-E-562-004, and NSC102-2627-E-002-005, Ministry of Science and Technology, Taiwan, Republic of China.

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Appendix

Questionnaire

1. What is your mother-tongue (first language that you learned to speak)?
2. Are you?
   [a] Male [b] Female
3. How old are you?
   [a] 60– 69 [b] 70– 79 [c] 80 or older
4. Is your phone?
   [a] Contract [b] Pay as you Go [c] Null
5. Did you?
   [a] Buy your phone [b] It was bought for me [c] It was passed on by someone else [d] Null
6. Scenarios presented in questionnaire:
   1) Jim lives alone. One of his children has emigrated. He is 75 years old and needs to keep in touch. He has decided to get a mobile phone so he can receive pictures and messages. Who should he get advice from before he goes to buy a phone?
   2) Leslie is a 75 years old with a mobile phone, which was given to him by his daughter, and he has been using it for 2 years. He now feels confident using it. She has now renewed her contract and wants to give him her old Cell Phone. Do you think he will take it?
   3) Pam has had a stroke. She is worried that it will happen again. Do you think she could use her mobile phone in some way to make her feel less vulnerable?
   4) Peter, aged 85, needs to take his medication every day at 12 noon and he keeps forgetting. Can his mobile phone help him?
   5) Tim likes to travel alone now that he has retired. His family is concerned about him. He says they shouldn't worry because he has his mobile phone with him. Is he right? What should he do to allay their fears?
7. Tick features that the participant uses and record keys pressed to do so:

1	Alarm	**11**	Games
2	Calculator	**12**	Torch
3	Calendar	**13**	Phone with Phone Book (save numbers)
4	Camera	**14**	Phone typing in number
5	Check missed calls	**15**	Photo album/gallery
6	Text messages	**16**	Picture messaging
7	Text messages with predictive text	**17**	Personalised ringtones
8	E-mail	**18**	Profiles(change volume, etc.)
9	Transfer Money	**19**	Set reminders on calendar
10	FM radio	**20**	Stopwatch

21 Other? Features you would like to use but don't know how to: …